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Topic 1. IMF-EXTERNAL SECTOR REPORT

Important for subject: Economy

The International Monetary Fund (IMF) recommended that India reduce its the fiscal and monetary stimulus gradually in the External Sector Report.

- It is forecasting the current account deficit of India (CAD) to grow by 3.1 percent of its GDP in FY23, from 1.2 per cent of GDP for FY22.
- It will stabilize in the long term. The net investment portfolio of India (NIIP) has increased to -11.1 percent of GDP, up from -13.5 per cent of its GDP as of close of 2020.
- Gross foreign liabilities and assets totaled 30.5 percentage of GDP, and 41.7 percentage of GDP respectively.
- The majority of assets were comprised of reserve and (outward) FDI, whereas the liabilities comprised the majority of FDI along with other types of investments.
- External debt obligations of India are not as high as those of its others since it is focusing principally on getting FDI instead of the unstable FPI.
- India's official reserves for forex hit the record level of \$638.5 billion by the end of 2021, based on the current surplus in the account.
- The reserves dipped in the following months but were still at a level that was comfortable considering that there were eight months worth of coverage for imports and 223 per cent in short-term loans (on remaining maturity) and 195 percent from the composite measure.
- Suggestions to ensure that the external sector is in balance over the medium term:
- India requires the development of export infrastructure.
- Sign Free Trade Agreements with important trading partners to increase exports. More liberalization of the investment policy.
- Reduced tariffs, particularly on intermediate products.
- Gradual withdrawal of fiscal as well as stimulative monetary policy.
- The flexibility of exchange rates should serve as the principal shock absorber with minimal intervention for market instability.
- The concept: Fiscal and Monetary Policy Stimulus: Generally speaking, the stimulus measures are designed to stimulating demand, either through spending by the government on its own account or increasing the disposable incomes of households by

tax concessions or cash transfers.

- It helps boost confidence in businesses and helps restart projects that have been stalled. It aids in job creation and kicks off a positive cycle of growth and demand.
- Both Monetary and fiscal stimulus packages are released in times of recession or when production or levels of employment are at or below their sustainable levels.
- Fiscal stimulus is the term used to describe an increase in consumption by the government or decreasing taxes.
- In the case of the COVID-19 pandemic, the federal government announced a fiscal stimulus program that was worth the amount of Rs. 20 Lakh crore. Monetary stimulus is the term used to describe lowering rates of interest or other methods to increase the amount credit or money.
- Fiscal stimulus Monetary stimulus is a government-controlled policy that involves adjusting taxes and spending by the government to boost the economy.
- This monetary stimulation is managed by central banks to regulate the economy by altering the amount of money that is available and the costs to borrow i.e. the interest rate.
- The government utilized the fiscal stimulus programs to affect overall supply and demand through cutting taxes while also increasing spending and encouraging growth in the economy.
- A Monetary stimulus is a method that central banks use to control the flow of money within the country.
- The most important tool for the monetary stimulus is to lower the interest rates.
- Fiscal stimulus is implemented by the government via direct spending and increases the process of hiring to encourage growth and employment.
- Monetary stimulation works in the following ways : promoting companies to invest through reduction of interest rates on marketing.
- Increase the amount of money available by injecting more money into the economy. Fiscal stimulus packages are the best option to boost demand and economic activity during a recession.
- A monetary stimulus can help put more money in the pockets of people during times of recession.
- What is the reason it should be removed?

- According to the Tobin Funnel model, a nation has access to two taps, one tap is for net government expenditure and the other for the supply of money.
- The water flows through a funnel, which is typical, into the tank below.
- Once the tank underneath the funnel is full and it is overflowing, it takes the form of inflating.
- The additional borrowing by the government creates massive public debt. In the instance of India the bond market thinks that the central government's borrowing plan for the fiscal year to come is excessive.
- Additionally there is also inflation. RBI is the inflation-controller of the economy, as well as a debt manager.
- It places RBI in the position of having to decide which is whether it should increase interest rates to combat inflation or hold them at a lower level in order to fund the government's budget.
- Therefore, in light of the increasing inflation and the limits on financing debt, the stimulus must be removed slowly.
- Report on the External Sector External Sector Report It analyzes global developments in the external sector and provides multilaterally coherent assessments of the positions on the outside of the world's top economies, accounting for over 90 percent of GDP worldwide.
- The report comprises an overview chapter which is focused on multilateral issues and an analytical chapter that examines topics that are that are relevant to the study of sector dynamics in the external market and mechanisms for adjustment as well as a concluding chapter that details the external assessments on each of the thirty economies examined.
- The External Sector Report, produced every year since 2012, is one of the most important aspects of the IMF's monitoring.

Topic 2. RBI MONETARY POLICY & OBICUS

Important for subject: Economy

The MPC has increased the repo rate in total by 140 bps during the May-August 2022 time frame from 4 percent to 5.40 percent in order to curb the rate of inflation while balancing that allows growth to the economy.

What is the reason for the increase?

- The RBI hopes in bringing inflation down to the desired 4 percent (+/-2 percent) with inflation currently over the 6% tolerance limit for six consecutive months.
- How do you be able to control the rise in inflation?
- Repo rate is what rate the RBI lends commercial banks.
- When interest rates rise the money becomes more costly which results in less demand for goods and services, as well as decreasing the rate of inflation.
- What impact will it have on the depositors and borrowers? Both depositors and borrowers are likely to experience an increase in interest rates and an increase the deposit rate, and vice versa.
- The rise in rates of deposit will raise the ratio of currency to deposit and, consequently, decrease the amount of money in the economy.
- The loan rate will rise, and with it so would the EMI on the same loan.
- This could be a major blow to the vulnerable, and particularly the fixed income groups.
- What are the implications of the decision to end the accommodative policies?
- It can result in either a soft or hard landing for the economy based on the extent of the following impact:
- The market operations of the RBI had resulted in a drop of liquidity i.e. money quantity and inflation
- It will increase the rates of deposit to currency, which would in turn increasing the amount of money available through banks which can lead to "credit off take" i.e. credit supply.
- This would decrease consumer demand of goods and other services, as well as investment demand due to the expense of borrowing .
- This could further result in capital flows and the appreciation of Indian rupee. This would lead to a further decrease in the external ratio of GDP to debt, an increase in the the net investment positions of international investors in relation to GNP ratio a rise in the ratio of debt service to GDP. in reserves of foreign currency given those net foreign exchange assets.
- Reduction in Current account deficit OBICUS
- The RBI has been conducting the OBICUS on the manufacturing sector on an annual

basis since the year 2008.

- It is the acronym for Order Books, Inventories and Capacity Utilization Survey (OBICUS).
- The report provides insight into the needs for the Indian manufacturing industry.
- The survey includes 2,500 businesses in both the public and private sector.
- The study reveals the changes in actual data from orders books and inventory levels for raw materials as well as finished goods as well as capacity utilization.
- The inventory is the amount of merchandise that a business has.
- Capacity utilization is the term used to describe the production and manufacturing capabilities being used by an organization or nation.
- The survey also lists the ratio of inventories total to sales, as well as the proportion of raw materials (RM) as well as finished good (FG) inventory to sales, in percent.
- It is thought to be a crucial indicator for assessing the pace of economic growth, inflation pressures, as well as the overall business cycle.
- The research provides valuable information for the formulation of monetary policy.
- The Reserve Bank of India has begun the 58th cycle of their Order Books, Inventories and Capacity Utilisation Survey (OBICUS).
- The survey covers the reference period April- the end of June in 2022 (Q1:2022-23).

Topic 3. INDIA'S UNIQUE JOBS CRISIS

Important for subject: Economy

Unemployment India is home to "too too many" in the field of agriculture. The inability of transferring excess labour out of farms is an important policy failure by successive governments.

- Between 1993-94 and 2018-19, the agricultural part in India's workforce fell down from 61.9 percent to 41.4 percent, based on figures from the National Statistics Office's Periodic Labour Force (previously known as "employment and unemployment")
- The Kuznets Survey Curve Kuznets Curve is used to prove the idea that economic growth results in greater inequality, then later, the decrease of inequality.
- This idea first suggested by American economist Simon Kuznets.

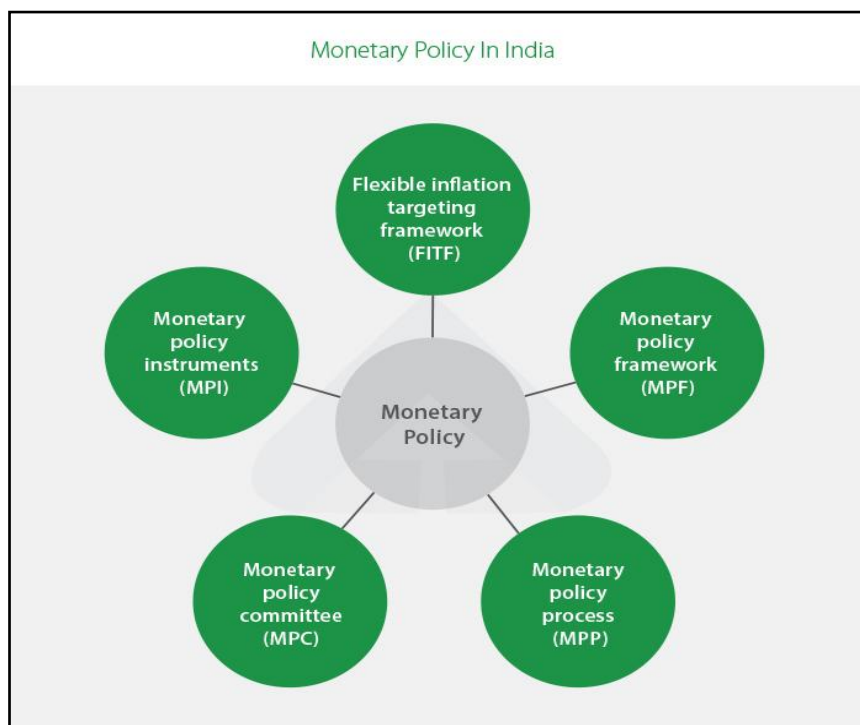
- Kuznets Process It is the transfer of labor from farms to other activities with higher value including manufacturing and advanced services
- What exactly is Periodic Labour Force Survey?
- In light of the significance of having information on the labour force in more frequent intervals
- The National Statistical Office (NSO) introduced its Periodic Labour Force Survey (PLFS) in April 2017.
- The goal of PLFS is principally twofold: to estimate the most important indicators of unemployment and employment (viz. the Worker Population Ratio, Labour Force Participation Rate, Unemployment Rate) in a relatively short period of three months in urban areas in the CWS.
- To determine the unemployment and employment indicators in both the normal status and CWS, both in urban and rural areas.
- National Statistical Office (NSO) The National Sample Survey Office (NSSO) joined together with the Central Statistical Office (CSO) to create the National Statistical Office (NSO).
- NSO was initially envisioned by the Rangarajan Commission to implement and keep standards for statistical data and coordinate the statistical operations for Central as well as State agencies as laid out through the National Statistical Commission (NSC).
- NSO is expected to be led by the Secretary (Statistics and Program Implementation).
- CSO is the central point of contact for national statistical activities and also creates statistical standards.
- NSSO is accountable for conducting large-scale surveys of samples across a variety of areas on an overall India basis.
- This is the statistics arm of the Ministry of Statistics and Programme Implementation (MoSPI).
- NSO is entrusted with the following responsibilities : Acts as the principal agency to plan the growth of the statistical system in the country.
- Lays down and enforces guidelines and norms in the area of statistical analysis, including definitions and concepts as well as the methodology

for collecting data, processing data and dissemination of the results.

- Prepares national accounts , as and releases annual estimates of the national product as well as government and private consumption expenditures as well as savings, capital formation estimations of the capital stock, and the consumption of fixed capital.
- Maintains a relationship with international statistical organisations like that of United Nations Statistical Division (UNSD) as well as The Economic and Social Commission for Asia and the Pacific (ESCAP) as well as The Statistical Institute for Asia and the Pacific (SIAP), and so on.
- Releases and releases the Index of Industrial Production (IIP) each monthly in the form of "quick estimations". It also is responsible for conducting an annual survey. Annual Survey of Industries (ASI) Conducts periodic all-India Economic Censuses as well as follow-up surveys of enterprises.
- It has conducted the very first Time Use Survey (TUS) in India from January to December 2019.

Topic 4. RBI MONETARY POLICY HIGHLIGHTS

Important for subject: Economy



The central bank increased the repo rate up to a that of pre-pandemic levels, as well as The Monetary Policy Committee is focused on the withdrawal of the accommodation.

- The RBI Governor has stated that India has experienced financial stability macroeconomic stability, resilience and stability of growth in spite of the two Black Swan events i.e. the coronavirus pandemic as well as the Ukraine-Russia war.
- Black Swan event refers to an unpredictability event with negative effects.
- The repo rate, which is the principal lending rate, was raised to 50 basis points (bps).
- A change of 1% equals 100 basis points.
- The repo rate is currently at 5.4 percent.
- The RBI's aggressive stance will also help prevent the rupee and prevent it from further depreciating.
- The inflation projection for the current fiscal year is the same with 6.7 percent.
- It indicates that retail inflation rate would be above the threshold of 6 percent through the initial three quarters in 2022-23.
- RBI is expanding the reach that the Internal Ombudsman framework by mandating Credit Information Companies (CICs) to establish an own Internal Ombudsman (IO) framework.
- The Reserve Bank - Integrated Ombudsman Scheme 2021. It incorporates the three Ombudsman programs of RBI including The Banking Ombudsman Scheme in 2006 and Ombudsman Scheme for Non-Banking Financial Companies, 2018; Ombudsman Scheme for Finance Companies in 2018, and Ombudsman Scheme for Digital Transactions, 2019. Ombudsman Scheme to facilitate Digital Transactions, 2019.
- It also covers under its ambit Non-Scheduled Primary Cooperative Banks with deposits of at least Rs50 crore.
- The Scheme is based on the "One Nation One Ombudsman approach. It makes that the RBI Ombudsman mechanism a neutral jurisdiction.
- It was created in the Reserve Bank under Section 35A of the Banking Regulation Act, 1949 and Section 45L of the Reserve Bank of India Act 1934, and section 18 under the Payment and Settlement Systems Act 2007, 2007
- It will offer a free resolution of complaints from customers involving deficiencies in the services provided by the entities that are regulated by the RBI If the issue is not addressed at the level that pleases customers or not addressed within 30 days from the

entity that is regulated.

- It is no longer mandatory for a complainant to determine under which scheme he/she is required to file an appeal to the Ombudsman.
- The Scheme has been eliminated from the authority of each ombudsman's office.
- The Centralised Receipt and Processing Centre was established within the RBI, Chandigarh for receipt and processing initial complaints via email and that are in any form.
- The Regulated Entity will not have the right to appeal in cases where an Award is issued by the ombudsman against it for not furnishing satisfactory and timely information/documents.
- Repo rate and monetary policy stances - already addressed

Topic 5. SYSTEM OF ELECTRONIC GENERATION OF A DOCUMENT

IDENTIFICATION NUMBER (DIN)

Important for subject: Economy

Background Aims Supreme Court has directed the GST Council of the Union of India to provide an advisory to States concerning the implementation of the electronically (digital) creation of the Document Identification Number (DIN) for the indirect tax administration.

- Document Identification Number (DIN) is a Document Identification Number (DIN) is an unique 20-digit identification code included in every communication sent by the government office to tax payers.
- By utilizing this number it is possible for the taxpayer to determine the authenticity of the message that the taxpayer received electronically.
- issued by the Central Board of Indirect Taxes and Customs. It is for the entire range of GST associated communication (including electronic mail) to be distributed by government offices to taxpayers as well as other interested parties.
- Structure: Importance - It can assist in the creation of an electronic directory to maintain an accurate audit trail of legitimate government communications.
- Taxpayers can determine if the information received from officials is genuine or not.
- The documents that have to be issued a document identification number are documents that require a search authorisation letter, summons, arrest memos inspection notices, and letters made during an investigation.

- Exceptions: When there are technical difficulties in generating the electronic DIN or When communication for investigation/enquiry/GST DIN Verification, etc., is to be issued on a short notice or in urgency and the authorised officer is unavailable at his regular place of duty (office).
- Taxpayers are asked to note that documents issued by government offices that do not have the requirement of a DIN (other than the ones issued in the contexts listed under the exceptions) will be deemed unconstitutional.

Topic 6. NO QUESTION OF RECESSION OR STAGFLATION IN INDIA, SAYS FM SITHARAMAN

Important for subject: Economy

As per Finance Minister, India isn't even close to an economic recession or stagflation, and the government is working to reduce retail inflation to below 7 percent.

- While most large economies have triple-digit debt to GDP ratios The central government's debt-to GDP ratio decreased to 56.29 percent from GDP for FY22, down from the updated estimate of 59.9 percent for the year before.
- In the report of the IMF the general government (centre+states) debt was 86.9 percent of its GDP for FY22.
- In comparing the state of the economy in 2013 during the taper tantrum in which India was viewed as one of the five fragile countries, FM said the NDA government has managed to keep inflation under control . Key terms: CPI: Inflation is measured by CPI.
- A broad measure to estimate price fluctuations within a set of products and services that represent consumer expenditure in the economy is known as the consumer price index.
- The National Statistical Office (NSO), Ministry of Statistics and Programme Implementation has released CPI (Rural Urban, Combined) with Basis 2012 = 100
- A measure of inflation that excludes temporary or transitory price fluctuations as in the case of certain goods like energy, food products, and food items is known as core inflation. WPI: Wholesale Price Index or WPI is a measure of the fluctuations in the price of products which are traded and sold in bulk wholesale by wholesale companies to other businesses.
- The figures are released through the Economic Advisor of the Ministry of Commerce

and Industry.

- WPI CPI vs CPI While WPI tracks the wholesale cost of items while CPI tracks the retail price of goods. CPI is the measure of the price that households pay for a variety of different services and goods.
- While the WPI is an important measure of inflation in some countries However, the RBI does not use it for purposes of policy and also for setting repo rates.
- The central bank is currently using CPI also known as retail inflation as its primary measure of inflation in determining the policy of credit and monetary monetary.
- Stagflation is a logically contradiction that is characterized by slow economic growth as well as high unemployment, or stagnation. It is the at the same time, accompanied by increasing prices (i.e. inflation).
- Stagflation may also be defined as an interval of high inflation, accompanied by an increase in Gross Domestic Product (GDP).
- Recession Recession is a slowdown or a huge reduction in economic activity.
- A dramatic drop in spending typically can lead to recession.
- This slowdown in economic activity could be present for a few months, thereby severely limiting the growth rate of an industry.
- In such a scenario the economic indicators like GDP or corporate profits, employment and more. are likely to decline.
- This causes a mess for the economy in general.
- To counter the threat To combat this threat, the economies usually respond by increasing their monetary policies and adding more money to the economy, i.e. in increasing the amount of money available.
- The ratio of debt to GDP is a measure of how likely a country will be able to pay its debt. Investors frequently take a look at the debt-to GDP metric to determine the ability of the government to finance its debt.
- Increased debt-to-GDP ratios have fueled global economic crisis.
- Fragile Five In August 2013 an analyst from Morgan Stanley coined the term "Fragile Five" to represent emerging market economies that are dependent on unstable foreign investments to fund their expansion plans.
- Five members from the Fragile Five are Turkey, Brazil, India, South Africa and Indonesia.

Topic 7. RESERVE BANK OF INDIA'S FINANCIAL INCLUSION INDEX

Important for subject: Economy



Its (RBI's) Composite Financial Inclusion Index (FIIndex) which measures the degree in financial integration across the nation increased by 56.4 by March 20, 2022.

- This is a rise from 53.9 in March 2021. which reflects growth across all sectors.
- Each year, the FI Index will be published in July each year according to the RBI announced in a press release.
- The index contains information about banks, investments and insurance, postal services and pension sector, in consultation with the government and their respective sectoral regulators.
- The index encapsulates information on the various factors of financial inclusion into one value that ranges between 100 and 0 where zero represents complete financial exclusion while 100 is a sign of complete financial inclusion.
- The FI Index comprises three broad parameters (weights that are indicated with brackets) Access (35 percent) as well as Utilization (45 percent) along with the Quality (20 percent) cent)with each composed of different dimensions that are

calculated using several indicators.

- It was built without any "base year".
- The most distinctive feature in the Index is its Quality Parameter, which measures the quality aspect of financial inclusion, as illustrated by consumer protection, financial literacy as well as inequalities and shortcomings in services
- The FI-Index responds to the accessibility to, accessibility and use of services, and the quality of services. It includes every one of the 97 measures.
- The most distinctive feature of FIIndex is its quality parameter that measures the quality aspects of financial inclusion, which is reflected by the level of financial literacy, consumer protection and inequalities as well as the lack of services.
- The RBI had conceptualized the FI-Index as a broad index that includes information about banks, investments and insurance, postal services and pension sector after concert with the government as well as the the respective sectoral regulators.
- The FI-Index is released annually in June of each year.

Topic 8. CONCESSIONAL TAX REGIME

Important for subject: Economy

The government is aiming to create an unconstitutional tax system with no exemptions or deductions.

- Information in the Union Budget of 2020-21, there was a fresh tax system.
- Taxpayers were given the choice to select between the previous regime and the new regime.
- The idea behind this move was to offer significant relief to individuals who pay taxes and also to make it easier for taxpayers to comply with the income tax law.
- **Results:** individuals who have completed their student loans and mortgages are now willing to change into the tax structure because they don't have any exemptions to take advantage of.
- A similar tax system applicable to corporations was enacted in September of 2019 with a significant cutting rates and eliminating exemptions.
- The tax base for corporations: companies that are already in operation to 22 percent, from 30% for newly formed manufacturing firms that were formed on or after October 1 January, 2019 and establishing operations prior to April 31, 2024 to 15

percent from 25 percent.

- Companies that opt for the lower tax rates need to forfeit any exemptions or incentives.
- Concept Old Tax Regime It's a tax system that includes a variety of exclusions, deductions.
- The concessional (new) tax regime assesses who wish to avoid deductions or exemptions such as the ones under section 80C, 80D and house rental allowance and leave allowance can decide to pay taxes on their earnings at a lower rate.
- The taxpayer must give up certain deductions. This includes a the standard deduction of Rs. 500,000, deductions under section 80C of 1.50 lakh, and interest on property that is self-occupied of 2 lakh as deductions available by the majority of taxpayers.
- Tax rates in these systems Preliminary fact corporation tax is a tax directly applied to a business's net profits or income from its business.
- Corporation tax is due to both private and public companies that are registered within India pursuant to the Companies Act 1956.
- The tax on corporations is that is imposed on the net earnings of the company, while the income tax is one kind of tax that is imposed on the income of an individual like salary and wages.
- **Tax concession:** A decrease from the state government on the quantity of taxes an individual group of individuals or company must pay, or a change to the tax system to benefit these people.

Topic 9. DEVELOPMENT OF ENTERPRISE AND SERVICE HUBS (DESH) BILL

Important for subject: Economy

The budget for the Union Budget 2022 was proposed to replace the existing legislation governing Special Economic Zones (SEZs) with a new statute that will allow states to become partners in the 'Development of Enterprise and Service Hubs' (DESH).

- Development of Enterprise and Service Hubs (DESH) Bill It suggested the creation of development hubs that focus is not just on exports, but rather to provide services to local markets, increasing economic activity, creating employment as well as integrating various industrial hubs.
- It will incorporate existing industrial estates, such as food and textile parks, making

them into development hubs.

- The DESH Bill classifies two types of hubs for development: Enterprise and service hubs.
- Enterprise hubs will be built on land and have areas requirements and will be permitted for both manufacturing and service activities.
- Services hubs require built-up areas and only permitted for services-related activities.
- Presently, only specific services like IT and ITeS are permitted in specific economic zones.
- The hubs, which are expected to form under the state regional boards can be set up by the Centre states, or by states, or jointly with both or any service supplier.
- It is aimed at providing specific incentives, such as Inclusion of a zero-rating policy for IGST (integrated taxes on goods and services) on domestic purchases from a unit within an SEZ; continuation of tax benefits for indirect taxes for the developers of these zones, and permitting depreciation on the selling used capital goods that are cleared to tariff zones in the domestic market.
- The extension of corporation tax rates to 15% without exemptions for units operating with a licence in these hubs for development.
- States may also offer assistance to the zones in order to increase production and create jobs.
- The duty on customs would be paid for the inputs that are used, not on the high-priced final product.
- **Why?**
- SEZs are losing importance due to the imposition of a minimum alternate tax and the introduction of sunset clauses to prevent the removal of incentives to tax payers.
- SEZs' units used to receive a 100% income tax exemption for export earnings for the first five years. 50% over the next five years, and 50 percent of extra export earnings that were reinvested into the next five years.
- The Budget 2016-17 the government announced that tax-free income for new SEZ models would become offered only to units that begin operations before March 31st 2020.
- Exports out of the SEZs have dropped by \$102.3 billion during FY21 down from \$112.3 billion for FY20.. They make up less than 20 percent of exports in the present.

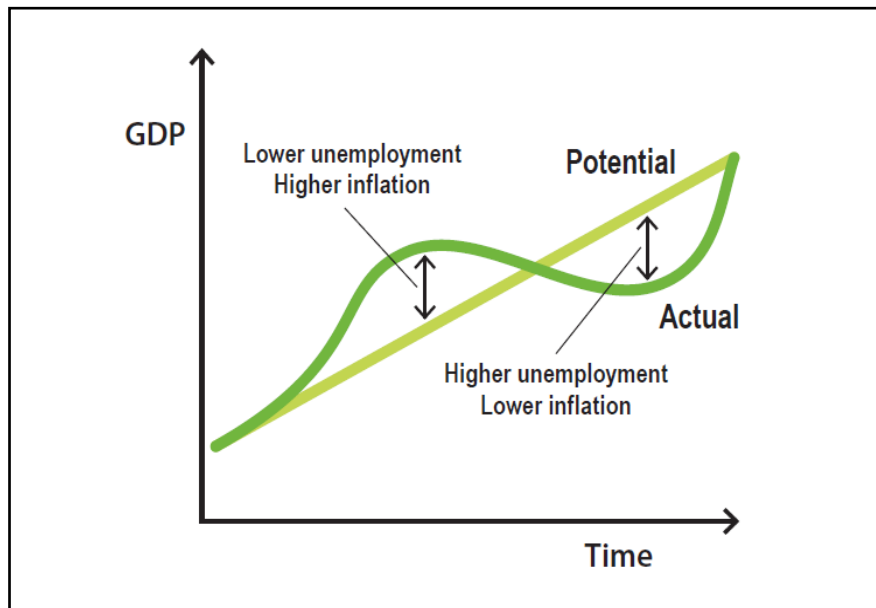
- **Not in line with the WTO rules Unconformity with WTO rules** - A WTO Panel in the year 2019 concluded that incentives provided to entities situated in SEZs were not in accordance with the agreement on subsidy.
- **Special Economic Zone** Special Economic Zone: A SEZ is a part of the country which is usually duty-free. It also has its own commercial and business laws, primarily to promote investment and create jobs.
- First in Asia, an EPZ (Export Processing Zones) was established in the year 1965 in Kandla, Gujarat.
- Although these EPZs were similar in structure as SEZs in the past, government decided to set up SEZs in the year 2001 under Foreign Trade Policy to redress the bureaucratic and infrastructural issues which were deemed to have affected the effectiveness of EPZs.
- The Special Economic Zones Act was approved in 2005.
- The Act was enacted together in conjunction with SEZ Rules in 2006.
- **Objectives of the SEZ Act:**
 1. In order to create economic activity.
 2. To increase exports of services and goods.
 3. To generate employment.
 4. In order to increase foreign and domestic investment.
 5. To develop infrastructure facilities.
- India's SEZs were designed in a way that was similar to China's model of success.
- Presently, 379 SEZs have been notifying, of which 265 have been operational. There are eight SEZs that are operational in India in the present time, which include -the cities of Santa Cruz (Maharashtra), Cochin (Kerala), Kandla and Surat (Gujarat), Chennai (Tamil Nadu), Visakhapatnam (Andhra Pradesh), Falta (West Bengal) and Noida (Uttar Pradesh).
- **The majority of SEZs are in five states:** Tamil Nadu, Telangana, Karnataka, Andhra Pradesh and Maharashtra.
- The Board of Approval is the Apex body that is headed by the Secretary of the Department of Commerce (Ministry of Commerce and Industry).
- The most important Incentives and Facilities Available to SEZ The benefits include duty-free imports or purchase of products for the purpose of developing managing and

operating SEZ units.

- 100% exemption from taxation on export earnings for SEZ units in accordance with the Income Tax Act for first 5 years, and 50 percent for the next five years following and then 50 percent of the ploughed-back export earnings for the next five year (Sunset Section for Units) will start in 2020).
- Units are exempt by Minimum Alternative Tax (MAT).
- They were exempt by Central Sales Tax, Service Tax and State sales tax.
- They are now included in GST and SEZ supplies are exempt from taxation in GST. IGST Act, 2017.
- Single window clearance required for Central and State-level approvals.
- There is no requirement to obtain a permit for import. In the manufacturing industry with the exception of a few sectors all FDI in the country is permissible.
- Profits made can be returned to the country at any time without requirement for balancing dividends.
- There is no need to have separate documentation for customs documents and export-import policies.
- A lot of SEZs have plots with developed areas and space that is ready to use.
- Status as on June 30th, 2022 the government has issued official approvals for the 425 SEZ developers, of which 268 are operational.
- These zones have attracted an amount of 6.5 lakh crore in investments and employ around 27 lakh people.
- In the period April-June of this fiscal year the exports of these zones grew by 32 percent.

Topic 10. MONETARY POLICY TRENDS

Important for subject: Economy



In the event that the institutional framework at the global and national levels is altered, the duties of monetary policy change too.

- Information Description: The Reserve Bank of India was established as a central authority for monetary policy in the year 1935.
- Like other central banks in emerging economies, RBI has been playing both a development and role in regulating.
- In its development role, RBI focused on creating an adequate financial infrastructure within the country.
- The change in India's monetary policy as outlined by the RBI is a reflection of the evolving concerns in the past seven years.
- The policy of the government's period. objectives and instruments . Monetary-Fiscal conflict The first three decades following Independence (1947-1970s) Application of five year plans Non-inflationary debt financing and Judicious credit creation to boost productivity and invest.
- The function that the Reserve Bank was to abide by the greater issues for the state.
- There was no conflict until inflation was at a moderate level.
- In the 1950s the average annual increase of wholesale prices was 1.8 percent.
- In the 1960s it was 6.2 percent.
- In the 1970s, double-digit and the fact that the money supply needed to be slowed

down- which resulted in conflict with the ease of credit creation to fund the deficit.

- 1980s Implementation of five-year plans Chakravarty Committee- look into the operation of the monetary system presented its report in 1985 on the regulation of money supply, and in line with real growth, and an acceptable rate of inflation.
- The need for a close coordination between fiscal and monetary policy. The 1980s saw more deficits in fiscal policy and more growth in the money supply that led to the recession of 1991.
- 1990s Economy Reforms LPG Price stability and growth have been the primary goals of the monetary policy.
- RBI changed to a multi indicator strategy to meet its goals.
- Ad-hoc Treasury bills were not issued with the automated monetisation of the fiscal deficit ending the market-determined interest rate. elimination of the administrated structure of interest rate allowed the interest rate to be recognized as an instrument of policy. Government securities were able to be traded, resulting in the rise of open market operations as a means of credit control.
- Interventions by RBI in the forex market as India has shifted to a market determined exchange rate. Protecting the value of exchange for the rupee with intervention both in the international and domestic market.
- The maintenance of the effective exchange rate in relation to the fluctuation of inflation rates. capital outflows and capital inflows stability was recognized as an important goal of monetary policy.
- RBI had two roles: the authority for monetary policy as a regulator for banks and other non-banking institutions.
- After 2015 NITI Ayog and Indicative Planning Flexible inflation targeting, with growth as a not less important goal
- New monetary policy guidelines will require the RBI to keep the inflation rate of 4 percent, and a variance of +2 percent or less.

Topic 11. START-UP INDIA SEED FUND SCHEME

Important for subject: Economy



The Scheme was launched at the "Prarambh, the StartupIndia International Summit in Mumbai' that commemorated the five-year anniversary of the Startup India initiative.

- **About the Startup India Seed Fund Scheme (SISFS):**
- **Goal:** To offer financial support to startups to help them prove their concepts design, prototyping, product trials as well as market entry and commercialization.
- The initiative was launched by the Department for Promoting Industry and Intern Trade (DPIIT) which has an investment of approximately Rs. 945 Crore.
- Some eligibility requirements An established company, as acknowledged by DPIIT and incorporated no longer than two years at the time of the application.
- Start ups are not eligible for more than the sum of Rs. 10 lakh in monetary assistance through any Central and/or State Government scheme.
- **Highlights:** It will help around 3,600 entrepreneurs with 300 incubators over the next 4 years.
- The Experts Advisory Committee (EAC) formed by DPIIT is responsible for the overall implementation and oversight and monitoring of the Scheme.
- Grants of up to Rs. five crores will be given to eligible incubators chosen from the panel.
- The incubators chosen will offer grants up to the amount of Rs. 20 lakh to validate proof of concept, prototype design, or product testing to start-ups.

- Investments of up to Rs. 50 lakh can be made available to start-ups to help them enter the market and commercialization or growing through debt-linked or convertible instruments.
- **Expected Benefit:** It can help to create a strong startup community in the areas of Tier 2, 3 and 4. This is because the towns that are smaller in India are usually not given the proper funds.
- The MAARG Portal it is by Startup India is a one place mentorship platform that facilitates the mentoring of startups across a variety of industries, functions, phases geographical locations, and backgrounds.
- Startups can meet with industry experts, academicians entrepreneurs who have been successful, seasoned investors, and others to get personalized guidance on growth strategies, get clarity, and receive practical guidance.
- Startup India Startup India was launched in 2016 as a appeal to entrepreneurs, innovators and thinkers from the country to lead the way in bringing about sustainable growth for India and creating large-scale jobs.
- The portal was home to more than 65,000 startups that had registered.
- Of these, 100 achieved the status of a unicorn recently which brings the total to 90.
- India is ranked third in global startups ecosystems.
- India's biggest online entrepreneurship platform lets startups connect and access tools for free resources and join in on contests and other programs.

Topic 12. BANKING LICENCE

Important for subject: Economy

The Reserve Bank of India has removed the bank licence for Rupee Cooperative Bank and has directed that the Registrar of Societies Cooperative to liquidate the bank.

- **What caused RBI remove the license for Rupee Cooperative Bank?**
- The bank doesn't have sufficient capital and earnings potential as according to Section 11(1), Section 22 (3) (d) and Section 56 of the Banking Regulation Act, 1949.
- Section 11 addresses rules regarding the minimum amount of reserves and capital.
- Section 22 is about the licensing of banks.
- Section 56 concerns the application to the Act to cooperatives, Important for being subject to changes

- The bank is not able to comply with other requirements that are part of the Banking Regulation Act, 1949.
- The existence of the bank's operations is detrimental to the interest of its customers who are its depositors.
- It will be unable to pay its depositors in full, given its current financial state.
- Infringes on the public interests if permitted to conduct business.
- **What happens to deposits of the Rupee co-operative bank?**
- If you have a deposit of less than Rs 5 lakh in the bank would receive the entire amount via an organization called the Deposit Insurance and Credit Guarantee Corporation (DICGC).
- If a depositor has more than 5 lakh cannot receive their funds after 5 lakh.
- **What is a bank licence?**
- The RBI issues the license under the Banking Regulation Act of 1949 for banking activities including accepting deposits and lending.
- Parameters the 1949 Act concentrates on capital sufficiency and the protection of the public interest prior to the license is granted.
- Capital Adequacy Rate (CAR) is an estimate of the bank's capital to its risk-weighted credit exposure.
- Ratio of Loan Ratio (LDR): deposit Ratio (LDR) is the ratio between a bank's overall loan to deposits total in the same timeframe.
- Only a company who has been granted the banking licence is allowed to use the word "bank" as its name when conducting business.
- The RBI examines banks each year, and may take steps if it notices the increase of bad loans or suspicious activity on their books.
- If, for instance, the bank is not able to raise enough capital to pay for its risks and also pay its depositors, the license can be terminated through the RBI.
- **Other options than cancellation:** Any banking activity, including withdrawals, are able to be stopped. Board of directors could be overruled by an administrator appointed to revive the bank, which includes the merger of it with another bank that is financially stable and filing criminal cases against employees, directors and directors who are in default and their property.
- **Cooperative Banking** A co-operative bank is a financial institution that is owned by

its members, who are the bank's owners as well as the customers of their banks.

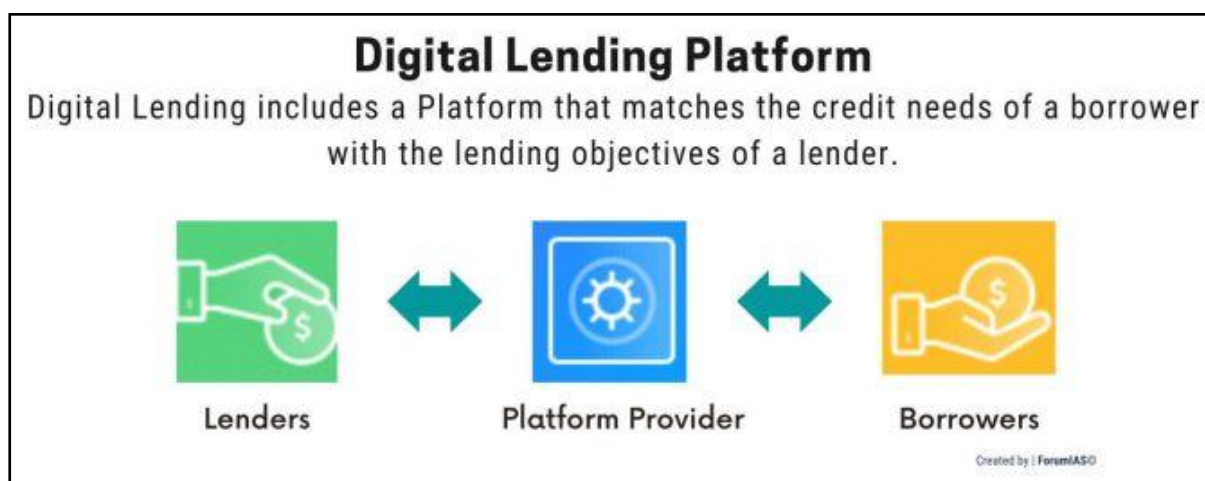
- The co-operative bank located in India can be registered in accordance with the States Cooperative Societies Act.
- The Co-operative banks are monitored through the Reserve Bank of India (RBI) and are subject to the Banking Regulations Act 1949 Banking Laws (Co-operative Societies) Act, 1955.
- The credit system for rural co-operatives in India is principally designed to guarantee the flow of credit for the agricultural sector.
- It includes both long-term and short-term co-operative credit arrangements.
- The short-term co-operative credit structure works using a three-tier structure - Primary Agricultural Credit Societies (PACS) at the village level. They aren't subject to the Banking Regulation Act, 1949 and are therefore not subject to the supervision of the Reserve Bank of India, Central Cooperative Banks (CCBs) at the district level , and State Cooperative Banks (StCBs) at the state level.
- StCBs/DCCBs have been registered under the rules of State Cooperative Societies Act of the State concerned. They are controlled through the Reserve Bank.
- The power has been delegated over to National Bank for Agricultural and Rural Development (NABARD) to oversee the inspection of State as well as Central Cooperative Banks.
- Primary Cooperative Banks (PCBs) are also called Urban Cooperative Banks (UCBs) are able to meet the financial requirements of customers living who reside in urban and semi-urban regions.
- They are registered as cooperative societies in accordance with the rules of either the State Cooperative Societies Act of the State concerned or the Multi State Cooperative Societies Act 2002, if the region that the bank operates in extends beyond the borders of one state.
- There is a duality of control over these banks, with the banking-related functions being controlled through the Reserve Bank of India and management-related functions being controlled by the respective State Governments or Central Government.
- Deposit Insurance of Cooperative Banks the co-operatives that are eligible banks, as defined by the section 2. (g) (g) of the Deposit Insurance Act, 1961 are protected by

Deposit Insurance Scheme. Deposit Insurance Scheme.

- The State-owned, Central as well as Primary cooperative banks operating in the States and Union Territories, which have amended their Co-operative Societies Act as required under the DICGC Act, 1961, giving the RBI to require the Registrar Co-operative Societies of the respective States/Union Territories in order to shut down co-operative banks, or replace its management committee in addition to requiring that the Registrar to initiate any actions for the winding up, amalgamation, or rehabilitation of a cooperative bank that has not received prior approval by the RBI they are considered eligible banks.
- Presently, all banks that are Co-operative are covered under the Scheme.
- The Union Territories of Lakshadweep and Dadra and Nagar Haveli do not have Co-operative Banks.

Topic 13. DIGITAL LENDING

Important for subject: Economy



Reserve Bank of India (RBI) has issued guidelines to organizations involved in lending via digital channels.

- The guidelines are applicable to the RBI's controlled entities (REs) as well as the LSPs that they have contracted to offer credit facilitation.
- In the case of the second category, digital lenders, the relevant regulator can formulate rules regarding digital lending, based upon suggestions of the group.
- For companies that fall into the third category the working group has suggested specific legislative and institutional changes to be considered by the government to limit illegal lending.

- All digital loans should be repaid and disbursed through the bank accounts of those regulated by law only, with no pass-through by the lending service provider (LSPs) as well as other third-party lenders.
- The LSPs' fees as part of the credit intermediation process will be paid directly by RE and not by the RE rather than by the creditor.
- A key fact statement that is standardised (KFS) is required to be given to the borrower prior the signing of the loan contract, which includes all-inclusive charges for digital loan in the format of an annual percentage rates (APR).
- Automated increases in credit limit without the express consent of the borrowers is banned.
- The loan contract must allow for a cooling off or look-up time for the loan to be terminated without penalties.
- All lending services that use digital technology, such as the use of short-term credit or deferred payments should be reported to credit reporting agencies by REs.
- **Digital Lending:** It is the process of lending via mobile or web-based platforms that make use of technology to authenticate and credit evaluation.
- Banks have created their own digital lending platforms to compete the market of digital lending through the use of existing capabilities in traditional lending.
- Digital lenders are divided as three distinct categories: entities that are regulated by the RBI and authorized to conduct lending transactions and entities that are authorized to conduct lending in accordance with other statutory or regulatory regulations, but not controlled by the RBI or RBI, and those lending outside of the scope of any regulatory or statutory provisions.
- **Actions taken by RBI:** Non-Banking Financial Companies (NBFCs) and banks are required to provide the names of the online platforms they work with.
- RBI has also set out that online lending platforms that serve for the benefit of Banks and NBFCs must disclose names of Bank(s) as well as the NBFC(s) in advance to customers.
- The central bank has also asked lending applications to send a sanction note to the borrower, on the letterhead of the banker NBFC involved prior to the signing of the loan agreement.
- Public lending is a legitimate activity that can be carried out by banks, NBFCs that are

registered with the RBI as well as other entities that are regulated by state government pursuant to statutory regulations.

- The RBI created a Working Group on lending digitally, including loans made through online platforms and smart phones in January 2021.
- The panel was established amid concerns over consumer protection and business conduct issues that arose from the increase in lending through digital platforms.
- The most important suggestion is that digital lending applications should be important to be subject to a verification procedure by a nodal organization to be established in collaboration with the relevant other stakeholders.
- To establish to establish a Self-Regulatory Organisation (SRO) covering all the players in the lending ecosystem for digital loans.
- The sending of commercial messages for digital loans is to be governed by a specific code of conduct that will be put into place in an proposed SRO.
- The establishment of a "negative list that includes lending services providers is proposed by an SRO is a possibility.
- Loans should be deposited directly into the bank accounts of the borrower.
- All data that is to be saved in servers in India.
- Algorithmic functions that are used in digital lending be documented must ensure transparency.

Topic 14. WHAT RBI'S SURVEYS TELL ABOUT INDIA'S ECONOMY?

Important for subject: Economy

The RBI released its most recent monetarist policy review and seven surveys to help to determine the state of the economy.

- **Trade Survey:**
- Increased trade deficit - Impact of the growing trade deficit is among the primary reasons behind the depreciation of the Indian rupee.
- The current Account Deficit (CAD) is predicted to increase from 1.2 percent of the GDP in 2021-22 and reach 4 percent (of that total GDP) in 2022-23.
- Consumer Confidence Survey (CCS):
- The CCS surveys people in 19 cities about their current views and one-year-ahead expectations regarding the overall economic environment and employment outlook,

the overall prices, and their own budget and income.

- In based on responses from the respondents, the RBI is able to come up with two indexes:
- The Current Situation Index (CSI) and the Future Expectations Index (FEI).
- A score below 100 signifies that the person is pessimistic, while an index higher than 100 suggests optimism.
- The CSI has seen a recovery after a record lowest in the month of July in 2021.
- However, the consumer's confidence is in the negative zone.
- The FEI is in the positive zone however, it is still below levels of pre-pandemic. Inflation Expectations Survey (IES) It tracks the expectations of people about inflation.
- It shows that the household' inflation expectations in the current time frame has decreased, along with their one-year and three-month ahead of median inflation expectations.
- Order Books as well as inventories and Capacity Utilisation Survey -OBICUS Survey aims to present demand and supply conditions in the manufacturing industry in India on the basis of quarterly.
- A low capacity Utilization indicates that manufacturing companies are able to meet demands without having to increase production.
- This in itself could result in negative consequences for employment creation as well as private sector investment in the economy.
- According to the latest data, the CU is higher than the pre-pandemic levels, which suggests that India's demand for goods and services is growing gradually.
- Industrial Outlook Survey (IOS) It is a quantitative assessment of the current business climate of Indian manufacturing firms.
- It is clear that companies were confident (above the 100-level) in Q1, although not in the same way as they had been in the past.
- Services and Infrastructure Outlook Survey (SIOS) It's an analysis of qualitative aspects of how Indian businesses in the service and infrastructure industries consider the present conditions and the future outlook.
- It shows that businesses in the service sector are much more optimistic than companies in the infrastructure industry.

- Bank Lending Survey (BLS) It's a quantitative assessment and expectations of the major scheduled commercial banks (SCBs) on criteria for credit, including demand for loans and the terms and conditions of loans for the major economic sectors.
- It also shows that bankers' assessment of the loan demand was positive across the majority of sectors.
- of Professional Forecasters (SPF) of Professional Forecasters (SPF) It's a survey conducted by 43 professional forecasters (outside the RBI) regarding key macroeconomic indicators like the rate of growth in GDP and inflation rate in the current financial year and the coming financial year.
- The real GDP of India is projected to increase by 7.1 percent in 2022-23, and 6.3 percent in 2023-24.

Topic 15. TAX TO GDP RATIO

Important for subject: Economy

India's tax-to-GDP ratio is much higher than what it claims and it's the right time to improve the quality of spending.

- Fiscal deficit, taxes and debt are all interconnected A lower tax revenue implies a greater fiscal deficit for the same amount of spending, and a greater deficit means more debt.
- All three factors are a factor in the rate of growth or inflation.
- The ratio of GDP to tax for India is between 10 and 11 percent of GDP.
- It is at or near this level over the past 20 years.
- In comparison to other countries, India's tax per GDP is less (Central Tax to GDP Ratio).
- But according to World Revenue Longitudinal Data for 1990 to 2019: G20 countries Ratio of Taxes to GDP (at every levels in the government) India 16.7 China 15.9 Mexico 14.1 Indonesia 11 Saudi Arabia 5.9
- Additionally, the tax-GDP ratio is adjusted to reflect PPP per capita income Tax gap - the gap between what is actually and the actual, adjusted for the levels of income.
- The average global taxes are -1.3 percent India has a tax gap of +1.2 per cent over the period between 2011 and 2019.
- Therefore, India's tax-GDP ratio is 2.5 percentage points higher than the average

economy.

- But, there's no evidence to suggest that a higher tax/GDP ratio boosts growth.
- One theory suggests that higher tax rates will reduce the deficit in the fiscal system and improve growth.
- Triple whammy - if tax rates are reduced, revenues would decrease and the deficit in fiscal inequality would grow.
- According to a different idea (Laffer curve) higher corporate tax rates hinder investments, cause tax evasion as well as slowed growth.
- The Experience of India In September 2019, the corporate tax rate was reduced by about 10 percent.
- For the three months between April and June 2022, tax revenues for corporations on a yearly basis were up by 30 percent.
- If we take 2019-20 as the base the tax revenues of corporations have been up by 66 percent GDP, and GDP increased by 33 percent the average tax buoyancy that is 2.0 in three consecutive years.
- The tax-to-GDP ratio in the period 2022-23 will be higher than 18 per cent in India which is similar in comparison to Japan as well as the US.
- The Indian economy needs to move away from the simplistic notions that the tax-GDP ratio is too low in comparison to expenditures and the quality of spending.
- Laffer Curve was created by the economist Arthur Laffer in 1979.
- The Laffer Curve is founded on the notion that lower tax rates can increase economic growth because it leads to increased spending, placing money in the pockets of taxpayers.
- The Laffer curve illustrates the connection between tax rates and the consequent levels of government revenue.
- The basic principle behind this Laffer curve is that tax revenues are raised when the government raises taxes.
- In contrast, at extremely high tax rates and tax evasion, when tax-evasion practices begin, and there is a lack of motivation to work, and so that if tax rates are reduced, they can increase the revenue.
- Tax-to GDP Ratio This is a measure of a country's tax revenues in relation to its economy, as measured by GDP (GDP).

- The ratio of tax-to-GDP is calculated by dividing the revenue from taxation for a particular time period with the GDP.
- This ratio is a valuable analysis of a country's tax revenues as it provides potential taxation rates in relation to economy.
- It also gives a clear view of the general direction of the tax policies of a country as well as international comparisons of tax revenue of various countries.
- Countries with higher incomes typically have higher ratios of GDP to tax than those in developing countries.
- A tax-to-GDP ratio of 15% or higher percent or more guarantees economic growth, and consequently the reduction of poverty in the long run according to the World Bank.

Topic 16. FOOD INFLATION

Important for subject: Economy

The Food and Agricultural organization's Food Price Index (FPI) averaged 140.9 points in July, 8.6% down from the previous month's reading and registering the highest monthly decline since October 2008.

- In the months of March through July between March and July, the FPI has slowed by 11.8 percent.
- This is due to cereals and vegetable oils which have seen their prices fall further.
- Factors that influence the cost of food There were four main supply-side shocks that triggered the massive global food inflation especially in October, 2020: Weather Dry spells in Ukraine (2020-21) as well as South America (2021-22) impacted the availability of soybeans and sunflower.
- The heat wave of March to April 2022 destroyed India's wheat crop.
- Examples of a pandemic: the oil palm plants of Malaysia were hampered by labourers who migrated who came from Indonesia as well as Bangladesh.
- The war between Russia and Ukraine caused disruptions in supply from both countries.
- In the year 2019-20 (a non-drought, non-war year) both countries represented 28.5 percent of the world's wheat production, 18.8 percent of the corn crop, 34.4 percentage of barley as well as 78.1 percent from sunflower exports.

- Export control concerns about shortages in the home country trigger such actions.
- Example: palm oil produced by Indonesia and wheat from India in the months of March to May 2022.
- The reasons for the decline in food prices global factors: Resumption of exports out of Ukraine through in the Black Sea.
- The U.N.-backed agreement to unblock the use from this Black Sea trade route also allows for free shipping of Russian fertilisers and food items.
- Indonesia have lifted their prohibition on the export of palm oil.
- Brazil, the US, Brazil, Argentina and Paraguay are all set to harvest bumper soybean harvests.
- Domestically, above normal rainfall in all of the South Peninsula, Central and Northwest India has boosted acreages for most crops during the season. (monsoon) time.
- The benefits of recharge to groundwater could also be transferred to the crop of rabi.
- A higher buffer stock is a benefit to the government.
- International exportable surpluses, mostly coming from Canada and Australia also are greater than last year's surplus by around 0.5 millimetric tonnes for both pulses.
- Imports are duty-free for arhar masur, urad, and arhar till March 31.
- A good monsoon will also provide more fodder as well as the availability of water to animals which would further reduce costs for livestock and pressures to inflation on eggs, milk and meat.

Topic 17. GROSS STATE DOMESTIC PRODUCT

Important the subject: Economy

After the shock of the Covid-19 pandemic the economies that are part of 19 States and Union Territories exceeded their pre-covid levels, according to the Ministry of Statistics and Programme Implementation.

- In 2021-22 the growth of India's GDP was 8.7 percent, against the 6.6 percent contraction in the period 2020-21.
- Its Gross State Domestic Product (GSDP) of the 19 states and UTs decreased or experienced a minimal increase in 2020-21, while their economies recovered and even exceeded the pre-Covid (2019-20) levels by 2021-22. Kerala along with Uttar Pradesh

are the only two states with GSDPs that continue to be below pre-Covid levels.

- State growth rate for 2021-22. Highest Growth Andhra Pradesh - 11.43 per percent the lowest growth Puducherry 3.31 percent.
- It is the lowest growth of large state Uttar Pradesh- 4.24 per cent.
- Double-digit growth Rajasthan (11.04 percent), Bihar (10.98 per percent), Telangana (10.88), Delhi (10.23 per cent), Odisha (10.19 per percent) as well as Madhya Pradesh (10.12 per cent) including Andhra Pradesh.
- Growth causes The Base Effect is a reference to the effect on rates of growth (i.e. the growth rate of the previous year) over the rise in growth rate for the present year (i.e. the present growth).
- Recovery from pandemic
- The Ministry of Statistics and Programme Implementation is the one who compiles GSDP figures that are provided through the Directorate of Economics & Statistics of the government agencies of the state.
- The compilation of GSDP is comparable to the process of calculating GDP for the whole economy i.e. measuring in terms of money, or the value of all goods and services created within the geographic boundaries that is the boundaries of the State. GSDP is the sum of the value that is added by various economic sectors (Agriculture and Industry & Services) which are created within the boundaries of the state that is calculated with no duplication in a calendar year.
- In the Gross State Domestic Product (GSDP) is consumption of fixed capitals (CFC) is subtracted to determine the Net State Domestic Product i.e. the NSDP is GSDP divided by CFC Consumption Fixed Capital (CFC) is the amount of fixed capital that is used in the process of production.
- It is determined on the basis of time span that the asset is fixed. GSD at Constant Price and Current Price GSDP that is estimated for an accounting period is measured at the current price.
- This is referred to as GSDP at the current price.
- It is essential to get rid of the effects of inflation to evaluate the output over time.
- This is accomplished by calculating the GSDP for a certain price in the base year.
- The GSDP that is derived is known in the form of GSDP with constant price.
- This is a measure of the growth rate that is real for the economy.

- GSDP at Factor cost-sector wise GVA estimates is also known by the name of GSDP at Cost Factor.
- There are no taxes or subsidies considered when calculating an individual GVA.
- Basic Price GSDP - GSDP production tax + factor cost Production Subsidies = at the Basic Price Market Price GSDP at the Basic Price and Product Tax Product Subsidies = Market Price.
- To calculate the rate for Fiscal Deficit to Total GSDP, market Price will be the numerator.
- The importance of the State Domestic Product (SDP) The State Domestic Product (SDP) or State Income is the primary indicator of the economic development of a state.
- These estimations of the economy over a time, show the magnitude and direction of variations in the rates of economic growth.
- It is the State's Domestic Product that (SDP) is divided into three broad sectors including Primary sector Secondary sector, Tertiary sector and Primary sector.
- The data is collected economic according to the guidelines laid out by the Central Statistics Office (CSO) and then provided to MOSPI.
- Ministry of Statistics and Programme Implementation (MOSPI).
- It provides information on the total impact of the various programs for development implemented by the government and aids in cross-state comparison.
- It is the Finance Department prepares a macroeconomic framework statement and fiscal policy declaration every year, based on the SDP estimates to present to the Legislature at Budget Sessions as part of Fiscal Responsibility and Budget Management (FRBM) Act of 2005.
- The states with the highest and lowest incomes in India in terms of GDP Maharashtra is the most GSDP-adequate state of the 33 Indian States and Union Territories.
- In the fiscal year 2018, Maharashtra makes up 13.88 percent of the country's economy, at current prices.
- Maharashtra is closely followed by Tamil Nadu (8.59%) and the state with the highest population Uttar Pradesh (8.35%).
- The other states that rank in the top five include Gujarat (7.92 percent) along with Karnataka (7.87 percent).

- India's biggest state Rajasthan is ranked 7th just after West Bengal, poorest state Bihar is at 14 and the capital Delhi is on the 12th spot.
 - The top five states contribute 46.6 percent of India's economy. Five states in South India together account for close to 30 percent.
 - Eight states in North-East India share 2.8%.
 - Andaman & Nicobar Islands has the lowest GSDP on the 33 states and UTs. Followed by Mizoram, Arunachal Pradesh, Nagaland, and Manipur.
 - Rang I State/Union Territories I Nominal GDP Rs. lakh crore = INR trillions
1. Maharashtra Rs28.18 lakh crore (US\$400 billion) 2019-20
 2. Tamil Nadu Rs19.43 lakh crore (US\$270 billion) 2020-21
 3. Uttar Pradesh Rs17.05 lakh crore (US\$240 billion) 2020-21
 4. Karnataka Rs16.65 lakh crore (US\$230 billion) 2020-21
 5. Gujarat Rs16.49 lakh crore (US\$230 billion) 2019-20
 6. West Bengal Rs12.54 lakh crore (US\$180 billion) 2019-20
 7. Telangana Rs9.78 lakh crore (US\$140 billion) 2020-21
 8. Andhra Pradesh Rs9.71 lakh crore (US\$140 billion) 2019-20
 9. Rajasthan Rs9.58 lakh crore (US\$130 billion) 2020-21
 10. Madhya Pradesh Rs9.17 lakh crore (US\$130 billion) 2020-21
 11. Kerala Rs8.54 lakh crore (US\$120 billion) 2019-20
 12. Delhi Rs7.98 lakh crore (US\$110 billion) 2020-21
 13. Haryana Rs7.65 lakh crore (US\$110 billion) 2020-21
 14. Bihar Rs6.12 lakh crore (US\$86 billion) 2019-20
 15. Punjab Rs5.41 lakh crore (US\$76 billion) 2020-21
 16. Odisha Rs5.09 lakh crore (US\$71 billion) 2020-21
 17. Assam Rs3.51 lakh crore (US\$49 billion) 2019-20
 18. Chhattisgarh Rs3.50 lakh crore (US\$49 billion) 2020-21
 19. Jharkhand Rs3.29 lakh crore (US\$46 billion) 2019-20
 20. Uttarakhand Rs2.53 lakh crore (US\$35 billion) 2019-20
 21. Jammu and Kashmir Rs1.76 lakh crore (US\$25 billion) 2020-21
 22. Himachal Pradesh Rs1.56 lakh crore (US\$22 billion) 2020-21
 23. Goa Rs0.815 lakh crore (US\$11 billion) 2020-21
 24. Tripura Rs0.597 lakh crore (US\$8.4 billion) 2020-21
 25. Chandigarh Rs0.421 lakh crore (US\$5.9 billion) 2018-19

26. Puducherry Rs0.380 lakh crore (US\$5.3 billion) 2019-20
27. Meghalaya Rs0.348 lakh crore (US\$4.9 billion) 2020-21
28. Sikkim Rs0.325 lakh crore (US\$4.6 billion) 2019-20
29. Nagaland Rs0.319 lakh crore (US\$4.5 billion) 2019-20
30. Manipur Rs0.318 lakh crore (US\$4.5 billion) 2019-20
31. Arunachal Pradesh Rs0.273 lakh crore (US\$3.8 billion) 2019-20
32. Mizoram Rs0.265 lakh crore (US\$3.7 billion) 2019-20
33. Andaman and Nicobar Islands Rs0.088 lakh crore (US\$1.2 billion) 2018-19

Topic 18. US JOBS-RECESSION PARADOX

Important for subject: Economy

There is no precedent in history for a downturn in the economy to create 528,000 jobs within one month just like it was the case in July.

- US economic situation did during July
- A recession is usually is caused by an increase in rate of interest by the Reserve Bank of a country.
- The rising rates create risk to the financial system apart from a decline in demand and consumption due to the higher cost of borrowing, which results in a decline in the activity of the nation.
- Each US economic recession that has occurred that has occurred since World War II has been defined by the decline in the Gross Domestic Product (GDP) and an equal increase in unemployment.
- In general, unemployment and economic contraction are in sync since they feed one another: When the economy is in a slump firms lay off workers.
- In the end, consumers spend less money, which consequently, reduces demand and decreases business profits.
- Therefore, they cut back on employees, which further reduces demand.
- This can turn into a cyclical.
- However, presently the economic output in US is shrinking to match the Fed's rate of tightening.
- The unemployment rate is 3.5 percent this is the lowest level since 1970.
- The labour market is having record-high ratios of open jobs to prospective applicants, which indicates to an increase in employers continue to post open job advertisements.
- **Cause?**
- Massive inventory overflow due to the rush to stock up on commodities.
- A surge in the stocks due to rising corporate earnings and supply deficit due to demand-excess liquidity rather than debt is the most likely reason for a recession.
- The economy didn't have the capacity to handle the increased demand however it

stimulated the demand by transferring cash to individuals through an economic stimulus.

- The wage-price spiral is a common expectation that people expect the future price to be higher, and they will expect more wages.
- This however creates its own inflationary spiral when companies attempt to sell their items and services at a higher price because of to an increase in the cost of production.
- Impact Less severe recession to the business sector.
- There is more room for tightening monetary policy until employment begins to fall in developing countries such as India If the Fed increases its policy rates and the gap between the interest rates of both countries shrinks, which makes countries like India less appealing, resulting in capital outflows.
- A higher rate signal from the Fed could also result in an ebb to expansion in the US as well, which is nevertheless a negative sign for global growth.
- Capital outflows are triggered by currency depreciation, and a growing current account deficit and the rise in import inflation.

Topic 19. GENERALIZED SYSTEM OF PREFERENCES (GSPS)

Important for subject: Economy

The Centre could engage with industry to examine the effect of the EU's decision to remove preferential tariff benefits for certain goods from India which includes electrical equipment, stone articles, plastics and leather articles beginning in January 2023.

- Specifies the scheme the EU provides preference access to specific products that originate from certain countries that are developing, and on its markets, in the in the form of reduced or even zero rates of customs duty.
- In accordance to EU regulations, GSP beneficiaries can lose preferences on certain product categories which are considered to be competitive enough.
- The EU adopted a brand new generalized scheme of preferences in the year 2012. It has 3 distinct strands.
- GSP general arrangement which applies to all countries with beneficiaries.
- GSP+ is a specific scheme that removes all tariffs that apply to almost the same types of goods that are covered under GSP general arrangements.
- All But Arms: A special arrangement for countries that are least developed (as recognized as classified by the UN) providing them with access to duty-free and quota-free to all goods, excluding ammunition and weapons.
- Concerning the Generalized System of Preferences (GSPs) the system was first

proposed through the UN to assist developing nations join the global economy.

- It was established around 1971 and was created under the auspices of the United Nations Conference on Trade and Development (UNCTAD)
- It is an umbrella that encapsulates the majority of preferential schemes offered by industrialized countries to developing nations.
- It is a reduction in Most Favoured Nations (MFN) tariffs or duty-free access of eligible exports from the beneficiary countries to countries that are the donor countries.
- The 13 countries that offer GSP preferential treatment to developing and emerging countries include: Australia Belarus Canada European Union Iceland Japan Kazakhstan New Zealand Norway Russia Switzerland Turkey USA
- The reason for granting GSPs is to assist developing countries, and in particular the less developed nations (LDCs) to promote productive capacity building and to increase investment and trade.

Topic 20. CHINESE COMPANIES AND ASSOCIATED RULES IN INDIA

Important for subject: Economy

A plethora of certified accountants and company secretaries, and cost accountants are under scrutiny by the regulators for possible violations of the law on companies in relation to the setting up of specific Chinese firms and their subsidiaries in India.

- Chinese companies in the sense that they are run by Chinese directors who are promoters.
- The process of incorporation involves a variety of processes like creating and certifying the documents, as well as submitting the documents to the Registrar of Companies for their approval.
- Procedures followed by the corporate affairs ministry established stricter guidelines for the selection of certain individuals from countries such as China as directors on boards of Indian companies, making the requirement for security clearances for these individuals.
- The citizens of border-sharing countries from the Land who are appointed directors on corporate boards must to be granted an authorization to secure the Ministry of Home Affairs along with a consent form.

- FEMA has been made compulsory for organizations from such countries who are involved in amalgamations with Indian businesses.
- In April, the guidelines demanded an approval from the government for foreign investment from countries that share border with India.
- In the past, only investments coming originated from Pakistan and Bangladesh were subject to such restrictions.
- The new rule is targeted primarily at China the new rules stipulated that investors from these countries will need to obtain regulatory approval prior to making investments in India or expanding the stake they hold within Indian companies.
- The Registrars of Companies (ROC) Registrars of Companies (ROC) appointed under Section 609 of the Companies Act that covers the different States as well as Union Territories are vested with the main responsibility of registering corporations and LLPs that are registered in their respective states and Union Territories and ensuring that these corporations as well as LLPs adhere to the legal requirements of the Act.
- These offices act as a register of records, which are related to the companies that are registered in them, and are accessible to people who are interested on the payment of the fee prescribed.
- It is the Central Government exercises administrative control over these offices via Regional Directors.

Topic 21. OVERSEAS BORROWING, A DOUBLE-EDGED SWORD?

Important for subject: Economy

The lure of lower rates could be deceiving since foreign currency loans could turn out to be costly.

- There are a variety of options to improve the capitalization of companies
- One approach is to inject excess earnings into the business through retained earnings.
- Another option is to reduce the stake of the existing shareholders in the business by launching rights issues to bring cash capital to the company.
- The third option, and possibly most efficient method is to take money via banks in person, through NBFCs, or the public market by issuing bonds or debentures.
- Fourth, borrowings based on foreign currencies.
- Arguments for borrowing in foreign currencies if there's a gap in the interest rate

between the international and domestic markets (favouring the one) it becomes more affordable to serve these loans.

- The risks it is important to keep in mind that the borrower remains willing to risks of currency exchange despite the different interest rate to due.
- If the currency of the country was to fall in value compared to its foreign counterpart, your business could be forced to pay more than they was expecting in terms of real.
- This means that the currency risk is offset by earnings in the foreign currency or some alternative measure.
- Example Vedanta is an Indian mining company that had an estimated market capitalization of Rs93,896 crore (at the date of writing this article)
- It had taken out \$1.2 billion as of February 20, 2021, when its U.S. dollar to rupee exchange rate was at around Rs72.6 but reached a maximum of Rs80.03 on July 18 , this year.
- The dollar, as nominal appreciated by 10.6 percent in just an entire year and a half.
- The increase of 10.6 percent in total interest payments amount to \$1.394 million.
- Problems with borrowing in this current economic climate is the imminent possibility of recession due to the increase in interest rates to limit inflation.
- Central banks around the world, particularly those of the Federal Reserve, have raised rates in unison.
- The impact of increasing rates is a combination of two aspects that are the first one being the possibility of lower profits due to a declining economy, and the second is the decrease in the value of the rupee when compared to foreign currencies.
- Even though the borrowing capacity of these firms is not changing but their earnings decrease due to an economic downturn, increasing the amount of debt they have to pay.
- The NCDs (non-convertible debt instruments) Debentures are long-term financial instruments issued by corporations to take out loans.
- Certain debentures come with the option of being able to be converted into shares after an arbitrary period of time, at the discretion of the holder of the debenture.
- Debentures that cannot be converted into shares are known as Nonconvertible Debentures (or NCDs).
- There are two kinds of NCDs - secured and secured and. Secured NCD is secured by

the funds of the business.

- If the company is unable to pay its obligation and the holder of the debenture may claim it through liquidation of the assets.
- Contrary to this it is not possible to secure backing in NCDs that are unsecured if the company is in default.

Topic 22. RS 6250-CR IPO WAS APPROVED: PHARMEASY'S PARENT COMPANY WITHDRAWS DRHP

Important for subject: Economy



Afraid of volatility in the markets, API Holdings, the parent company of the health tech unicorn PharmEasy has decided to withdraw its "red herring" prospectus (DRHP) that it submitted to the Securities and Exchange Board of India (Sebi) and the business informed its investors via a letter.

- **What is DRHP?**
- A Draft Red Herring Prospectus (DRHP) is a legal preliminary document.
- It is a crucial connection between the company preparing for an IPO as well as its investors and other stakeholders.
- A business that wants to get funds from the public markets through public offerings will need to submit a prospectus draft with SEBI (Securities and Exchange Board of India).
- The prospectus provides the bulk of the information relating to the business's operations and directors, as well as its previous record, and more.
- Except for some important information like the issue price.
- There is a clear declaration that says this information to be only preliminary and the

possibility of to alteration.

- **What SEBI does with the DRHP?**
- SEBI checks and ensures that sufficient disclosures are provided to the issuer to allow the investors to take an educated decision on investing on the issue.
- It is essential to know that SEBI does not approve the offer. Likewise, SEBI does not recommend the shares or warrant the accuracy or sufficiency of DRHP.
- SEBI's comments on the draft offer documents are passed on to the banker who is merchant who then incorporates the changes needed and then files the final offer together with SEBI, Registrar of Companies (RoC) and stock exchanges.
- After scrutinizing the DRHP and the market regulator provides its suggestions that have to follow by the business.
- After the comments are implemented the document is given final approval and the document is then renamed RHP (Red Herring Prospectus).
- After RHP's registration in RoC is completed and a final prospectus that includes IPO size and price is published.

Topic 23. ELECTRICITY SECTOR

Important for subject: Economy

The National Load Dispatch Centre (NLDC) has prohibited discoms in Telangana from taking part in the day ahead market through an exchange called the Indian Energy Exchange (IEX) to purchase energy on the basis of not paying dues to Gencos even though they have made payments.

- National Load Despatch Centre (NLDC) It was established according to Ministry of Power (MOP) announcements pursuant to Section 26 in the Electricity Act 2003 It is the apex authority to ensure the smooth operation of the power system of the nation.
- The principal tasks that are assigned to NLDC include: Supervision over all Regional Load Despatch Centers.
- Scheduling and distribution of electricity across inter-regional lines in accordance with grid standard set by the authority and grid codes defined by Central Commission in coordination with Regional Load Despatch Centers.
- Coordinating of Regional Load Despatch Centers for maximising efficiency and efficiency for the operation in the operation of National Grid.

- Monitoring of operation and grid security for National Grid. National Grid.
- Monitoring and control of inter-regional networks as necessary to ensure reliability of the system it is able to control.
- Coordinating in conjunction with Regional Power Committees for regional outage times in a national view to ensure the best utilization of power resources.
- Coordinating in conjunction with Regional Load Despatch Centers for the energy accounting for inter-regional power exchange.
- Coordination for the restoration of the grid's synchronization together with Regional Load Despatch Centers.
- Coordination for the trans-national exchange of power.
- Giving operational feedback on the national grid plan to the Authority and the Central Transmission Utility.
- Levy and the collection of this costs and fees from licensing companies or generating companies who are involved in the power system, in accordance with what can be regulated in Central Commission. Central Commission.
- Communication of information related to the operation of the transmission system, in line to the directions or regulations that are issued from the Central Government from time to time.
- The Indian Energy Exchange (IEX) Power Exchanges give market participants with multiple ways to purchase and sell of power, allowing them to control their power portfolios effectively.
- Indian Energy Exchange is the largest and most prominent Energy Exchange in India that provides a nationwide automated trading platform for the physical supply of renewable energy, electricity Certifications, and Certificates for Energy Saving.
- India Energy Exchange enables participants to buy electricity on the same day via intra-day contracts, to be used for the following day using day-ahead contingency on a daily basis for a rolling 7 days with daily contracts, and on a regular basis, through the weekly contract to control their electric portfolio for various time periods.
- This can be described as an Indian electronic system-based trader's exchange that is controlled through the Central Electricity Regulatory Commission (CERC).
- IEX began its operation on June 27, 2008.
- The exchange platform allows efficient price discovery and enhances the transparency

and accessibility of the market for power in India and also improves the efficiency and speed of execution of trade.

- Exchange is a public company that has NSE as well as BSE.
- Indian Energy Exchange pioneered the development of power trading in India and offers an electronic platform to the many participants in the power sector comprised of State Electricity Boards, Power producers, Power Traders and Open Access Consumers (both Industrial & Commercial).
- IEX is the one of two operating Power Exchanges in India.
- The Product Segments are: Day-Ahead Market (DAM) launched in June 2008, the DAM segment lets the participants make electricity transactions on a 15-minute block basis, one morning prior to the electricity being delivered.
- Sellers and buyers offer their bids in electronic form in the auction session. The matching bids are conducted through a bi-directional auction mechanism with a single auction price and market clearing.
- The Term-Ahead Market (TAM) Introduced in September 2009, contracts within TAM offer a wide range of selling or buying electricity with duration of between to eleven days.
- It allows participants to purchase electricity on the same day using intra-day contracts, and for the next day with a day-ahead contingency, on daily basis for a rolling seven days with daily contracts as well as for a monthly basis with Weekly contracts to oversee their energy portfolios for various lengths.
- Renewable Energy Certificates (REC) Introduced in February 2011 The Renewable Energy Certificate marketplace allows transactions that deal with environmental aspects.
- It is possible that the Renewable Energy (RE) generator could choose to obtain RECs in order to support the environmental attributes of their production.
- Generators are able to sell RECs via the exchange.
- On the other hand, the obligated entities-distribution companies, captive plants and open access consumers may opt to purchase RECs to fulfil their Renewable Purchase Obligation (RPO).
- Renewable energy generators have the ability to provide electricity to distribution companies at their typical price of purchase, and use the same method for

consumption in captive mode, or sell the electricity to third parties and sell the environmental benefit of the renewable energy through RECs.

- The REC Market provides both the solar as well as non-solar RECs Energy Saving Certificates (ESCerts) They are traded certificates in the Perform, Achieve, Trade (PAT) Scheme of Bureau of Energy Efficiency (BEE) A market-based scheme to encourage energy efficiency within large, energy-intensive industries.
- IEX was the first and the only Power Exchange to commence trading in ESCerts on the 26th of September 2017.
- Power System Operation Corporation Power System Operation Corporation Limited (POSOCO) is a CPSE under the authority of the Ministry of Power, Government of India.
- It is the responsibility of the department to supervise and ensure that there is a continuous the operation of the Indian Power System in a safe, reliable and secure way, thus facilitating the mission of the organization.
- It is comprised of five Regional Load Dispatch Centres (RLDCs) as well as the National Load Despatch Centre (NLDC).
- Various apps like Vidyut Pravah, Merit, etc. created by POSOCO are used to distribute real-time information on Indian Power System in public domain in order to improve transparency in electricity market operations

Topic 24. LIQUIDITY ADJUSTMENT FACILITY

Important for Subject: Economy

What's going on in the news?

- It was announced that the Reserve Bank of India increased the repo rate to 5.40 percent under the Liquidity Adjustment Facility (LAF)
- Information: The repo rate which is the rate that RBI RBI is able to lend cash to commercial banks has increased to 5.40 percent from its prior Covid rate of 5.15 percent.
- Effect: Increase in rate of interest and a decrease in the supply of money.
- It increases costs of borrowing for banks through the RBI which is transferred to lenders through a rise in the interest rate for loans.
- This results in higher EMIs on loans - auto and home, as well as consumer durables

and can extend the duration of floating rate loans.

- Long run as interest rates on credit rise- companies, especially those in the manufacturing industry cut their business expansion and production, further raising the already high rate of unemployment.
- The delay in real estate and infrastructure products due to an increase in the costs of borrowing.
- This will result in a higher cost of borrowing and slow recuperation for MSMEs.
- Demand for fixed income securities is expected to rise.
- Fixed income securities are loans which pay a set amount of interest -- in terms of coupon payments to investors.
- The payments of interest are generally given semi annually, and the principal invested is returned to the investor upon maturity.
- They are by far the most popular kind of fixed-income securities.
- The asset quality of banks decreases because of the high cost of borrowing, they are more difficult to repay loans, which in turn increase the Gross Non-Performing Assets of Banks.
- GNPA as of March 20, 2022 was 5.9 and banks are aiming for to increase it to be at 5.3% by March 2023.
- Liquidity Adjustment Facility Liquidity Adjustment facility was suggested in the Narasimham Committee on Banking Reforms and was first introduced in 1998 by the RBI in 1998.
- The liquidity adjust facility (LAF) is an instrument for monetary policy that is utilized extensively in RBI.
- Reserve Bank of India (RBI) it permits banks to obtain money through the repurchase agreement (repos) or provide credit to the RBI through reverse repo agreements.
- There are two major elements of the Liquidity Adjustment Facility (LAF)
- Repo Rate: It's an amount at which Reserve Bank of India (RBI) lends to other banks.
- Reverse Repo Rate determines the amount at which the Reserve Bank of India (RBI) is able to borrow directly from commercial banks.
- This is a useful structure for cutting down on liquidity needs and is a way of maintaining the stability of the financial market.
- The Liquidity Adjustment Facility: Example that a bank has an immediate cash

shortage due to the Indian economy's downturn.

- The bank can use RBI's liquidity adjustment facility signing a repo agreement in conjunction with RBI and then selling government securities for loans, and an agreement to purchase the securities.
- Let's say the bank needs an overnight loan of 50,000,000 and signs an agreement for repo that is 6.25 percent.
- The amount of interest due by the bank for the loan will be Rs8,561.64 (50,000,000 multiplied by 6.25 percent (365 days).
- Another example is that the economy is growing and a bank has additional cash in its account.
- In this scenario the bank could sign an agreement to reverse repo in conjunction with RBI by offering an offer of loan in exchange for securities issued by the government and accepting to purchase those securities.
- As an example, suppose that the bank has funds of Rs25,000,000 to give to the RBI and chooses to sign an agreement for one day of reverse repo with a rate of 6.6%.
- The RBI will then be able to pay an institution Rs4109.59 for interest (25,000,000 + 6 % x the 365 days of the year).

Topic 25. SEBI NEW RULES ON AIF AND VCF

Important for subject: Economy

What's the story?

- SEBI reduces rules on alternative investments funds (AIFs) or venture capital funds (VCFs) investment in foreign companies.
- Details: Previously the law stipulated that VCFs and AIFs that raise funds in India should only invest in the companies worldwide that have an affiliation to India and at the least an office in India.
- They can now invest in any business they choose around the globe.
- Invest in an overseas investment company that is registered in a country where the regulatory authority for securities markets is an official participant to the International Organization for Securities Commission's (IOSCO) Multilateral Memorandum of Understanding or is a member to the bilateral agreement with SEBI.
- In addition, AIFs or VCFs can sell their investment in overseas companies to those

who are that are able to invest in overseas.

- AIFs and VCFs have to submit an application and provide the divestment information of the overseas investments prior to SEBI determines the allocation of limits for overseas investment in the form.
- The overseas investments that have been sold or divested by them to date are also disclosed to SEBI in the next 30 days.
- However, VCFs and AIFs can't invest in: companies that are which are incorporated in countries that don't adhere to international money laundering regulations Companies which are incorporated in other countries do not have agreements with SEBI or jurisdictions that are on the blacklist or have restrictions from FATF
- The concept: Alternate Investment Funds (AIFs) AIFs are investment funds with their purpose of pooling funds in the form of Indian or foreign investment to invest according to a set policy.
- They are an investment vehicle that invests in non-traditional assets such as real estate, infrastructure venture capital, etc.
- Venture capital or private equity hedge funds, property tangible assets, and commodities are the most common examples of alternative investments.
- It is a privately-owned investment vehicle that gathers funds from sophisticated investors, Indian as well as foreign with the intention of investing it according to an established investment policy to their benefit.
- Venture Capital Funds (VCFs) VCF is an AIF that invests mostly in securities that are not listed by companies that are start ups, or early-stage venture capital ventures that are primarily involved in the development of innovative products, technologies, services or intellectual property rights based actions or a brand new business model.
- It is the International Organization of Securities Commissions (IOSCO) founded in April 1983.
- Headquarters: Madrid, Spain IOSCO is a non-profit organization that develops, implements, and promotes the adherence to internationally accepted standards for the regulation of securities.
- It is the global organization that unites the world's securities regulators with over 95% of markets for securities in the world, and is the standard setting body for the securities industry.

- It collaborates closely with G20 (Group of Twenty) and the Financial Stability Board (FSB) in establishing standards for strengthening markets for securities.
- Its IOSCO Objectives as well as the Principles of Securities Regulation have been approved by FSB as one of the primary standards for strong financial systems.
- The enforcement role of IOSCO extends to issues regarding the interpretation and application of International Financial Reporting Standards (IFRS) in which IOSCO keeps an (confidential) record of the enforcement actions of members of the agencies.
- IFRS is an accounting standards developed from the International Accounting Standards Board (IASB) with the aim of providing a standard accounting language to improve efficiency in the reporting of financial data.
- Objectives: To assist in the process of developing, implementing, and promoting the adherence to internationally accepted and uniform standards of oversight, regulation and enforcement to ensure the safety of investors, provide an efficient, fair and open markets, and attempt to tackle systemic risk; to enhance protection of investors and boost confidence of investors on the reliability of the securities markets through a strengthened exchange of information and cooperation in the enforcement of violations and oversight of market intermediaries and markets as well as to share information at the local and global levels about their own experiences to aid in the development of markets, improve markets and establish an appropriate regulatory framework.

Topic 26. BLOCKCHAIN INFRASTRUCTURE

Important for subject: Economy

We require resilient digital platforms, and they could be built in the Web 3.0 architecture.

- Web 3.0 the idea of Web3 often referred to as Web 3.0 is employed to refer to a possible next version of the internet.
- World Wide Web, which is often referred to as a Web is a collection of web sites or web pages which are stored on web servers and linked to local computers via the internet.
- These websites contain text pages, digital images, audios, videos, etc.
- The users are able to access the content on these websites from anywhere in the world of the world on the internet via their devices, such as laptops, computers, mobile

phones and more.

- Web 3.0 is a decentralized web to run on blockchain technology.
- It will differ from the current versions used today, Web 1.0 and Web 2.0. Examples include blockchain such as NFT, DeFi, etc.
- In Web3 users will be able to take ownership stakes in applications and platforms unlike today, when tech giants control the platforms.
- The significance of Web 3.0-It is a brand different model of the Internet protocol that incorporates blockchain-based tokens, transparency, and decentralization.
- Web 3.0 is a fair and decentralized internet that will provide a decentralized and transparent internet that allows users to control their own personal data.
- Eliminates intermediaries: With the Block chain, both the date and location of transactions is recorded for the duration of time.
- This means that Web3 permits transactions that are peer to peer (seller to buyer) transactions without the need for intermediaries.
- The concept could be expanded to Decentralization as well as Transparency.
- The underlying principle of Web3 can be described as Decentralized autonomous organization (DAO).
- With DAO, there is no requirement for an authoritative central authority to authenticate or verify.
- Blockchain can be described as an ingenious distributed ledger technology which was first developed in the design and creation of crypto Bitcoin which was created in 2009 with the help of Satoshi Nakamoto.
- Blockchain utilizes a unique schema for data where verification information associated to the transactions is encrypted against tampering, and is stored in blocks.
- It is a unique mix of tamper-proof and permanent recording, real-time transactions transparency, and auditability.
- The exact replica that is the entire blockchain made available to every one of the computers or users connected to networks.
- Blockchain infrastructure is being adopted across the Globe Estonia, which is the world's biggest blockchain capital is using blockchain technology to confirm and process the e-governance offerings offered to the public at large.
- China BSN (Blockchain-based Service Network) to deploy blockchain applications

using cloud computing in a more efficient manner.

- The Britain-National Digital Twin Program (NDTp) to foster collaboration between the developers and owners of digital twins within environments built.
- Brazilian Blockchain Network to bring participating institutions into governance as well as the technology system that supports the adoption of blockchain in solutions to improve the public good.
- Layer-1 and Layer-2.
- The term "layer 1" refers to the blockchain's fundamental architecture that is the core structure of a blockchain.
- Bitcoin, Ethereum, and BNB Chain are examples of Layer 1 blockchains.
- Layer 2 is a reference to networks that are built on the top that of the other Blockchains.
- In this case, for instance If Bitcoin can be described as Layer 1 then it is the Lightning Network that runs on the top of it can be an illustration of Layer 2.
- Therefore it is true that the Layer 1 solution can alter the rules and mechanism of the blockchain in direct ways while the Layer 2 solution uses an additional parallel network to facilitate transactions that are not on the mainchain.
- The need for layer 2 For instance, initially, Bitcoin was intended to be a decentralized system for payment which allowed users to remain anonymous and use it from any location.
- However, due to it's popularity, transactions became slow and expensive.
- Therefore, developers developed cryptocurrency layers.
- The initial layer was the main blockchain.
- Each layer below it is a complement to the one above and provides additional functions.
- Lightning Network is a second layer of Bitcoin that makes use of micropayment channels to increase the capacity of Bitcoin to make transactions more efficient.

Topic 27. A COUNTRY THAT IS DEVELOPED***Important for subject: Economy***

The "developed country goal is the first of five vows Premier Narendra Modi exhorted Indians to make during his speech to Indians during Independence Day.

- "The "Panch Pran" - five vows? Each Indian should be focused on the development of the nation 100% freedom from slavery; taking pride in Indian tradition; Ensuring that priority is accorded to the unity and integrity of our nation.
- Every citizen must be accountable.
- What is a developed nation?
- Different institutions use different standards.
- The UN's World Economic Situation and Prospects divides the countries in three general categories: Developed economies - There are 31 countries that are developed in total according to the UN in all.
- Transition economies comprise 17 economies emerging economies, reviving countries
- The classifications are made to reflect basic economic conditions, and is not dependent on regional classifications.
- Therefore, there are many European nations can be classified "developed", and not all Asian ones are "developing".
- Criteria-United Nations employs its categorisation by the World Bank that is based upon Gross National Income (GNI) per person (in the current US dollars)
- What is the reason for which this United Nations classification contested?
- It's not accurate and lacks the analytical power: China's person income is more similar to the Norwegian equivalent than that of Somalia, and it is classified as a developing country, whereas Ukraine's per capita GNI stands at \$4,120 (a one-third of the china's) -- is classified in the category of "economies in transition".
- The position of India: India is currently in the middle of the so-called developed nations, and some of the developing nations despite the fact that India is among the largest economies in the world in terms gross domestic product (gross domestic product).
- India has seen a steady improvement in Human Development Index HDI metrics. For

instance, the average life expectancy in the year of birth (one among the sub-metrics in HDI) for India has increased from forty years back in 1947 to about 70 years today.

- Human Development Index (HDI) is a composite indicator where the final score is reached through the analysis of three elements that affect longevity and health of people and the quality of the training they get, as well as their level of living.
- India is the third largest economy in terms of purchasing power parity (PPP) in terms of.
- But in terms of per-capita revenue, India is behind even Bangladesh.
- The per-capita income of China is 5.5 times higher than India while the UK's is close to 33 times.
- 10% of Indians have a minimum of are above that threshold, which is \$10 (PPP) each day for the world's middle class.
- The currently HDI scores (0.64) is lower than the scores of the developed nations did in the 1980s.
- How much will India reach in 2047?
- In the event that India were to expand as fast that China was between 2007-2022 then it would take India an additional 15 years to reach the level that China is today.
- The report of the World Bank for 2018 describes what India can be able to achieve in 2047.
- The majority of its population will be part of the world's middle class i.e. households are entitled to higher healthcare and education as well as clean water, better sanitation as well as secure electricity, a safe living space, affordable housing and enough money to invest in leisure.
- It is necessary to meet the prerequisites- earning more than the poverty line, and improved delivery of public services.
- The classifications of other institutions include: World Bank: The World Bank assigns the world's economies to four income levels: low middle, upper middle, and high-income nations.
- The classifications are reviewed every year on the 1st of July.
- They are based upon the Gross National Income (GNI) per person in the current USD of the preceding year.

- In its most recent classification (2022-23) it is clear that the World Bank has classified India as a country with a lower middle-income.
- What defines a "developing" country classified under the WTO? The WTO does not define the terms 'developing' and 'developed' countries, so members have the freedom to declare whether they are developing.
- What are the advantages of the 'developing nation' tag?
- Certain WTO agreements provide developing countries with certain rights under special and different treatment' (S&DT) provisions, that can give developing countries longer periods of time to comply with the agreements as well as commitments to improve the trading opportunities available to those countries.
- WTO accords tend to aim at reducing government support to specific industries in the future. They also establish less lenient goals for countries in the developing world and give the countries more time to meet these goals when compared to advanced ones.
- This classification also permits different countries to give preference treatment.
- What are the advantages from LDC classification?
- The WTO recognizes LDCs using a classification made by the UN which is based on criteria that are reviewed each three years.
- LDCs are typically exempted from specific provisions of WTO accords.
- Bangladesh is currently classed as an LDC which means it has no duty and has access to no quotas to almost every export to EU members.
- However, it is scheduled to be removed off being an LDC classification in the year 2026, as its GDP per capita is rising significantly, surpassing the GDP from India during FY21.

Topic 28. DOT PREPARES AUCTION FOR SATELLITE SPECTRUM

Important for subject: Economy

It is believed that the Department of Telecommunications (DoT) is fighting hard in the direction of auctioning satellite spectrum.

- After two years of arduous lobbying by satellite companies which include Low earth Orbit (LEO) companies like OneWeb, Telesat and Starlink which were seeking the administrative assignment of satellite spectrum.
- As the soon-to-be-announced space policy is expected to allow private players to

enter space.

- Satcom market, satellite operators were looking at spectrum ranging from 27.5 to 31.5 GHz to offer new services, such as satellite broadband.
- Telecom operators also were eyeing the spectrum of 27.5GHz to 28.5 GHz for 5G. In addition, the government had decided in the course of negotiations for auctions for 5G that this band should be divided between satellite companies as well as telcos, and could be used for mixed-use.
- As India is preparing for an era of new phone calls with 5G, the latest technologies like low latency satellite broadband as well as satellite backhaul could also be introduced to this Indian market.
- Large tech companies like Amazon's Kuiper and Elon Musk's Starlink and Sunil Mittal's OneWeb are all eyeing the Indian market, while regulators consider the latest set of rules for new technologies that are coming to market.
- Satellite Internet and LEO Technology The position of satellites LEO satellites are situated between 500km to 2000km from the earth, in contrast to the stationary satellites that are located around 36,000km.
- The term "latency" refers to the amount of time it takes to allow data to be transmitted and received dependent on the proximity.
- Because LEO satellites are closer to the Earth they are capable to deliver more powerful signals and higher speeds than fixed satellites.
- Furthermore, since signals travel further through space than fiber optical cables, LEO satellites are able to surpass, if not compete with the current ground-based networks.
- More investment: LEO satellites travel at the speed of 27,000 km/h and complete a full circle of the globe in between 90 and 120 minutes.
- In the end, satellites are able to only be in direct contact with an earth transmitter for a brief period of time.
- This means that they require massive LEO satellite fleets, and as a result an investment in capital.
- Because of to these expenses among the three types of Internet such as spectrum, fibre and satellite - satellite is the most costly.

Topic 29. CENTRAL POOL FOODGRAIN STOCKS AT THE LOWEST IN 5 YEARS***Important for subject: Economy***

The rice and wheat stocks within the Central Pool, managed by the Food Corporation of India (FCI) is at its lowest for five years mostly due to less wheat being procured.

- Rice stocks, while above levels of 2020, could be depleted rapidly if there's an increase in production during the this kharif season, as paddy transplanting dropped by 12 percent since the last week.
- According to recent figures the total wheat and rice inventory as of August 1st stood at 545.97 lakh tonnes (lt) which is a significant increase from the previous lowest was 499.77 tonnes (lt) in 2017.
- Food Corporation of India The Food Corporation of India Food Corporation of India (FCI) is a public Sector Undertaking that is part of the Department of Food & Public Distribution, Ministry of Consumer Affairs, Food and Public Distribution.
- FCI is an statutory organization established in 1965 under the Food Corporations Act 1964.
- It was founded in the midst of a major shortages of cereals, specifically wheat.
- The Commission for Agricultural Costs and Prices (CACP) was formed in the year 1965 to suggest remunerative prices to farmers.
- Its primary function is to take on the purchase, storage transport, distribute, and market food grains as well as other food products.
- Buffer Stock: Buffer stock is a reference to the reserve of a particular commodity utilized to protect against the effects of price fluctuations as well as unforeseen emergency situations.
- It is usually used for important commodities and essential items like pulses, food grains, etc.
- This concept for buffer stocks was first introduced in the fourth Five Year Plan (1969-74) The Cabinet Committee on Economic Affairs establishes the minimum buffer norms on a an annual basis. i.e. beginning on the 1st April 1, 1st July, 1st October, and the 1st day of each financial year.
- Food Stock in the central government's pool is that which is of the States Government Agencies (SGAs) States participating of the Decentralised Procurement Scheme Food

Corporation of India(FCI) The supply of food grains that are in the Central pool is distributed throughout the year based on of-take and the trends in procurement.

- Thus, the time of production and purchasing is a significant element to decide the required minimum grains stocks needed in each period of the year.
- In the present the standards for stocking buffer stocks set by the GoI comprise of Operational Stocks: the stocks required to meet the monthly needs according to TDPS as well as OWS.
- Food Security Stocks the stocks to cover the shortfall in procurement.
- Food grains available as part of OWS or TDPS are considered to be operational stock.
- The surplus is classified as buffer stock as well as operational stock, both.
- The excess stock that is above the stockpiling minimum norms is regarded as surplus stocks and exported periodically to time, and additional allocations to certain states, or through the open market sale.
- Offshoring is the dreaded issue pollution occurs every July.
- Singapore is preparing to be able to see its greenery disappear in a puff of smoke.
- The smoke that comes from land-clearing fires erupts from Indonesia and Malaysia during the dry season.
- A recent study identified a different source of pollution to the air from Singapore's neighbours: heavy-metals like chromium in heavy industry.
- This pollution is present throughout the year, creating the risk of chronic exposure to health.
- It is a result of what experts have called "pollution havens": emerging Southeast Asian economies such as Indonesia, Malaysia and Thailand which are rapidly becoming industrialized.
- They are home to the industries Singapore as well as other countries that are able to outsource.
- What is a Pollution Haven? According to the Pollution Haven Hypothesis argues that firms seek to get around the expense of environmental regulations that are strict (and the high cost of energy) by setting up production in countries with environmental standards that are more relaxed.
- In this regard these studies provide convincing evidence of the impact of energy prices on companies who are able to outward Foreign Direct Investment (FDI).

Topic 30. INDIA IS AT 75 TOP POINTS IN SCIENCE AND TECHNOLOGY AND THE PACE OF INNOVATION***Important for subject: Economy***

Council of Scientific and Industrial Research founded in 1942, established by the CSIR in 1942.

- It has been executing its duties successfully since independence.
- The CSIR has established 5 of their own research labs with the support of industry and the government, as well as procuring resources via crowdsourcing.
- With the help of The Sir Dorabji Tata Trust and the Government of Bombay, the Government of India (through the CSIR) created the Tata Institute for Fundamental Research with the CSIR contributing a substantial amount of financial aid in the beginning.
- One of the first instances of developing science and technology-based solutions was the harmonization of various calendar systems.
- A committee headed by the Chairman of MeghnadSaha was established to tackle this issue.
- The report of the committee was released through the CSIR in 1955.
- This was later the catalyst to it being accepted as the official national calendar which is which is now one of the nation's identity components.
- Another instance in the beginning of Independence was to tackle the issues of organizing democratic elections and to prevent fraud, such as duplicate voting for the same voter.
- In the National Physical Laboratory of the CSIR National Physical Laboratory developed the indelible ink composed of silver Nitrate to solve this issue.
- The CSIR's contribution to the leather has had a transformative effect.
- In the beginning, when the CSIR Central Laboratory for Leather (CLRI) was founded in 1948, the institute developed methods for making finished leather like the first indigenous production of leather chemicals.
- This made it possible to transition to semi-finished to finished leather feasible.
- During the Green Revolution, the CSIR's footprint was visible in the development of agrochemicals as well as the automation of farming.
- Chemicals industry required the needed momentum for growth, even though the

Bengal Chemicals and Pharmaceuticals Ltd. was established in 1948 by Acharya Prafulla Chandra Ray a long time prior to the declaration of independence.

- Two companies from the public sector were created post-independence built on the technology developed by the CSIR's labs which included The Hindustan Insecticides Ltd. and Hindustan Organic Chemicals Ltd.
- The former was founded to produce agrochemicals.
- In the same way, the production of anti-HIV medications through methods that were developed in CSIR labs provided the needed stimulation to the expansion in generic drug companies.
- Agri-business Samba Mahsuri rice Variety Bacterial Blight Resistant CSIR is working in conjunction in collaboration with DRR (ICAR) as well as DBT part-funded research and development of an improved bacterial blight-resistant Samba Mahsuri variation.
- It is being used in approximately 90,000 acres in areas like Andhra Pradesh, Telangana, Karnataka and Tamil Nadu.
- It is cultivated as a rice cultivar (Muktashree) for Arsenic-Contaminated Areas: A rice variety has been created that restricts absorption of arsenic to a permissible limits.
- The variety was released to farmers in West Bengal. White-fly resistant cotton variety The company has developed a transgenic cotton line that is invulnerable to whiteflies.
- It is anticipated to make it commercially viable in the next 10 years, once it has received proper regulatory approvals.
- The automation of farming was accomplished through the creation of an indigenous Swaraj tractor at the CSIR Central Mechanical Engineering Research Institute (CMERI) which led to the creation of Punjab Tractors Ltd. in 1970.
- In the 1950s, as solving the problem of feeding infants seemed impossible then the CSIR created a technology to transform the buffalo's milk into powder, and commercialised it with the assistance from Amul Industries.
- The Aroma mission is a part of CSIR in recent years has changed the lives of a lot of rural farmers throughout the nation.
- Lavender cultivation in Jammu and Kashmir in the Union Territory of Jammu and Kashmir has attracted attention around the world as India's 'Purple revolution'.
- Strategic Sector Drishti Systems located on the Main Runway 28, 10, at IGI Airport:

Drishti transmissometer, a system for measuring visibility offers details to pilots regarding visibility for safe landings and take-offs and is appropriate for all airport types.

- 27 systems have been installed throughout 10 important Indian airports throughout the nation, working with IMD.
- Tata Power SED has signed Memorandum of Agreement with Tata Power SED to delivery of the 54 Drishti Systems for installation at Indian Air Force Airfields; 22 units have been supplied and three units have been put in place.
- Head-Up-Display (HUD) in high-tech fields, CSIR-NAL made significant contribution in the development of an indigenous Head-Up display(HUD) specifically for Indian Light Combat Aircraft, Tejas.
- HUD assists the pilot when flying the aircraft and also in crucial flight maneuvers, including the aiming of weapons.
- Design and development of indigenous Gyrotron: addressing the issues of denial of technology: Design and development of indigenous gyrotrons for nuclear fusion reactors has been completed.
- Energy and Environmental: Solar Tree On the 22nd of July, a sun-powered tree developed by CSIR in the CMERI laboratory in Durgapur was inaugurated that occupies only a small amount of space to generate clean energy.
- Lithium Ion Battery: India's first lithium-ion battery manufacturing facility that is based on the indigenous and innovative materials for the production of 4.0 V/14 standard cells has been set up.
- The technology that has been developed on Li-ion batteries is expected to be available for sale within the next few months.
- Medical: JD Vaccine for Farm Animals: Vaccine developed and commercialized to combat Johne's Disease that affects Sheep, Goat, Cow and Buffalo to be able to protect them and boost production of meat and milk.
- The Plasma Gelsolin diagnostic kit for premature births and Sepsis-related Deaths a new diagnostic tool is being developed to identify premature birth and sepsis.
- Genomics as well as other technologies to facilitate Medical Decision - GOMED: Genetic diseases, although individual rare, collectively impact a significant number of people.

- A program known as the GOMED (Genomics and other technologies derived from omics to Enabling Medical Decision) has been created by the CSIR which offers a set of technologies of genomics for disease to help solve medical issues.
- The current portfolio comprises more than 80 genes as well as the analysis of mitochondrial genes for mitochondrial diseases.
- In just 9 months, which included the testing phase, GOMED has catered to more than 600 patients across the nation.
- Food and Nutrition: Ksheer-scanner The Ksheer scanner, an innovative technological innovation by CSIR-CEERI, detects the amount of adulterants and milk adulteration within 45 seconds for a cost of only 10p and puts adulterators who trade in milk on notice.
- Salt that is double-fortified: that has been fortified with iron and iodine, which has enhanced properties that have been developed and tested to combat anaemia among people.
- It will be available on the market shortly.
- The anti-obesity DAG Oil: A oil that is enriched using Diacylglycerol (DAG) in place of the conventional triacylglycerol (TAG) created.
- It is expected to be released in the market in the near future.
- Water Aquifer Mapping of water Scarce Areas: Heliborne transient electromagnetic and surface magnetic techniques used to map aquifers in six different geological areas within Rajasthan, Bihar, Karnataka, Maharashtra and Tamil Nadu.
- Understanding the unique properties that are present in Ganga Water: Ganga Water: Evaluation of the Water Quality & Sediment Analysis of Ganga in different parts is being conducted daily Mapping

Topic 31. THE BILL ON COMPETITION 2022

Important for subject: Economy

Last week the Indian government India presented the Competition (Amendment) Bill, 2022 within the Lok Sabha.

- The bill's main goal is to change the Competition Act, 2002.
- The bill expands the definition of "combined" to include transactions that have greater than Rs. 2 crore.

- The Act prevents any person or company to enter into any merger that could have a negative impact on competition.
- This prohibition applies to transactions in which the parties are involved with the sum of their assets is greater than \$1,000 or a cumulative turnover exceeding 3,300 crore.
- This is dependent to specific other conditions.
- The Bill changes what control means to mean the power to exert significant influence over the affairs of the business, management or commercial strategic decisions.
- It defines control as having a significant influence over the affairs, management or strategic commercial decisions.
- Act define control as having control over the administration or business affairs of one or more companies over a group of companies or organizations.
- It is a Bill reduces the time frame applicable to combination to 150 days.
- The Act stipulates that any combination will not be effective after the CCI has approved an order or more than 210 days have passed since the date that an application for approval was submitted or the earlier date.
- The Bill includes companies or individuals who are not involved in similar or identical businesses to agreement lists which have negative effects on competition as long as they actively contribute to the execution of these agreements.
- According to the Act any agreement between businesses or people who are involved in similar or identical businesses could have an negative effect on competition when it meets certain requirements.
- This includes:
 1. direct or indirect in determining the purchase or sale price,
 2. control of the supply and production of goods or the provision of services or
 3. either directly or in indirect ways resulting in collusive bidding.
- Bill proposes to increase the scope of cartels, by including hybrid anticompetitive agreements into their scope.
- The Bill introduces a leniency plus program to identify cartels which includes companies currently in the middle of a cartel investigation to disclose their involvement in a cartel to receive penalty protection.
- The Bill provides for CCI to shut down inquiry procedures when the company provides:

1. The settlement
 2. commitments.
- The Bill allows the CCI to include additional types of transactions into the ambit that of the green channel.
 - This Bill proposes to disqualify transactions involving open market purchases as well as other transactions conducted on a controlled market from standing still obligation under the merger control regime if the transaction was promptly reported to the CCI and that the purchaser is not able to possess any ownership/beneficial rights or interests in the securities or shares.
 - The Bill expands the definition of a relevant product market to include the supply or production of services and products that are which are considered substituteable by suppliers.
 - It defines relevant product market as Act defines relevant market as a set of products and services that are considered to be substitutes by consumers.
 - The Bill extends the qualification requirements for the CCI members. CCI must have expertise in the field of technology.
 - According to the Act the chairperson and members of CCI should have a professional background of minimum 15 years in areas like:
 1. economics
 2. the competition issue
 3. law
 4. management
 5. business.
 - The Bill modifies the type of punishment for certain offenses instead of imposing fines to penalties.

Topic 33. THE PRIVATIZATION OF BANKS IN THE PUBLIC SECTOR

Important for subject: Economy

Banks in the public sector of India have been struggling with the high amount of non-performing assets (NPAs) that have led to the limitations in normal operation and loss of profitability.

- The steps taken are: RBI has placed many public Sector banks in Prompt Corrective Action (or PCA) Recapitalization of bank Privatisations of PSBs.

- Arguments for privatisation: reduce the financial burden of the government.
- Banks are more profitable and efficient with private ownership.
- Private sector banks have less bad assets.
- A higher percentage of contributions to saving from savers and the lending.
- Greater contribution to employment generation and branch growth.
- Less prone to fraud in banking Greater market capitalisation than PSB.
- Arguments against rapid privatization PSBs are the main source for rural growth and inclusion in the financial system.
- Private banks rule in the urban areas.
- It is the public sector banks who run branch offices in rural India.
- Additional ATMs were opened by PSBs in rural areas.
- Private sector banks only accounted for 1.3 crores out of the 46 crore beneficiaries in the Pradhan Mantri Jan Dhan Yojana (PMJDY).
- According to an RBI report, contrary to what is popular perception PSBs perform better than PVB in terms of the measure of objective satisfaction.
- Profit maximisation is their only motive, the performance of PVBs has always exceeded the efficiency of their public sector counterparts but when their objective changes to include financial inclusion, such as the total branches, agricultural advances as well as PSL advances, the PSBs are better than PVBs.
- Dominant share of Infrastructure finance-low profit and long gestation projects PSBs also perform better in the transmission of monetary policies and assisting countercyclical monetary policies to take off.
- The focus should be on the creation of a mix of private and public banks that are able to meet the requirements of a multi-faceted economy like India.
- Scheduled commercial banks' are banks that are included in the second list in the Reserve Bank of India Act.
- It includes Public Sector Banks, Regional Rural Banks and private sector Banks and small Finance Banks (SFBs), scheduled Payments Banks and Foreign Banks.
- Base Private sector bank Controlling authority of public sector banks Private individuals Government of India.
- Shareholding pattern of more than 50% shares with private companies or individuals.
- The majority of shares belong to central or state government legislation.

- Registered under the Companies Act 2013 Special acts that were passed by Parliament, such as the State Bank of India (Subsidiary Banks) Act 1959
- The body that regulates RBI FDI Cap of 74% with no control or management.
- A single entity does not have greater than 10% of an institution.
- 20% Management selection Personal process in accordance with RBI regulations Bank Bureau of India Central Vigilance Commission and RTI Act 2005 private sector banks are not within the jurisdiction that of Central Vigilance Commission and RTI Act 2005.
- All PSB's fall within the jurisdiction of Central Vigilance Commission and RTI Act 2005.

Topic 34. OVERSEAS INVESTMENT

Important for subject: Economy

What's the story?

- The finance ministry has made it more difficult for those who have defaulted on loans as well as those who are under investigation by inquiry organizations to fund foreign organizations.
- They must obtain the no-objection certificates (NOC) with their lending institutions or from the authorities that regulate or investigate prior to making investments abroad.
- This agent of intelligence is going to be needed for anyone who World Health Organization includes a checking account that is classified as non-performing quality or has been classified as a will full non-payer at any time by any banking institution, or Important for subject to an investigation by a money service regulator, Social Control Board of Directors (ED) as well as the Central Board of Investigation (CBI).
- At present time, investment in overseas property of a resident of the Republic of India is ruled by the exchange Management (Transfer or Issue of any Foreign Security) laws, 2004 as well as the Exchange management (Acquisition and transfer of Immovable property outside India) laws in 2015.
- This law, the Overseas Investment Rules and Regulations issued by the Foreign Exchange Management Act (FEMA) encompasses all current regulations pertaining to investments abroad and also the transfer and acquisition of property that is immovable in other countries than India.

- In accordance with the Exchange Management (Overseas investment) Rules 2022, associate Indian company can invest as much as four times its net value in a foreign entity.
- It is permissible to speculate as much as fifty percent of its net value in portfolio investments abroad.
- Associate Indian entity may develop Overseas Direct Investment (ODI) through the purchase of shares through subscription or purchase through tender or bidding procedure through rights offering or the allotment of bonus shares, capitalisation, swap of securities.
- This can be done through merging, demergering, integration or any other arrangement.
- An associate Indian institution could establish ODI in a foreign company which is engaged directly or indirectly in the business of monetary service.
- A resident will invest in non-financial companies with no limit, to accumulate foreign securities as a result of inheritance or gift from a resident of the Republic of India and just in case the presenter is overseas (as in the rules under the Foreign Contribution (Regulation) Act 2010)
- A director or an employee of an office located in India or a branch of an overseas entity, or subsidiary of an Asian countries of an distant company, or an Indian entity in which the foreign entity holds either indirect or direct equity holding permitted acquisition of shares or shares of interest under the worker stock possession arrangement or the theme of worker edges, as well as equity share.
- Indian resident or entities can take part in ODI for start-ups that are recognized by the law of the country of origin, but only through its internal accruals.
- Not all Indian resident is going to be permitted to invest in foreign companies that are involved in property related businesses, gambling of any form, or handling money products that are linked to the Indian financial unit without receiving the central bank's explicit approval.
- Direct investment outside Asian country is when investments are made that are made under either the automatic Route as well as the Approval Route or Approval Route, are made by means of contributions to the capital as well as subscriptions to the note of a distant company or through the purchasing shares in an entity that is distant,

either through market purchase, non-public placement or exchange, which entitles the buyer to the acquisition of a semi-permanent interest within the entity of foreign origin.

- Overseas Portfolio Investor-listed Indian businesses can put up to 50% of percent of their assets at the time of their last Balance Sheet audited in foreign businesses, which are which are listed on a recognized exchange or in the debt securities that are rated by these companies.
- "Foreign Direct Investment" (FDI) is when the corporation buys AN interest in the course of a business by a corporation that is located outside its own boundaries.
- Direct investment from overseas ODI is when an investor from a resident company invests in an owned wholly affiliate (or joint venture) in a non-resident nation in order to grow the company's operations.

Topic 35. DECLINING STATE FINANCIAL HEALTH

Important for subject: Economy

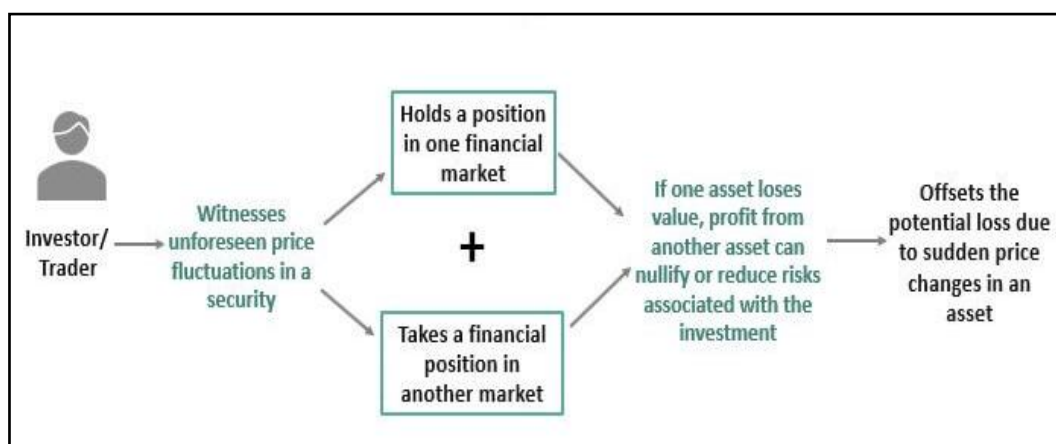
Chief Ministers of Fiscal Policy expressed their concerns about the decline in state revenues during the NITI Aayog meeting chaired by the Prime Minister.

- Causes of worsening financial health of States: Schemes and exigency-implementation of the Ujwal DISCOM Assurance Yojana, farm loan waivers, the pandemic Revenue- expenditure mismatch
- The Constitution provides the Union the government with more power for raising revenue and the States are charged with most of the welfare-related and development duties.
- Aggregate Revenue increased Aggregate Expenditure created Centre 62.7 37.3% 37.3 8/18 State 37.6 percent 62.4 Decline in devolution Although the 14th and the 15th FC increased the percentage of states in taxes on gross to more than 40 percent, the actual percentage did not reach the mandated amount.
- After peaking at 36.6 percent in FY19 States decreased their share and is now at about 29 percent.
- This gap, which was previously reflected in devolution percentage that was recommended from the FC and the actual devolution has grown to its highest level in the last two decades.

- The revenue share of the State is decreasing while the Centre's share is rising. The percentage of surcharges and cessations in the tax revenue of gross tax has increased from 10.4 percent in FY12 to 20% in FY21. This isn't part of the share shared by States.
- For FY19 as well as FY20 around 40 percent of cess that were imposed were not transferred into reserve funds. Reserve Funds.
- In the period between FY10-FY20 there was not one cent of oil cess paid in the Oil Industry Development Board (OIDB).

Topic 36. IMPORT HEDGING

Important for subject: Economy



Concerned about the fragility of India's external accounts and the declining rupee, Indian importers are covering a greater portion of their currency exposures than required to.

- Information on the causes of currency depreciation: the high cost of imports for oil as well as high inflation in the domestic market along with the Federal Reserve's excessive interest rate hikes that result in capital outflows.
- The Impact-India region saw a record-breaking export deficit that reached \$30 billion during July following a contraction in exports at the beginning of nearly one and a half years.
- Experts anticipate the deficit in the current account to increase dramatically without much or no assistance from investments.
- It is normal practice for 50% or more of risk is to be covered. In the present importers are hedged against imports close to 80%. Concept
- The term "Currency Hedging" refers to the process of entering into an agreement with

a financial institution to guard against unanticipated changes, anticipated or expected in exchange rates.

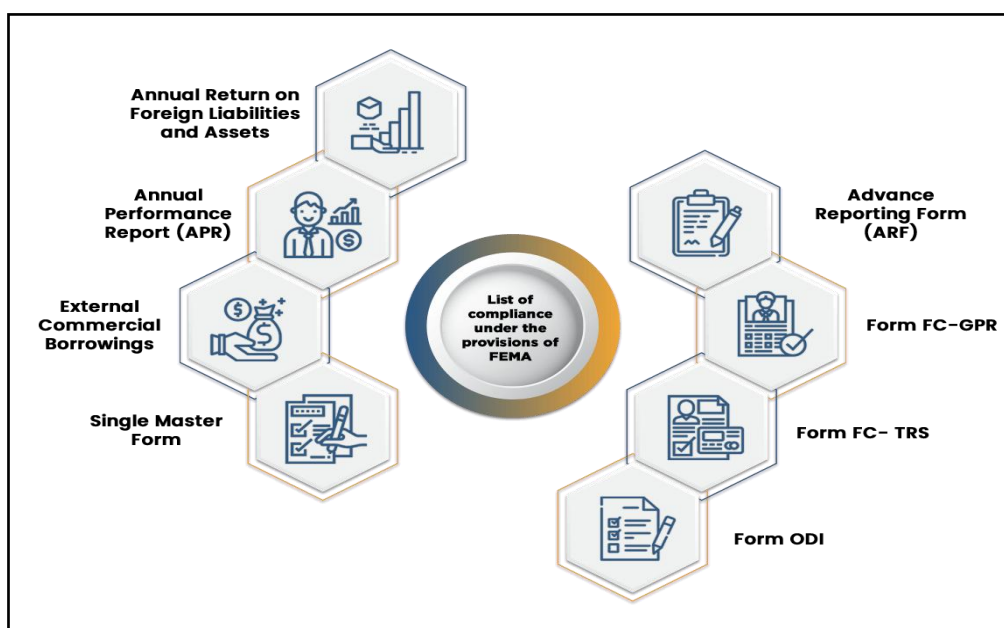
- Hedging is an insurance policy that reduces the effect of risk associated with foreign exchange.
- A foreign or importer borrower is liable for payments for foreign currency.
- This is why they are eager to make sure the INR remains strong to ensure that they will get greater dollars in exchange for the identical amount of rupees each time their foreign currency payment is due.
- A foreign currency lender will need protect his business from the weakening of the rupee.
- The exporter, on contrary, is able to pay in foreign currency that are due at an undetermined date.
- The exporter must make sure that the rupee remains in a weak state so that he receives more INR for every dollar that he pays.
- Exporters will feel satisfied when the INR declines but will have to be prepared for any strengthening of the rupee.
- What is the process of currency hedge?
- There are two primary strategies portfolio managers employ to control risk from foreign currency forward contracts - The portfolio manager can sign the agreement of exchange for a specific amount of money at an unspecified date and rate.
- The amount of money that is exchanged will fluctuate and is essentially neutralize the risk of currency in the assets that are used as the basis.
- Remember that the investment won't gain if fluctuations in currency work for its benefit.
- Options - for the cost of a premium, options allow the owner the ability but not the obligation to swap one currency for another at a fixed rate for a specific duration.
- This minimizes the chance that changes in exchange rates could alter the value of the investment.
- A call spread entails buying an option, with the ability to purchase dollars, and then offset its costs by selling another option.
- Seagull options reduce costs further by the business making a second option sale in conjunction with the call spread.

- This risk could be remediated with futures or options. Let's consider the case of the pair of US-Rupee:
- How can exporters make use of currency derivatives in order to protect his risk of currency fluctuations?
- Consider you are assuming that Raghav Exports Ltd. has an export inward remittance which will be received on September 30th for \$50,000/- Currently it is Rs.64\$.
- This means that this would translate into an inflow to INR 32 lakhs by the 30th of September.
- In the event of a massive FDI inflows into India as well as the FDI inflow, the INR could appreciate to \$ 62 on September 30th.
- That means Raghav exports will only receive Rs.31 thousands in terms of rupee.
- This means that the company must hedge its outward dollar risk.
- The company is selling fifty lots (each amount is \$1,000) in the USD-INR exchange at Rs.64.
- When the date of the inward transfer is 30th September, let's believe that the INR has appreciated to \$ 62.
- If Raghav Exports receives its remittance of \$50,000 or more on September 30 the value that is converted would total 31 lakhs.
- In addition, Raghav has also sold 50 lots of USD-INR futures for Rs.64.
- Because the price is at just 62 dollars, Raghav exported lots will earn an income of Rs.1 lakh on this purchase.
- Another question is what happens if INR declines to Rs.68. In normal times, Raghav Exports would have earned a profit, but due to the hedge, it is locked in at Rs.64 per dollar.
- This could result in a loss of Rs.4 However, the intention is to safeguard your risk of losing money rather than to generate profit.
- Two ways in which this could be overcome.
- You can either keep the USD-INR currency pair using the strictest stop loss, or the hedging is carried out through Put options rather than options so that the risk of the most be controlled to the level of the premium for options.
- How can an importer make use of derivatives of currency to protect his risk with regard to currency?

- An importer or foreign currency borrower will be able to pay the option of paying a dollar on an undetermined date.
- This is why they should make sure that the INR does not decrease excessively, as this will result in them needing more rupees to pay for the same amount in dollars.
- The person who imports or is a foreign currency borrower could hedge their risk by purchasing USD-INR futures.
- If the rupee appreciates then the dollar will appreciate, and the price of USD-INR futures will increase.
- Any losses on the dollar due to a weaker currency is compensated by the long-term futures contracts on the USD-INR.

Topic 37. FOREIGN EXCHANGE MANAGEMENT (OVERSEAS INVESTMENT) RULES 2022

Important for subject: Economy



Indian corporate entities can invest overseas above the limits of the law in important sectors like natural resources and energy Important for subject to the necessary approvals.

Foreign Exchange Management (Overseas Investment) Rules 2022:

- The rules have been made public by the Foreign Exchange Management Act, is to be managed through the Reserve Bank of India (RBI) and will encompass all norms currently in place for foreign investments, as well as the transfer and acquisition of

property that is immovable outside of India.

- It defines Overseas Direct Investment and Overseas Portfolio Investment.
- A Indian company can invest as much as four times their net value in foreign entities.
- It is allowed to invest up to 50 % of its total assets in overseas portfolio investments.
- Any resident of India is able to contribute to the investment equity or OPI according to the limits of the non-restricted Remittance Scheme of RBI.
- Overseas investment that is greater than the limits is permitted within the strategic sectors which includes natural resources, energy, and other areas that can be determined by the government
- Indian company can invest Overseas Direct Investment (ODI) by purchasing shares by subscription, purchase through tender or bidding process through rights and allotments of shares, bonuses, swapping securities and also through merger, demerger amalgamation or other scheme of arrangement.
- Indian Financial institution can create ODI within a foreign company which is engaged directly or indirectly in financial services.
- In the past, Overseas Direct Investment by a non-financial sector Indian entity is not able to invest in foreign companies involved in financial services.
- Non-financial entities are able to invest directly via the automatic route into an entity from another country that is engaged in financial services (except the banking industry and in insurance).
- An individual who is resident of India is able to invest in non-financial businesses without limitation, and to purchase foreign securities by the inheritance of a gifts from someone who lives in India and in the event that the person giving the gift is the country of origin (as as per the rules in the Foreign Contribution (Regulation) Act 2010)
- Director or employee of an office located in India or a branch of an overseas company or an affiliate in India from an offshore company or an Indian entity for which the overseas entity holds directly or indirectly held equity that allows the purchase of shares or other interest under the Employee Equity Ownership Plan or the Employee Benefits Scheme as well as sweat equity equity shares.
- Indian entities and residents are able to create ODI in start-ups that are recognized by law in the country of their host however, only through their internal reserves.

- There is no way for an Indian resident is allowed to invest in foreign companies that are involved in real estate-related business or gambling of any kind or dealing with financial products that are linked with the Indian rupee, without the central bank's approval.
- The new rules propose that items under the approval route will now be permitted by the automatic route: the issuance corporate guarantees for or on behalf the second or subsequent levels of step-down subsidiary (SDS) from an Indian entity previously required approval from the Reserve Bank.
- Disinvestments that involved writing-offs over the limits previously needed prior permission from the Reserve Bank.
- The purchase of equity capital in an entity outside of the country through a deferred payment method is allowed under the automatic route that was previously a part of the approval process.
- Indian company that isn't involved in financial service activities in India can take Overseas Direct Investment (ODI) to a foreign entity within the International Financial Services Centre (IFSC) that is engaged in financial service activities including banking and insurance.
- Any resident of India may contribute towards an investment vehicle or fund set up within IFSC as Overseas portfolio investment.
- It also has added the facility of late submission charges for the filing of various overseas investment reports or documents on the same lines as applicable to Foreign Investment and External Commercial Borrowings related transactions.
- The distinct reporting requirements for winding up or setting up down step-down subsidiaries or altering the shareholding structure of this foreign company have been eliminated.

Topic 38. LABOUR CODES

Important for subject: Economy

Prime Minister Narendra Modi will inaugurate the two-day gathering at Tirupati on Thursday.

- It will discuss a variety of topics: Deliberations details reforms and social security for informal workers, Vision-2047 for the workers Proposed introduction of all four codes for labour.
- The central government is seeking agreement with states in all aspects and is also publishing draft rules from every state and Union Territories.
- Integration of e-Shram portal into social security programs operated by central and state governments in order to provide universal social protection for workers and increase job opportunities for everyone.
- Enhancing medical care and services via ESI (employee State Insurance) hospitals managed by state governments, and Integration with Pradhan Mantri Jan Arogyaya Yojna (PMJAY).
- The major highlights in The New Labour Code Code of Wages 2019 It regulates pay and bonus system in all areas of employment in which any trade, industry or business is taking place.
- It incorporates the following four laws on labour including the Pay of Wages Act, 1936 Minimum Wages Act, 1948 The Act on Payment of Bonus 1965 Equal Remuneration Act, 1976
- It makes universal the provisions of minimum wages and prompt pay in wages for every employee, regardless of their sector or wage limits and aims to guarantee "Right to Sustenance" for each worker.
- It also aims to strengthen the protections provided by law of the minimum wage.
- It is stipulated that workers who earn a monthly wage are paid their wages by 7th month's end while those for a daily basis should receive their salary on the final day of each week and daily bets will receive it in the exact same time.
- This is because the Central Government is empowered to fix the floor wage considering the standard of living of employees.
- It is able to decide to set different floor rates for different geographic areas.

- The minimum wage determined by the state or central governments should be higher than that of the floor.
- Industrial Relations Code 2020 Industrial Employment (Standing Orders) Act 1946 requires employers in any industrial establishment in which 100 or more employees employ to clear outline the terms and conditions of employment as well as the rules of conduct for employees via standing orders/services regulations and to communicate them to employees.
- The new provisions for standing orders will be in effect to every industrial establishment in which 300 or more workers are employed or employed on any day during the preceding 12 months.
- The proposal is that workers in factories have to provide a notice of at minimum 14 days prior to employers in case they wish to strike.
- Any employee of any industrial establishment can strike without giving a notice of 60 days and in the course of any proceedings before the Industrial Tribunal or an Industrial Tribunal or National Industrial Tribunal and sixty days after the end of any such proceeding.
- The new regulations also provide for new conditions for the conduct of legal strikes.
- The period of time for arbitration procedures has been added in the terms and conditions for workers prior to going on a legal strike, as opposed to the only time available for conciliation in the present.
- Additionally, every workplace with 20 or more employees will be able to establish at least one grievance Redressal Committees for resolution of disputes that arise from workers' grievances.
- The code also calls for the funds for reskilling to assist workers who have lost their skills.
- Occupational safety, Health and Working Conditions Code 2020 defines the expectations for employees and employers and sets the safety standards applicable to different industries with a focus on working and health of workers, working hours, work, leave, etc.
- The code also recognizes the rights of workers on contract.
- The code gives employers the option of hiring employees on a fixed-term basis, based on the basis of requirements and without limitation in any industry.

- Additionally, it gives statutory benefits like social security and pay to workers on fixed-term contracts at the same level as the permanent employees.
- The law also stipulates that workers are not permitted working in a workplace for longer than 8 hours per day or more than six days per week.
- If overtime is required the employee must be compensated twice the amount of pay.
- It is applicable to small businesses, that employ up to 10 people.
- The code also promotes gender equality and strengthens the women in the workforce.
- Women will be able to work in any establishment for any type of work.
- They also they are permitted to be employed before 6 am and after 7 pm, with respect to the conditions related on safety, holiday, and working hours.
- First time ever that the labour code recognizes the rights of transgender workers.
- It also requires industrial establishments to have washrooms with showers, toilets as well as lockers for female, male as well as transgender workers.
- Code on Social Security 2020 it replaces nine laws relating to social security, including the Maternity Benefit Act, Employees Provident Fund Act Employees Pension Scheme Employees Compensation Act among other legislation.
- The code will extend social security benefits to those employed in the unorganized sector, which includes gig workers, migrant workers, and platform workers.
- The first time ever, the benefits of social security will be extended to farmers as well.
- The law also cuts down the duration of gratuity from the continuous five-year period by one year to all sorts of employees, such as employees with fixed-term contracts, fixed-term workers and weekly and daily wage employees.
- The code proposes the establishment of a National Social Security Board which will recommend that the government developing suitable plans for various groups of unorganized workers including gig workers and platform workers.
- In addition, aggregators that employ gig workers must contribute 1 -2 percent of their annual revenue to social security, with the contribution amount not exceeding 5 percent of the amount paid by the aggregator to platform and gig workers.

Topic 39. HIGHWAYS SECTOR

Important for subject: Economy

Union Road Transport & Highways Minister Nitin Gadkari stated that the industry of highways in India has enormous potential to drive economic growth.

- Highway development: There is a mix of models in India - BOT (build operate transfer)
- This is the most basic and common PPP model in which the private party is responsible to develop, construct the facility, manage it (during the period of contract) and then transfer that facility over to public sectors.
- The job for the partner from private industry is raise the funds needed for the project and assume the responsibility of building and maintain the project. In exchange the public sector partner is allowed to take revenue from customers.
- The national highway projects leased out by NHAI under the PPP model is an excellent example of this model.
- The TOT (toll operate transfer) models TOT as an asset recycling programme in which the already operating National Highways are given to private companies with long-term agreements.
- The duration of the contract for the TOT model is 20 years during which the concessionaire is required to maintain and run the road.
- Hybrid Annuity Model (also known as HAM Hybrid Annuity model is combination of EPC as well as BOT model. EPC is an abbreviation for Engineering, Procurement, and Construction and is a method of building infrastructure where the government reimburses private firms or players to build roads.
- The government contributes 40 percent of the project's cost during the initial five years, through annually paid installments (annuity).
- The remaining 60 percent is set by the developer.
- It is paid back as a variable amount following the finalization of the project by NHAI who collects the revenues.
- Infrastructure investment trust is an Collective Investment Scheme similar to mutual funds, which permits direct investment from institutional and individual investor in the construction of infrastructure.

- They are created to pool small amounts of funds from a range of shareholders to purchase assets which provide an income over a long period of time.
- A portion of the cash flow will be distributed as dividends to investors.
- The InvITs are Important for subject to regulations governing the SEBI (Infrastructure Investment Trusts) Regulations (2014, version). Other models include Build-Own-Operate (BOO)
- This is a variation of the BOT.
- The different is that ownership of the constructed facility will be held by the private sector in this case.
- A public-sector partner agrees to purchase the services and goods that are produced by the project under the terms of a contract that is mutually approved. Build-Own-Operate-Transfer (BOOT): This is also on the lines of BOT.
- Following the negotiation period the infrastructure asset is transferred either to the government or an operator that is private.
- This method has been employed for the construction of ports and highways.
- Build-Operate-Lease-Transfer (BOLT): In this approach, the government gives a concession to a private entity to build a facility (and possibly design it as well), own the facility, lease the facility to the public sector and then at the end of the lease period transfer the ownership of the facility to the government.
- Lease-Develop-Operate (LDO): the government or the public sector entity retains ownership of the newly created infrastructure facility and receives payments in terms of a lease agreement with the private promoter.
- This is the most common method used when developing airport facilities.
- Rehabilitate-Operate-Transfer (ROT): Under this approach, the governments/local bodies allow private promoters to rehabilitate and operate a facility during a concession period.
- Following the concession period, the project is returned to local bodies or governments.
- DBFO (Design Construction finance and operate) in this model the private company is responsible for the planning, construction, financial and operations of the project throughout the duration of the concession.

Topic 40. IT DEPT ISSUES NOTICE TO ANIL AMBANI FOR HOLDING FUNDS WORTH RS 814 CR IN TWO SWISS BANK ACCOUNTS***Important for subject: Economy***

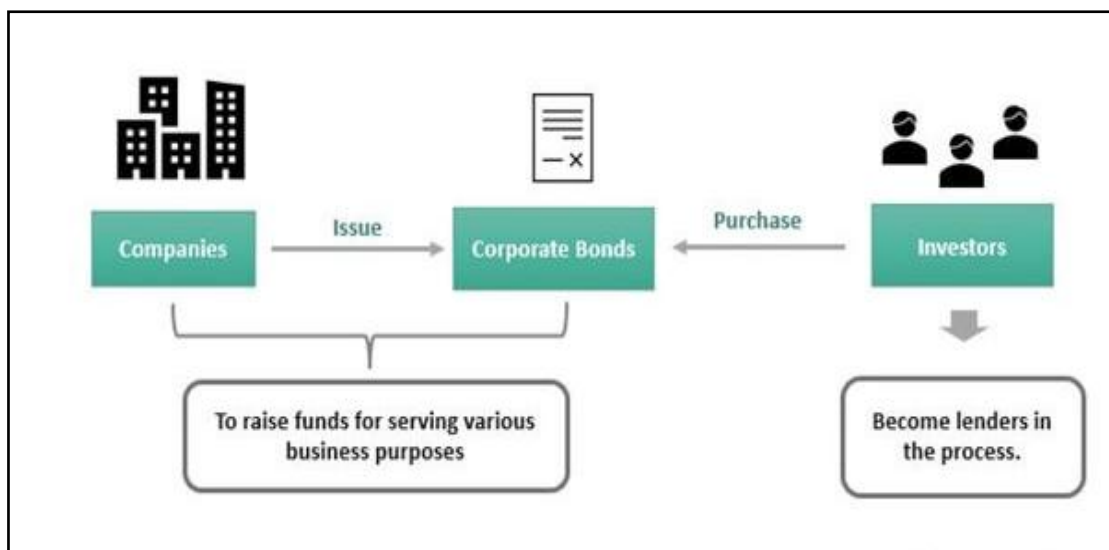
The Income Tax Department has been seeking to prosecute Reliance Group Chairman Anil Ambani under the Black Money Act for allegedly not paying Rs 420 crore in taxes on unreported funds of more than 814 million held on two Swiss bank accounts.

- The department has accused Ambani who is 63, has been charged for "wilful" evasion, saying the 63-year-old "intentionally" did not disclose the details of his foreign bank account and financial interest in the eyes of Indian Tax authorities.
- The department stated that he was at risk of being prosecuted under Articles 50 and 50 of the Black Money (undisclosed foreign income and assets) Imposition of Tax Act of 2015, which allows the maximum punishment as 10 years of imprisonment and the possibility of a fine.
- The black Money (Undisclosed International Income and Assets) and the Imposition of Tax Act, 2015 "Undisclosed foreign income and asset is described as the total amount of income that is not disclosed to an assessor derived from sources outside India or the worth of an undeclared asset that is located outside India.
- It penalizes concealing foreign earnings and provides criminal liability for anyone who tries to avoid taxation in relation to foreign earnings.
- The Act offered a once-in-a-lifetime chance for Indian inhabitants to file unreported foreign earnings and assets.
- The individual concerned had to pay taxes at the rate of 30%, and an equivalent amount as a form of penalty if he was found to have unidentified wealth in the overseas.
- In the event of non-declaration, the penalties included tax-slapping at a rate of 30% , along with a penalty of three times the tax evaded, or 90% of the unreported income or the worth that the property.
- The Act allows for a sentence of imprisonment for 3-10 years in the case of willful evasion.
- The unreported foreign assets and income of an individual will comprise:
- Income, derived from sources that is not located in India and isn't disclosed in tax returns filed

- income, derived from a source outside India and for which no taxes have yet been reported and
- the value of an asset that is not disclosed that is located outside India.
- Administering authority - The Central Board of Direct Taxes and the current tax authorities' hierarchy based on the rules in the Income Tax Act, including the appeals process that is regulated thereunder and are responsible for the taking the law into effect.
- The Act will apply to any person:
- who is a tax-resident who is a tax resident India according to the test under the Income Tax Act, 1961 (ITA);
- that is not a a resident but is not ordinarily a resident';
- who is liable for tax pursuant to the UFIA Bill on unconfirmed foreign assets and income, or any other amount of money.

Topic 41. CORPORATE BOND

Important for subject: Economy



In FY22 the amount raised through the public issuance in corporate bonds was around 2 percent of the amount of money raised via private placements, according to the deputy governor of Reserve Bank of India (RBI)

- Corporate Bonds:
- Corporate Bonds are loans that companies or private firms issues to raise funds through the general public.

- Individuals who buy corporate bonds are known as bondholders. They loan money to the company through purchasing corporate bonds issued by the company.
- If bondholders purchase the bonds issued by a business it makes an official commitment to make regular interest in the amount of principal, based on the rates of corporate bonds.
- Additionally, upon completion, the company is required to repay its principal sum to bondholders.
- Corporate bonds have a myriad of options, but they must meet the fundamental legal obligations, like the payment of interest (not as in bonds with zerocoupon) as well as the repayment of principal.
- Types of Corporate Bonds Zero-coupon Bonds:
- These bonds don't provide regular interest to bondholders , but are available at a discounted price.
- The sole payment made is for the repayment of that principal sum at moment of the maturity date.
- But, bondholders must pay taxes on the interest amount.
- Convertible Bonds:
- Hybrid bonds are those which have the possibility of being changed into stocks, in accordance with the assets in the bond.
- When the bonds are transformed into regular shares, bond holders become shareholders, and the issuer will not be bound to pay any dividends in the future.
- Floating Rate Bonds:
- The floating rate bonds fluctuate in interest rates. They offer various interest payments to holders of the bonds each time.
- The coupon rate is determined on the current interest rates on the market as well as the capability of the company to offer a certain amount of amount of interest to bondholders.
- Fixed-Rate Bonds:
- Fixed-rate corporate bonds, sometimes known as vanilla bonds. They pay bondholders a set amount of interest.
- The rate of coupon is set at the time of the issuance of the bonds, and it does not alter throughout the life of the bonds issued by corporations.

- Investment Grade Bonds:
- They are classified according to their credit rating. These are the corporate bonds with ratings that are higher than BBB and up to the highest score of AAA.
- These bonds come from financially sound businesses and come with a low chance of payment default.
- Junk Corporate Bonds:
- Junk bonds are one type of bond that comes with the chance of default.
- The issuer of these bonds might not have enough liquidity to be able to pay interest or to repay their principal sum to holders of the bonds at the bond's maturity.
- These bonds that are issued by struggling businesses are known as junk bonds. They typically yield higher rates as it is only by the high yield of junk bonds can mitigate the possibility of default.
- Obligations issued by bonds:
- Public Issue When an offering or offer to purchase securities is made to prospective investors to be part of the shareholder family for the company that issued it, it's known as a public offering.
- Public offerings can also be classified into an Initial Public Offering (IPO) which is when an unlisted business makes an issue of securities or offers its securities to sell or both of them for its first public offering to general public this is known as an IPO.
- This allows for the trading and listing of securities of the issuer on the Stock Exchanges.
- Follow on Public Offer (FPO):
- If an already listed company creates a new issue in securities for sale to the general public or makes an offer to sell to the general public It is known as an Following on Public Offer (FPO).
- Private placement:
- Private placement is the process of selling securities to a very tiny number of investors to help in raising capital.
- Private placement investors typically large banks as well as mutual funds insurance companies, pension funds.
- Private placements are different from a public issue where securities are offered to purchase on the market for sale to investors of any kind.

- Private placement of convertible securities or shares from a listed issuer could be classified into two categories:
- Preferential allotment: If an issuer listed on the stock exchange issues shares or convertible securities to a specific set of people in accordance with SEBI guidelines, it's called a preferential allocation.
- The issuer must conform to various requirements that include, among others, disclosures about pricing within the announcement, the lock-in, and so on. In addition, there are the rules set out under the Companies Act.
- The Qualified Institutions Placement (QIP): If a listed issuer offers equity shares or convertible securities in equity shares for qualified buyers of institutions with the exception of the SEBI guidelines, it's known as the QIP.
- Rights Issue:
 - If a securities issue is issued by an issuer to shareholders who are in existence as of the date specified by issuer (i.e. record date) this is referred to as an rights issue.
 - The rights are granted in a certain proportion to the amount of securities in possession at the time of the recording date.
- Bonus Issue:
 - When an issuer announces an offer of its securities current shareholders on a recorded date, without receiving any compensation from them, it's known as an issue of bonus.
 - They are funded from the company's reserve account, which is free, (or share premium) account, in an exact proportion to the number of shares that are held at a particular date.

Topic 42. 135AA OF THE CUSTOMS ACT***Important for subject: Economy***

The Central Board of Indirect Taxes and Customs (CBIC) has issued a penalty of Rs.1 lakh for the initial offence in subsection 135AA under the Customs Act.

- The Union Budget 2022 included section 135AA, which protects the information on export and import provided to Customs by exporters or importers in their declarations. The section prohibits publication of this information, subject to the provisions of law as an offense in the Customs Act.

135AA of the Customs Act:

- The Union budget for 2022 included section 135AA to the customs Act. The section bans the unauthorized publication of information about import-export transactions.
- Publication is the release of information about the classification or the quantity of goods that are entered to export from India and import to India or the specifics of the importer or exporter of these products
- A person can be punished by six months in prison or an amount of fine that could be increased to Rs. 50,000 or both for non-authorized publication of data on import and export.
- The penalty could increase by 100 percent for each subsequent violation.

Central Board of Indirect Taxes & Customs (CBIC)?

- The Central Board of Indirect Taxes is a part of the Department of Revenue, Finance Ministry, Government of India.
- The CBIC was earlier was known as CBEC, which was formerly known as the Central Board of Excise and Customs (CBEC).
- It formulates policies of subjects relating to the collection and levy of central excise duties customs central goods and services tax , and IGT the administration of the taxes they collect, the prevention of smuggling, and also the use of drugs to the extent that it is required.
- CBIC is the governing authority for its subordinate agencies which include the Central Excise and Central GST Commissionerates, Custom Houses and the Central Revenues Control Laboratory.
- CBIC is a legal organization created by the Central Boards of Revenue Act 1963.
- CBIC was created in 1964 after it was formed when the Central Board of Revenue

was divided into two entities: Central Board of Direct Taxes (CBDT) and the Central Board of Excise and Customs that was changed to CBIC in 2018. Central Board of Indirect Taxes and Customs in the year 2018.

- The Central Board of Revenue was created in 1924 under the Central Board of Revenue Act 1924, as the highest authority of the Income Tax Department.
- CBIC chairperson is the CBIC Chairman is also the most senior Indian Revenue Service (IRS - Customs & Indirect Taxes) official in India.
- CBIC Functions CBIC administers indirect taxes in India like tax on services and goods and customs.
- Tax collection for Goods and Services Tax and earlier Central Excise Duty and Service Tax.
- Collection of Customs Duty on Land Customs Stations, Inland Container Depots (ICDs), Special Economic Zones (SEZs) & Container Freight Stations (CFSs).
- Collection of Customs Duty on International Airports, Seaports, Custom Houses, International Air Cargo Stations & International ICDs.
- Prevention of Smuggling on International Airports & Sea.
- The prevention of smuggling through Land Customs Station & Border Checkpoints.

Topic 43. INDIA SAID TO PLAN SOPS FOR RUPEE USE IN RUSSIA TRADE

Important for subject: Economy

India might offer incentives to exporters who settle trades with rupees in order to increase the acceptance of the currency and boost exports of goods to Russia which have dropped due to sanctions from the west according to sources from the government and industry.

- This move is designed to help boost Russian trade following an announcement by the Reserve Bank of India (RBI) introduced the mechanism for international trade settlements that use the rupee last month.
- Indian firms are already converting euros and dollars to Asian currencies in order to settle trades and keep out Western sanctions against Russia following its invasion into Ukraine.
- One of the most probable incentives that would be offered would be to apply an existing program to trade with fully convertible currencies like the euro and the dollar to the rupee that can only be converted partially according to three sources.

- Under the current programme, Indian exporters receive rebates on a certain percentage of taxes and customs duties that accumulate throughout the production process for a good.
- The new incentive will be applied to products that are exported using the rupee as currency, according to the sources stated that convertibility of currency is when the any currency in a country is able to be converted to foreign exchange at a market-determined rate of exchange which is, the rate of exchange as determined by the demand for and supply of currency.
- For instance, the conversion of rupee is a benefit for anyone who has foreign exchange (e.g. US dollars, Pound Sterlings etc.) can be converted to rupees according to the market-determined rate of exchange.
- Rupee can be converted on both the current account as well as on the capital account.

Rupee convertibility and the benefits:

- Current account convertibility to the rupee Capital Account Convertibility of the Rupee Convertibility of the current account is when foreign currency (e.g. the Pound Sterling currency, U.S. Dollar etc) obtained to export goods or services is able to be changed into Indian rupees and vice versa in cases imports.
- The Capital Account Convertibility (CAC) refers to the ability to transform local financial assets into foreign financial assets, at the exchange rate determined by market forces.
- Also known as Capital asset liberation' other countries, it entails freedom of exchange for currencies at lower rates as well as unlimited mobility of capital. India is currently experiencing partially convertibility to capital accounts.

Promotion of exports

- The market rate is generally higher than the officially regulated exchange rate.
- It means that from exports, exporters can earn more rupees in exchange for foreign currency.
- This will aid in increasing exports. Unlimited movement of Capital: Capital account convertibility permits free movement of Capital to countries from foreign investors.
- It permits foreign exchange that is brought in as Capital to convert into rupees with the market rate which is very happy.
- It allows foreign investors to move into and out of an economy.

- This allows domestic businesses to borrow funds from overseas.

Encourages substitution of imports:

- Imports are expensive due to the currency's convertibility.
- This discourages imports, and increases the likelihood of substitution

Investment opportunities overseas without difficulty:

- Convertibility of capital accounts allows people of a nation to invest in foreign markets by quickly converting their currency into foreign exchange, at the rates set by the market.
- This allows prospective investors from the country to purchase the assets and hold them overseas.

Incentive to remittances from overseas:

- In the past, NRIs used to send money in a way that was illegal to India for example, Hawala gold, money, etc. Since the lifting of any restrictions, NRIs can easily remit money to India.
- It will aid in improving Payroll balance

Better access to global markets for financial services:

- It is easy to invest in the debt and equity markets of other economies, in addition to lower costs of capital

Reduction in Malpractices:

- The blunders of under-invoicing exports might not occur since the rupee is fully convertible, and will be able to get the all the value from their exports

Self-balancing mechanism:

- Another benefit of currency convertibility is the self-balancing function.
- When the balance of payment is at a deficit because of an excessively high exchange rates, or under the condition of currency convertibility, the nation's currency decreases that boosts exports, reducing their costs on one hand, and hinders imports by increasing their costs in the opposite.

Tarapore Committee on capital account convertibility

- A committee for the possibility of converting capital accounts was set up in the Reserve Bank of India (RBI) under the leadership of the former RBI vice-governor S.S. Tarapore to "lay the road map" towards convertibility of capital accounts.
- In 1997, the Tarapore Committee had indicated the prerequisites to be met for the

Convertibility of Capital Account Convertibility.

- The three essential conditions were fiscal consolidation, the inflation target set by law and a strengthening in the system of finance.

Topic 44. NINE NEW FORMS

Important for subject: Economy

The Corporate Affairs Ministry (MCA) on Wednesday, announced the next major step to the rollout of version 3.0 of MCA21 the first India-based mission mode e-governance program.

- It's decided to start on September 1st to begin to onboard corporates who are on Version 2.0 sources claimed. MCA has identified up to nine forms for companies -- DIR3-KYC Web, DIR3-KYC Eform DPT-3, DPT-4and CHG-1 ChG-4, CHG-6 ChG-8 and CHG-9 -- which will be in use starting September 1 and be the first form to launch via the MCA21 portal.
- "In light of the planned launch of 9 forms for companies in version 3 LLP filings on the MCA21 V-3 will be unavailable starting on 28th August (00.00 AM) through August 28 (23.59 hours).
- But, the MCA21 V-2 portal for filings of companies will be available," MCA said on Wednesday.
- MCA has also stated that the remaining corporate forms and modules such as adjudication and compliance management systems, and adjudication are scheduled to be fully implemented in the next calendar year.
- MCA has begun rolling out the MCA21 version 3.0 in stages to minimize disruptions in regulatory filings module has been implemented.
- 3.0 module has been used in limited liability partnership (LLPs).
- MCA 21 provides the web-based site of MCA that has made all the information about the company available to all stakeholders as well as the general public.
- The first time it was launched was the year 2006.
- L&T Infotech has a contract to operate and maintain MCA21 V3.0.

Topic 45. CONVERTIBLE VS NON-CONVERTIBLE DEBENTURES***Important for subject: Economy***

On August 23, Adani Group companies said they had bought shares in NDTV indirectly through the purchase of VCPL that had convertible debt (warrants that allow for an exchange of debt into equity) in RRPR which in turn holds 29.18 percent of NDTV Convertible and Non-Convertible Debentures

- Convertible debentures can be transformed into equity of the company, and also have an interest rate that is low.
- The maturity value of convertible debentures is based on the current stock price for the firm at the moment, meaning an increase in the price of stock will provide higher returns, while the stock's price is low and will result in low returns.
- Non-convertible debentures can't be transformed into shares in the equity of the business and have a higher rate of interest.
- The price of non-convertible bonds is fixed, and they therefore have fixed rates of return at maturity.

Topic 46. COMPETITIVENESS ROADMAP FOR INDIA@100***Important for subject: Economy***

The event to launch the Competitiveness Roadmap is held on Indira Gandhi National Center for the Arts (IGNCA), Janpath, New Delhi

- The Competitiveness Roadmap for India@100 is based upon the framework that was developed by professor Michael E. Porter.
- India@100 is a plan to guide our nation's progress towards its centennial, and outlines the steps necessary to realise the immense potential and massive ambitions you've laid out for our country.
- The roadmap is intended to guide and guide India to be a more prosperous nation in 2047.
- It provides policy objectives as well as principles and strategies to help drive India's economy to the direction of resilience and sustainability which is rooted in the social development process and prosperity shared by all.
- The roadmap provides an integrated set of priorities for initiatives that are based on an in-depth review of India's economy and competitive advantages.

- In light of the numerous changes your government has made in recent years, this discusses what actions India should prioritize in the present and how it should structure itself to carry out these reforms efficiently.
- The document also states that the competitiveness concept is the foundation of India's social and economic policy in order to propel India's growth further and sustain it in the long run.

Topic 47. INDIA TREND OF GROWTH DATA ORIENTED

Important for subject: Economy

Indian growth rates are accelerating:

- Actual increase rate British Raj (1900-01 to 1946-7) 0.9% First five year plan from 1950 to 1956 0.9 1.1% First five year plan, 1951 to 1956 2.1 3.6% 3.6 21% Second Plan- 1956 to 1961 4.5 4.2% 4.2 Third Plan- 1961 to 1966 5.6 2.4% 2.4 4 % Fourth Plan from 1966 to 1971 5.7 4.3% 3.3 5th Plan % 1971 until 1978 4.4 4.8% 4.8 Sixth Plan from 1978 to 1983 5.2 5.7% 5.7 7.2% Seventh Plan from 1983 to 1990 7.5% Seventh Plan- 1983 to 1990 6.0 8.6% Eighth Plan- 1990 to 1997 5.6 6.8% 6.8 9 % Ninth Plan- 1997 to 2002 6.5 7.6% Ninth Plan-1997 to 2002 6.5 5.6 10th Plan-2002 through 2007 7.6 7 2012 9.8% 8% Twelfth Plan from 2012 until 2017 7.6% 7

Indien's Planning Strategy- an overview:

- When it comes to planning for development the term "strategic" refers to an essential long-term policy to accomplish a set of goals.

Harrod Domar Growth Model:

- Created by the economist K.N. Raj the initial five-year plan was inspired by the Harrod-Domar method that suggested that growth was contingent on two factors.
- First, a high amount of savings, as it allowed for greater investment. Second, a low ratio of capital output which allowed for efficiency in investment and a higher growth rate.
- The Five-Year Plans designed to make India self-sufficient, enabling industrial growth, and made sure that development extended beyond urban areas and extended to the interior regions of the country.
- The plan set a goal of 2.1 percent GDP growth for the fiscal year but it was able to achieve an increase of 3.6 per cent in that year.

- The first five-year program that was based on the Harrod Domar model suggested that production needed capital.
- capital could be built up through investments. The faster it accumulates, the more the rate of growth.

Mahalanobis Growth Strategy:

- Although the First Five-Year Plan focused on energy and agriculture The Second Five-Year Plan focused on the growth in the sector public, as well as rapid industrialisation.
- The plan was drafted by a statistician P.C. Mahalanobis The Second Plan was also called the Mahalanobis Plan.
- Mahalanobis method of development was formulated through Jawahar the vision of Lal Nehru. P.C. Mahalanobis was the chief architect.

It was focused on the following aspects:

- Rapid Industrialisation- Developing fundamental industries and industries that create machines to build the machinery necessary for development.
- Import substitution.
- Barriers to protect against foreign competition, to allow Indian businesses to develop domestically manufactured alternatives to imported goods , and also to decrease the dependence of India of foreign capital.
- Mixed economy, with a strong tendency towards the public sector. A significant public sector that is active in crucial economic areas, such as nuclear energy and rail transportation.
- A vibrant small-scale sector that is driving the production of consumer goods for sustainable growth that is equitable and dispersed, and creating entrepreneurs.

Wage Good Model:

- An alternative model for development was devised in the work of Vakil along with Brahmananda.
- Profs. Vakil and Brahmananda changed and adapted the classic theories of income growth and employment within the present context of emerging countries, which are characterized by hidden unemployment.
- Contrary to Mahalanobi's model that emphasized the significance of fixed capital, Vakil and Brahmananda put emphasis on wage goods, or the liquid capital they called

it controlling the growth of income and employment.

- In line with their emphasis on liquid capital, in their plan, they suggested an approach to development that placed the greatest importance on the industries of wage goods, particularly the agricultural sector in the allocating investment resources.
- The Seventh Plan marks an abrupt departure from previous strategies for planning and has laid out an entirely new strategy for the long-term.
- It reversed the power in the role of public services, and caused the privatisation of industry.
- It emphasized the importance of growing agricultural production through the adopting new technologies.
- The liberalisation of external sectors in the hope of enhancing productivity in the production industry.
- The administrative procedures were modified from facilitation to regulatory processes.
- It was actually a variation that is referred to by the name of "Agricultural Development led Growth" Strategy, or" the "Wage Good model" earlier promoted by Vakil and Brahmananda.
- The income of the national of India has registered a 5.5 percent growth per year in the 1980s.
- However, the method that allowed the country to ramp up its growth in the economy during the 1980s led to the economy moving into the recession of 1990-91.

Causes:

- Massive public spending leading to huge deficits in the fiscal budget. inflation Balance of Payments crisis-Gulf Crisis boosted prices for crude oil and increased the cost of imports

The New Development Strategy:

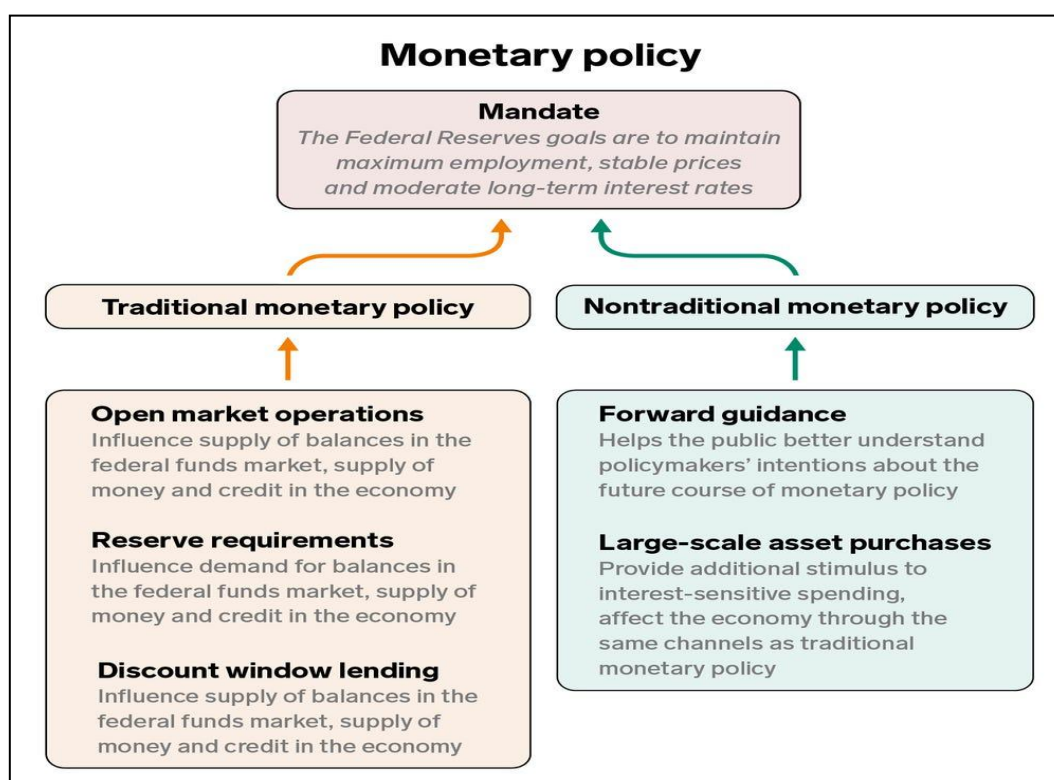
- The introduction of economic reforms initiated by the government in the year 1991 was motivated by the RaoMan Mohan model, which was modeled by Mr. Narasimha Rao, the Premier Minister of 1991, and Finance Minister Dr. Man Mohan Singh.
- Its core is found within the New Industrial * Policy 1991 and extends over it as well.
- The Model has the following contents Dismantle, selectively controls and permits in order to permit private sector to invest liberally- Liberalisation Open up the economy

and create competition for PSEs- for better productivity and profitability-Privatisation
External sector liberalization in order to integrate the Indian economy with the global economy to benefit from the resource inflows and competition-Globalization is the "export led growth strategy" Reorient the role of the State in economic management.

- The State needs to refocus its efforts on infrastructural and social development in particular, inclusive planning as well as sustainable growth: 11th five year Plan is the first to be was a focus on inclusive growth. The plan was drafted by C. Rangarajan.
- The theme of the conference included "rapid and more inclusive growth".
- The Twelfth Plan relies on an wide range of government programs that cover a broad range of industries, to ensure sustainable and inclusive growth.
- This includes health, education drinking water and sanitation as well as the construction of vital infrastructure both in urban and rural areas, as well as programs of livelihood assistance for less privileged and weaker groups of our society.
- The overall goal of the strategy is to reach the goal of 'Fast Sustainable, Sustainable, and More inclusive growth'.

Topic 48. FED MONETARY POLICY

Important for subject: Economy



It is expected that the US central bank is expected to maintain the tightening of its monetary policy the time it takes to get inflation closer to the long-term target of 2 percent since the fundamental PCE index, which is used to measure inflation by the Fed to gauge inflation remains at a record-setting three-decade high of 4.6 percent.

Fed Reserve and the Monetary Policy:

- The policy of the Federal Reserve throughout the United States comprises the Federal Reserve's actions and communication to encourage maximum employment steady prices, maximum employment, and moderate interest rates over the long term.
- These are the economic goals that Congress has directed to the Federal Reserve to pursue.
- The Federal Reserve Act of 1913 established to the Federal Reserve responsibility for setting the policy for monetary transactions.
- A Federal Open Market Committee FOMC's main way of adjusting the monetary policy stance is to alter its goal for the Federal Funds Rate.
- The Federal Funds rate is the rate at which banks loan balances from their Federal Reserve to other depository institutions for overnight.
- The FOMC is able to affect the federal funds rate and consequently the cost of interbank loans for short-term periods--by altering the interest rate the Fed is able to pay on reserve balances banks keep with the Fed.
- A bank is not likely to lend money to another banking institution (or for any customers) at a less than the rate at which the bank earns on reserve balances at the Fed.
- How do changes in the rate of federal funding impact the economy in general?
- Changes in the Federal Funds Rate are rapidly reflected in interest rates the banks as well as other lending institutions demand on loans that are short-term to households, one another as well as non-financial business and government agencies.
- The returns on commercial paper as well as U.S. Treasury bills--which are securities that are issued by private firms and the federal government in order to raise funds, are in line with the federal funds rate.
- The interest rates on longer-term loans are based on expectations about how the monetary policy as well as the overall economy will change during the course of the loan not just the current levels that the Federal Funds Rate is at.

- Variations in interest rates in the United States also have a bearing on the attractiveness of U.S. bonds and related U.S. assets compared with similar investments in other countries. Changes in the relative attractiveness of U.S. assets will move exchange rates and affect the dollar value of corresponding foreign-currency-denominated assets (appreciation of dollar). Have implications for a wide range of spending decisions made by households and businesses.
- The FOMC loosens its monetary policy, which results in lower interest rates for consumer loans.
- This leads to more purchases of items and services as well as investment, which in turn increases the amount of employment.
- It is also known as the PCE Price Index (PCEPI). This is called "the PCE inflation rate, PCE Price Deflator, and the Implicit Price Index for Personal Expenditures (IPD to PCE) according to the Bureau of Economic Analysis (BEA) and the Chain-type Price Index of Personal Expenditures (CTPIPCE) according to the Federal Open Market Committee (FOMC). It is a comprehensive indicator of the average rise in prices of all personal consumption.
- It is compared to the 2012 baseline of 100.
- The measure that is less volatile than makes up this PCE price index refers to the primary PCE (CPCE) price index.
- This excludes most volatile, seasonal energy and food prices.
- Comparatively to the main United States Consumer Price Index (CPI) that uses the same set of weights on expenditures for a number of years.
- This index is based on a Fisher Price Index, which relies on data about expenditure from the current and the previous period.
- The price index method is based on the assumption that consumers have taken into account variations in prices relative to each other.
- In other words, they've substituted items whose prices are rising to those whose prices are falling or stable.

Topic 49. SUPREME COURT MOOTS VERDICT TO HELP UNMARRIED WOMEN GAIN 'BODILY AUTONOMY' UNDER MTP ACT

Important for subject: Polity

The Supreme Court on Friday said it might loosen the control of an old 51-year-old law that prohibits unmarried women from terminating their pregnancies at least 24 weeks old.

- The court said the ban was "manifestly ineffective and in violation of women's rights to bodily dignity and autonomy".
- The Medical Termination of Pregnancy Act of 1971 and its Rules of 2003 prohibit unmarried women who are 20 and 24 weeks pregnant to terminate their pregnancy with the assistance of licensed medical professionals.

Important Features in the MTP Amendment Act, 2021:

- One category- In 2021 Parliament modified in 1971 the MTP law to permit an abortion on the advice of a doctor in pregnancies of up to 20 weeks.
- 2. Category - For births that last between 20-24 weeks new law requires the approval of two physicians.
- category 3-Opinion of the Medical board at the state level is necessary in order for a pregnancy to be stopped within 24 weeks in the case of significant foetal abnormalities.
- In the second category for the second category, the Rules defined seven types of women that would be able to seek termination.
- Section 3B of the Rules that are enacted in the MTP Act reads: "The women in the following categories shall be considered to be eligible for termination of pregnancy in accordance with the clause (b) in subsection (2)
- The section 3 in the Act is applicable to a time period of between 24 and 28 weeks, which includes victims of sexual assault, minors who have been raped or sexually assaulted or change in marital status in the course of pregnant (widowhood as well as divorce) or women suffering from physical disabilities, major disabilities, according to the criteria set out in the Rights of Persons with Disabilities Act in 2016. Mentally sick women, which includes mental retardation
- The foetal malformation has a significant risk of being incompatible with life or if the child is born, it could be affected by such mental or physical abnormalities that cause

it to be severely handicapped and pregnant women in humanitarian settings or in disaster or emergency situations, as they may declare by government.

Topic 50. NO PRIVILEGE TO MPS FROM CRIMINAL PROCEEDINGS DURING SESSION: NAIDU

Important for subject: Polity

Rajya Sabha Chairman M. Venkaiah Naidu stated on Friday that members have the wrong idea that they are granted an exemption from the actions of investigating agencies, even though the session is still in progress.

- He claimed he's looked over all precedents and according to Article in 105, of the Constitution Members of Parliament have certain privileges that allow them to be able to carry out their duties as members of parliament without any difficulty.
- One of the advantages is that a member of Parliament is not liable to arrest in civil cases for 40 days prior to the beginning of the meeting or Committee meeting, and for 40 days after.
- This privilege is already in place into Section 135A in the Civil Procedure Code, 1908.
- In criminal matters the Members of Parliament do not stand in a position to be treated differently from the average citizen.
- This means that a member of Parliament is not entitled to any immunity against being arrested in a criminal proceeding in the course of the session or in any other way.
- There have been many of rulings issued by Presiding Officers.
- A good example is a ruling made in the year the year 1966 was made in 1966 by the Dr. Zakir Hussain. It was stated that "Members of Parliament enjoy certain privileges in order they are able to perform their tasks.
- One of these privileges is liberty from arrest during the time that parliament is sitting. The right to be free from arrest is restricted to civil proceedings and is not allowed to influence the administration of criminal cases."
- Anandan Nambiar case, the Supreme Court held that the real constitutional position is that, as in the case of the legal order of detention concerns, the Member of Parliament is able to be granted any special status other than that of an average citizen and is just as susceptible to being arrested and detained in the course of the Session.
- The Supreme Court in a recent case, State of Kerala Vs. K. Ajith and Others, held the

fact that "privileges and immunities do not serve as ways to be able to get exempted from the laws that governs the country, especially as in this instance the criminal law that regulates the conduct of all citizens."

- Article 105 : Powers and privileges and other privileges. in the houses of parliament, and of the committees and members of them.
- Importantly, in accordance with the Constitutional provisions as well as to regulations and rules governing the procedures of Parliament, there will be the right to speak freely in the Parliament.
- A member of Parliament is not be held accountable to any action at any tribunal regarding anything he has said or voted on by his Parliament or on any committee of it or any committee thereof, and no one is responsible for the publication, by or with the authority of any House of Parliament of any document, paper, vote or other proceedings.
- Other than that other respects, the power, privileges, and privileges that the respective House of Parliament as well as of its members as well as the committees in each House shall be as which may from time to time be determined by Parliament through law. The powers, privileges and immunities of each House until they are defined they shall be the same for the House as well as its committees and members prior to the entry into force of section 15.15 of the Constitution (Forty-fourth Amendment) Act 1978.
- Clauses (1), (2) and (3) are applicable for persons who, as a result of this Constitution are entitled to participate in, or other than that, to participate in the proceedings of the House of Parliament or any committee thereof, in the same way as they are applicable to Parliamentarians.

Topic 51. THE FAMILY COURTS (AMENDMENT) BILL 2022 AND WHY IT RELATES TO ONLY TWO STATES

Important for subject: Polity

The Constitutional Family Courts (Amendment) Bill 2022, was passed to allow states to establish family courts to facilitate reconciliation and ensure that any the family law disputes and marriage are swiftly resolved.

- Centres must inform when the Act to enter into force in a state where such courts have been established. the Family Courts Act, 1984 and its regulations

- The Family Courts Act was enacted in 1984 to allow the creation of family courts in States to settle disagreements relating to family and marriage.
- According to the Act it is stipulated that the setting up for family courts as well as the functioning of them is the responsibility of the state governments in conjunction with their respective high courts.
- The Act also provides for the procedure for the appointment of judges to family courts.
- 7 Schedule: Concurrent List No 5. Divorce and marriage; minors and infants as well as adoption; wills; succession and intestacy joint family and partition as well as all issues in respect of which the parties in judicial proceedings had been immediately prior to the date of the adoption of this Constitution important for the purposes of their individual law.

Topic 52. OFFICE OF COAL CONTROLLER (EARLIER COAL COMMISSIONER)

Important for subject: Polity

It was founded in 1916, and is considered to be one of the oldest offices of the Indian Coal sector.

- The main reason behind the creation of this office was to ensure the government's control to meet the demand for coal during the First World War.
- A severe shortage of coal forced the publication of Colliery Control Order, 1944 to ensure effective control over the production, distribution, and pricing of coal.
- In 1996, the pricing and distribution of coal were regulated. therefore Colliery Control Rules, 2004 governs it Colliery Control Rules, 2004 which governs its functions. acts as an appellate authority in the event of disputes between consumers and the owner that arises out of the declaration of the size and grade of coal.
- Quality control with regard to the maintenance of coal's quality. To allow the permission to open or re-open a coal seams, coal mines, or a seam, or to divide the mine.
- Coal Controller has been made the official authority on statistics with respect to the coal and lignite statistical data.
- The responsibility was assigned to carry the Annual Coal & Lignite survey and the publication of Provisional Coal Statistics and Coal Directory of India.

- Assessment and payment of the excise duty imposed on all coal used for production and sent out.
- Under the Coal Mines (Conservation & Development) Act 1974 as well as Coal Mines (Conservation and Development) Amendment Rules, 2011 providing financial assistance to coal mine operators to ensure the preservation of the coal resource(the staking of UG mines)
- Research, Infrastructure development, and Protective works such as blanketing with incombustible materials and CO2 flushing, filling sections that are subsided, cutting trenches and other.

Topic 53. MINISTRY OF DEVELOPMENT OF NORTH EASTERN REGION

Important for subject: Polity

Minister of Development of the North Eastern Region is an official Government of India ministry, founded in September 2001.

- It serves as the central Department within the Central Government to deal with issues related to the socioeconomic growth of eight states of Northeast India: Arunachal Pradesh, Assam, Manipur, Meghalaya, Mizoram, Nagaland, Tripura and Sikkim.
- It serves to act as an intermediary between Central Ministries/ Departments and the State Governments of the North Eastern Region for the purpose of economic development , including the removal of infrastructure bottlenecks, the provision of essential services, and creating an environment that encourages private investment, and to eliminate obstacles to a lasting tranquility and safety within the North Eastern Region.
- The functions in the DoNER. Non Lapsible Central Pool of Resources (NLCPR) Collaboration in conjunction with Central Ministries and the State Governors in states in the NE states.
- Capacity Building Advocacy and Publicity International Cooperation Enterprises of the Department
- The ministry operates the following institutions operating under its aegis: North Eastern Development Finance Corporation Ltd.
- (NEDFi) North Eastern Regional Agricultural Marketing Corporation Limited (NERAMAC)

- It is the Sikkim Mining Corporation Limited (SMC) North Eastern Handlooms and Handicrafts Development Corporation (NEHHDC)

Topic 54. LOKADALATS

Important for subject: Polity

More than 74 lakh outstanding and pre-litigation matters, many of which are in the huge backlog that was created from the outbreak, resolved all over the country in the 3rd National Lok Adalat.

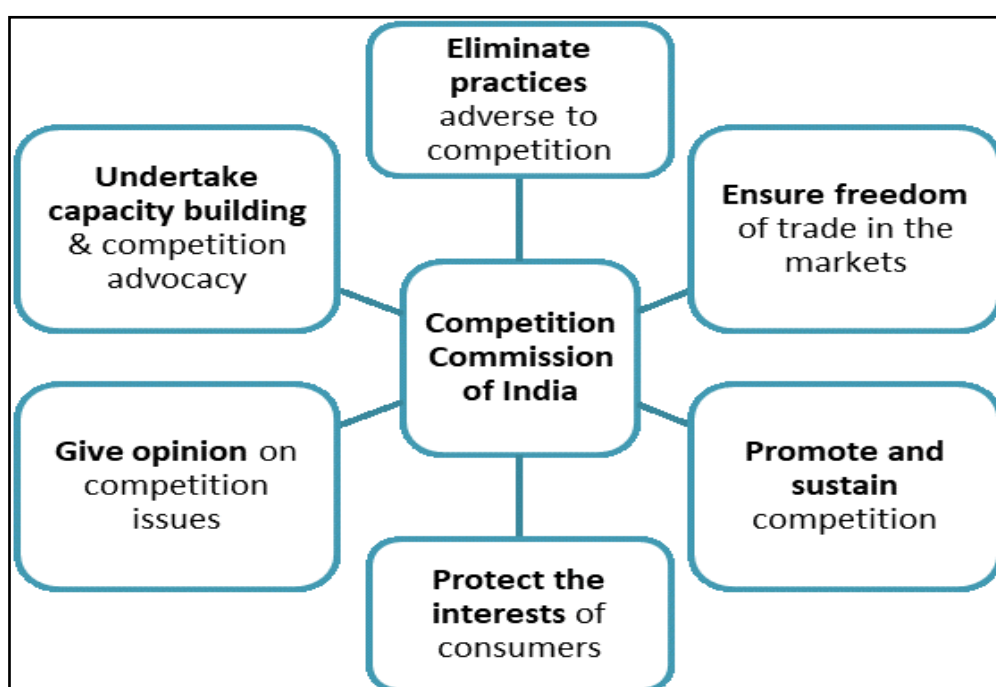
- In a departure from the norm legal officials under Chief Justice of India, Justice U.U. Lalit who is acting as the chairman-executive of National Legal Services Authority (NALSA), used technology-based platforms to conduct 'digital lokadalat' operations in Maharashtra as well as Rajasthan.
- **The concept:** Lok Adalat is one of the dispute resolution mechanism, it's an avenue where disputes or cases which are pending in the courts of law or in the pre-litigation stage can be settled or negotiated in a peaceful manner.
- The Lok Adalats are formed to fulfill the promise made in the preamble to the Indian Constitution- securing Justice both economic, social and political for every citizen of India.
- Constitutional basis The Constitutional basis is Article 39A.
- Constitution allows for legal assistance to the most disadvantaged and marginalized sections of society, and promotes justice on the basis of equal opportunities.
- Article 14 of the Constitution also make it mandatory for the state to ensure an equality of law.
- **Statutory requirements:** Under the Legislative Services Authorities Act of 1987, Lok Adalats are designated a statutory entity.
- The verdict of the Lok Adalats is considered to be a decision of a civil tribunal and is binding and final for all parties.
- **A no-refusal:** It isn't a option to appeal the decision of Lok Adalat.
- But, they can choose to begin litigation by contacting the appropriate court through filing a lawsuit following the prescribed procedure to exercise their rights to litigate.
- Court fee: There's no fee for court for a case submitted to an Lok Adalat.
- **Note:** If an issue that is pending before the court of law is sent by the Lok Adalat and

is settled later, the court fee paid by the court on the petition or complaint is also returned for the respective parties.

- **Type of Cases to be referred for Lok Adalat:** All matter that is pending before any court.
- Any dispute that has not been filed before any court is likely to be heard by the court.
- If the matter is related to an offence that is not applicable to compounding under the law will not be decided within Lok Adalat.

Topic 55. COMPETITION COMMISSION OF INDIA (CCI)

Important for subject: Polity



The Competition Commission of India (CCI) has approved (a) the acquisition of a majority stake of Optimus Drugs Private Limited (ODPL) by Sekhmet Pharmaventures Private Limited (Sekhmet).

- Competition Commission of India is a statutory body that is responsible for enforcement of the goals in the Competition Act, 2002.
- CCI was created through CCI was established by the Central Government with effect from 14th October 2003. However, it was fully operational on the 20th of May, 2009.
- **Composition:** A Chairperson, and 6 members who are selected by the Central Government.
- **Formation of CCI:**

- The CCI was created under the rules of the Competition Act of 2002
- The Competition Act, 2007, was passed following the amendment of Competition Act, 2002, which led to the creation of CCI along with the Competition Appellate Tribunal.
- The government changed the Competition Appellate Tribunal (COMPAT) by the National Company Law Appellate Tribunal (NCLAT) in 2017.
- Function of CCI: To stop practices that negatively impact competition, encourage the development of competition and safeguard the rights of consumers and guarantee freedom of trade on India's markets.

Topic 56. ESSENTIAL COMMODITIES ACT

Important for subject: Polity

To rein in tur dal price surge, Centre invokes Essential Commodities Act

- Essential Commodities Act the ECA was passed in 1955.
- The system has been utilized in the Government to regulate the supply as well as distribution range of goods it considers essential to provide them to the consumers at reasonable costs.
- The items listed under the Act includes fertilisers, drugs pulses, edible oils and pulses and petroleum and petroleum-related products.
- The Centre may include new products at any time the need arises. They can also eliminate them from the list when the situation is improved.
- In the Act The government is allowed to also set an amount that is the retail maximum cost (MRP) for any product packaged in a manner that it declares to be an "essential product".
- How does it work?
- If the Centre determines that a particular product is out of stock and the price is rising the Centre can inform of its stock-holding limitations for a certain time.
- The States take action on this announcement to define the limits and then take steps to ensure that they are followed.
- Anybody who is trading or dealing with commodities, be it retailers, wholesalers, or even importers are impeded from stockpiling more than the limit of.
- A state may decide, however, to not impose any limitations.

- Once it is done the traders must immediately sell to the market any stock that is not in the quantity that was mandated.

Topic 57. JUSTICE U.U. LALIT APPOINTED 49TH CHIEF JUSTICE OF INDIA

Important for subject: Polity

Justice Uday Umesh Lalit was appointed the 49th Chief Justice of India (CJI) on Wednesday after President Droupadi Murmu signed his warrant of appointment.

- In exercise of the powers conferred by clause (2) of Article 124 of the Constitution of India, the President is pleased to appoint Shri Justice Uday Umesh Lalit, judge of the Supreme Court, to be the Chief Justice of India with effect from 27 August, 2022 While Supreme Court judges retire on attaining the age of 65, judges of the 25 High Courts superannuate at the age of 62.
- Article 124: Establishment and constitution of Supreme Court.
 - a. There shall be a Supreme Court of India consisting of a Chief Justice of India and, until Parliament by law prescribes a larger number, of not more than seven other Judges.
 - b. Every Judge of the Supreme Court shall be appointed by the President by warrant under his hand and seal after consultation with such of the Judges of the Supreme Court and of the High Courts in the States as the President may deem necessary for the purpose and shall hold office until he attains the age of sixty-five years.
 - c. A person shall not be qualified for appointment as a Judge of the Supreme Court unless he is a citizen of India and
 - i. has been for at least five years a Judge of a High Court or of two or more such Courts in succession; or
 - ii. has been for at least ten years an advocate of a High Court or

- of two or more such Courts in succession; or
- iii. is, in the opinion of the President, a distinguished jurist.
- d. A Judge of the Supreme Court shall not be removed from his office except by an order of the President passed after an address by each House of Parliament supported by a majority of the total membership of that House and by a majority of not less than two – thirds of the members of that House present and voting has been presented to the President in the same session for such removal on the ground of proved misbehaviour or incapacity.
- e. Parliament may by law regulate the procedure for the presentation of an address and for the investigation and proof of the misbehaviour or incapacity of a Judge under clause (4).
- f. Every person appointed to be a Judge of the Supreme Court shall, before he enters upon his office, make and subscribe before the President, or some person appointed in that behalf by him, an oath or affirmation according to the form set out for the purpose in the Third Schedule.
- g. No person who has held office as a Judge of the Supreme Court shall plead or act in any court or before any authority within the territory of India.

Topic 58. THE PESA ACT AND THE REASON BEHIND PARTIES TRYING TO WOO TRIBALS IN GUJARAT

Important for subject: Polity

The AAP's manifesto for the election in Gujarat

- The PESA Act was enacted in 1996 "to enable the expansion of the provisions in Part IX of the Constitution that concern the Panchayats and areas that are Scheduled Areas".
- Other than Panchayats Part IX, comprised of Articles 243-243ZT of the Constitution includes provisions related to cooperative societies and municipalities.

- According to the Act, Scheduled Areas are the ones mentioned in the Article 244(1) that states that the requirements that are contained in the Fifth Schedule shall apply to the Scheduled Areas and Scheduled Tribes in states that are not Assam, Meghalaya, Tripura and Mizoram.
- The Fifth Schedule offers a number of special rules to cover these regions.
- **What is the PESA Act?**
- The PESA Act was enacted to provide self-government via Gram Sabhas (village assemblies) for residents in areas that are Scheduled Areas.
- It acknowledges the right tribes, which reside within the Scheduled Areas in order to exercise their own authority through their own self-governing systems.
- The Act allows Gram Sabhas to play a crucial function in the approval of development plans and regulating the social sector in general.
- This is the process and the personnel who carry out policies, ensuring oversight of the minor (non-timber) forests minor water bodies, minor minerals, in addition to other things.
- Ten states -Ten states - Andhra Pradesh, Chhattisgarh, Gujarat, Himachal Pradesh, Jharkhand, Madhya Pradesh, Maharashtra, Odisha, Rajasthan as well as Telangana The states have issued notices to the Fifth Schedule regions that cover (partially or completely) many districts in each of the states.
- Following that the PESA Act was enacted, the Union government issued a models of PESA Rules.
- Six states have been notified of these Rules.
- The Tribes from Gujarat The state has 11 main tribes in Gujarat one of which is the most populous being Bhil which accounts for almost 48 percent of the total tribal population.
- Other important tribes include Gamit Dhodias, Bawcha, Kunbi, Rabari, Siddi, Pateliya, Naikda, Chaudhary.

Topic 59. HOUSE PANEL BATS FOR EQUALITY IN GUARDIANSHIP***Important for subject: Polity***

The father and mother should be equal guardians of their children. The Hindu Minority and Guardianship Act (HMGA) 1956 should be amended to eliminate discrimination against women, a parliamentary panel has suggested in their report.

- Hindu Minority and Guardianship Act 1956. The Act in its present form does not provide for joint guardianship or it acknowledge the mother as guardian for the minor legitimate child, unless the father dies or found to be unfit.
- The Act favors fathers over mother, and goes against equality and discrimination that is protected in Articles 14 and 15 of the Constitution.
- The committee believes that there is a urgent need to modify the HMGA to provide equal rights to father and mother as natural guardians. Section 6, of HMGA stipulates the following: in instances of an Hindu minor boy as well as an Hindu minor girl who is not married dad is naturally guardian, and after him, the mother.
- Section 7 of that Act states an adoption guardianship that is natural to the adopted son who is a minor, is transferred upon adoption to the father who adopted him and , 'after' that, to the mother who adopted him.
- The Panel Recommendations has included guardianship rights for people who are disabled and suffer from cerebral palsy, autism and those suffering from mental health issues and seniors.
- In cases in which guardianship of the minors is at issue the panel suggests that the law should be considered "supported decision-making" as alternative to guardianship when an individual appoints trusted advisors like family members, friends or professional advisors to act as supporters.
- The panel also asked for a fresh look at child custody in cases of marital discord and suggested that courts should be empowered to grant the parents joint custody if it is deemed to be beneficial to the well-being of the child. They could also grant the sole custody of one parent, with access privileges to the second.
- Concerning adoption, the committee has stated that they believe that the LGBTQ community should be included in the law.
- The committee has also proposed an harmonisation of the provisions of both the JJ Act, 2015 and the Hindu Adoptions and Maintenance Act (HAMA) 1956, as adopting

under the first is arduous and lengthy, while the latter is not without flaws such as the inability of tracing the origin of the child who is being adopted to be adopted or insufficient follow-ups after the adoption.

- It has raised a long-standing request to keep an adoption register of children who are adopted by the HAMA because many are concerned that it can be used as a way to get involved in trafficking.
- Juvenile Justice (Care and Protection of Children) Act, 2015 under the law, prospective adoptive parents must be mentally, physically, emotionally stable, and financially stable.
- Single men are able to adopt boys single women are able to adopt any child of any gender.
- It also states the child shouldn't be granted in an adoption arrangement to the couple until they have at the very least two years of a stable marriage.

Topic 60. THE PRINCIPLE OF LIS ALIBI PENDENS AND FORUM NON CONVENIENS

Important for subject: Polity

The Madras High Court is the only court in Karnataka High Court can decide any dispute relating to taking away the Bengaluru medical institution from the scope of a university that is deemed to be in Chennai.

- It is component of the framework in the Constitution and is applicable to the judiciary, too.
- A High Court within one State is not allowed to exercise power that, under normal circumstances, could be performed only through the Supreme Court of the other State.
- The concept in Forumnon conveniens forum non conveniens, a law of common legal principle by which a court recognizes that a different forum or court where the case may be brought is a better location for a legal matter and then transfers the matter to the appropriate forum.
- One of the issues that is frequently raised when applying the principle is the issue of forum shopping, or choosing a court solely to gain an advantage in a court proceeding.
- The concept of lis alibi pendens (a dispute that is pending elsewhere) is used to solve

the issue of possibly contradictory decisions.

- When two courtrooms were to be hearing the same case there is a possibility for both courts to come to different conclusions.
- Lis alibi pendens stems from the international comity.
- It allows courts to not exercise jurisdiction if there is a concurrent litigation that is pending in a different area.
- The case is the '2019 ambit notice was issued through the Union Ministry of Education declaring that Bengaluru college would be included in the Bengaluru college will fall under the ambit of Chennai university.
- The state government submitted a writ request in the Karnataka High Court in 2020 in opposition to the '2019 ambit' notification.
- A joint petition was filed against the denial of the '2019 ambit notice The Karnataka High court rejected the claim that a certain portion of claim had arose in Chennai due to the geographical location of the college and, therefore, it was the Madras High Court could entertain the appeal.
- The Madras High Court is the only court in is the Karnataka High Court can decide on a dispute that is related to the removal of the Bengaluru medical institution from being a university that is deemed to be located in Chennai.
- The court that is able to resolve this lis (dispute) will be Karnataka High Court.

Topic 61. GRAMEEN UDYAMI

Important for subject: Polity

Grameen Udyami Project launched in Ranchi to help in the development of skills and entrepreneurship among tribal youth.

- It also gives a the boost to Skill India Mission
- Grameen Udyami is a unique multiskilling initiative, which is funded by NSDC which aims to educate 450 tribal students across Madhya Pradesh and Jharkhand. The program is currently being carried out across six states: Maharashtra, Rajasthan, Chhattisgarh, Madhya Pradesh, Jharkhand and Gujarat.
- The idea was formulated in the hands of MoS, Shri. Rajeev Chandrasekhar, and tribal MPs. Grameen Udyami Yojana is implemented under Sansadiya Parisankul Yojana.
- The project's training will be carried out on the following Job jobs that are pertinent to

our local economic.

- Electrician & Solar PV Installation Technician Plumbing & 2 Wheeler Repair of Masonry & Maintenance IT/ITES incorporating e-Governance Farm Mechanization

Topic 62. PARLIAMENTARY ST CLUSTER DEVELOPMENT PROJECT

Important for subject: Polity

The Honourable MPs' conference were held at Mumbai to examine the improvement of tribes in January 2020.

- Scheduled Tribe organizations called for a "Parliamentary ST Cluster Development Project' that was initiated in the gathering of honourable MPs organized at Mumbai to examine the improvement of tribal communities in January 2020.
- The 49 clusters across 15 states in India have been chosen by 40 tribal MPs from Lok Sabha and Rajya Sabha.
- A development associate is chosen by the MPs for each cluster.
- The following objectives must be met in the course of the program Growth in the local economy and rural areas Increase employment opportunities and reduce forced relocation due to insufficient local opportunities.
- Conservation of natural resources

Topic 63. WHAT IS INDIA'S POLICY ON THE ROHINGYA?

Important for subject: Polity

Officially, approximately 1,200 Rohingya are identified part of the first group to arrive to Delhi during 2012.

- Following their protest at the UNHCR (UN Refugee Agency) office in Delhi and were issued with refugee ID cards.
- They are the Foreigners Regional Registration Office (FRRO) is responsible for tracing foreigners and the visas they hold, has been asking for the possibility of a new office in the city of Rohingya by the Delhi government starting in 2021.
- This FRRO operates under the control of the MHA's administrative department the MHA.
- What exactly is the procedure for deportation?

- In accordance to the MHA According to the MHA, illegal immigrants can be recognized, detained, and deported in accordance with the Passport Act, 1920 or the Foreigners Act, 1946.
- The power to determine and deport them have been assigned to States as well as Union Territories.
- If a "foreigner" is arrested by police for being in the country illegally and without a valid passport the person is presented to any local judge.
- If the suspect is found guilty, they could be sentenced to prison for a period of up to three to three months to 8 years.
- When they have completed their sentence, the court can order deportation.
- Foreign inmates are transferred to detention centers until the country of origin checks that they are accepted.
- What is India's position regarding refugees?
- India does not signify to the 1951 UN Convention relating to the Status of Refugees and the 1967 Protocol.
- Foreign nationals who are not legally documented are subject to the laws that are contained in The Foreigners Act, 1946,
- The Registration of Foreigners Act 1939 and The Passport (Entry into India) Act, 1920, and The Citizenship Act, 1955.
- The MHA told the Congress in April 5, of this year that "foreign nationals who enter into the country without valid travel documents are treated as illegal immigrants."
- In the year 2016 the MHA's Mr. Rijiju told the Lok Sabha that "there there is no law of the nation regarding refugees in the present.
- The only Standard Operating Procedures are released from the MHA to handle foreign nationals who are in India that are claiming to refugee."
- The e-FRRO program program aims at creating a centralized accessible online platform for foreigners to access visa-related services as well as to offer faceless, cashless and paperless services to foreigners, providing them with a an easy-to-use experience.
- Through this scheme, people from outside will be eligible to receive more than 27 Visa and immigration associated services within India at the convenience of their home.

- Through the e-FRRO app, foreigners can submit their application online through the portal and receive the service(s) via email or post without visiting an FRO/FRRO offices.
- Constitutional Precedents the Constitution is a treatise on citizenship beginning with the Articles 5 to 11 in Part II.
- It does not contain any long-term nor elaborate specifics on this issue.
- It only names those who were citizens of India on the 26th of January, 1950 (i.e. when the Constitution began).
- The Constitution empowers the Parliament to adopt legislation to regulate matters related to citizenship.
- So, the Parliament passed legislation known as the Citizenship Act, 1955, that was recently changed in 2015.

Topic 64. 23RD MEETING OF THE CENTRAL ZONAL COUNCIL

Important for subject: Polity

Union Home and Cooperation Minister Shri Amit Shah of India was the chairperson of the twenty-third meeting of the Central Zonal Council in Bhopal in the last few days.

- The Zonal Councils are unit the legal (not constitutional) institutions.
- They're created by the associate degree act of the Parliament, which is the States Organization Act of 1956.
- The act split the country into five zone (Northern, Central, Eastern, Western and Southern) and created a zonal committee for each zone.
- When forming these zones, a variety of elements are considered which include the natural divisions within this country and the river system and communication methods along with the cultural and linguistic connection, as well as the requirements of economic growth as well as security, law and law and.

Each zonal council is comprised of these members:

1. Home minister of the Central government.
 2. Chief ministers from all states within the zone.
 3. Two ministers from each state within the zone.
 4. Administrator for each union territory of the zone.
- Additionally, the following people could be a part of the council's zonal committee as

advisors (i.e. with no right to vote at meeting):

1. one who is appointed to the Planning Commission;
 2. Chief secretary for the state government in each state within the zone; and
 3. Development commissioners from each state that is part of the zone.
- The house minister in the Central Government is also the general chairman of the five zonal councils.
 - Each chief minister is appointed as vice-chairman of the council in rotation and holds office for 1 year at the same time.
 - The councils of zonal are aimed at fostering cooperation and coordination between union territories, states as well as the Centre.
 - They make recommendations on topics such as social and economic design as well as minority languages border disputes, interstate transportation and more.
 - They are solely thought-provoking and consultative institutions.

The objectives (or the duties) for the councils of zonal in specific terms, are according to the following:

1. To an emotional integration within the entire country.
2. To aid in the growth of acute state consciousness regionalism, linguism, and other focusing patterns.
3. To assist in eliminating the effects of segregation in certain cases to ensure that the process of integration, shake-up and economic development could be synchronised.
4. To change the way in which the state and central government to join with one another on economic and social matters, and share ideas and information in order to develop consistent policies.
5. To collaborate with each other in the successful and swift implementation of major developments.
6. To ensure a peace and stability between the various areas of the country.

Topic 65. KERALA ASSEMBLY PASSES UNANIMOUS RESOLUTION TO THWART DIVISIVE FORCES TO: POLITICS***Important for subject: Polity***

The resolution was adopted and moved during the one-day special conference that was held within the House to mark Indian independence's anniversary, 75 years ago.

- This conference was also the start of the 10 day Assembly session, which was called in response to 11 state ordinances that came into effect under the state government that expire on August 8 due to the lack of approval from governor.

Kerala Governor:

- Article 173: Session of the State Legislature as well as prorogation and dissolution.
 1. A Governor may periodically summon the House or any House of the Legislature of the State to convene at any time and at any place the Governor thinks is appropriate however, there must not be over six months sessions (from the end of the session until the first sitting of the subsequent session)
 2. The Governor can from time to at any time (a) suspend the House or the other House (b) dissolve the Legislative Assembly.
- Legislative Assembly Article 213: Governor's authority to promulgate or other ordinances during the recess period of Legislature.
- Governors can issue an ordinance only if legislature (in the case that it is a unicameral legislative body) has not been in session (in the case in the case of a bicameral legislative body) when both Houses that comprise the State legislature aren't in session or when any of the two houses of the legislature are otherwise not in session.
- The last clause states that an ordinance could be issued by the governor only when one House (in the case in a legislature with bicameral representation) is in session, since the law is approved by both Houses and not just by only one House by itself.
- The governor can issue an ordinance only if he is convinced that the circumstances are in place to make it necessary to act swiftly.
- The authority to issue ordinances is co-extensive with the legislative powers by the legislative body of state.
- This means he is able to issue an ordinance only on areas in which the state legislature has the power to pass laws.
- The ordinance he issue is the same in impact and force as an statute passed by the

legislature of state.

- Any ordinance he issues can be Important for subject to similar restrictions as an statute of the legislature of state.
- The decree issued by him is bound to be invalid if it contains any provisions that the state legislature isn't able to create.
- He is able to revoke an order at anytime.
- The power to make ordinances isn't an arbitrary power.
- This means that he is able to issue or modify an ordinance only upon the recommendation of the council led by the head minister.
- The ordinance he issues must be presented to the legislative assembly or both houses of the State Legislature (in the case that it is a bicameral legislative body) at the time it reconvenes.
- The ordinance he issues is deemed to be inoperative upon the expiration of six weeks following the date of reassembly of state legislature.
- It could be dissolved before the required period of six weeks, when a resolution that disapproves the ordinance is adopted in the legislature, and accepted in the legislature council (in the case that a legislature is bicameral).
- The legislature cannot pass an ordinance without the permission of the President in three instances:
 1. If a bill that contains the same provisions required prior approval from the President prior to its introduction to the legislature of the State.
 2. If the President had deemed it necessary to hold back any bill that contained similar provisions for review by the President.
 3. Should an law passed by the state legislature with identical provisions would have been unconstitutional without the President's consent.

Topic 66. DEPARTMENT OF COMMERCE BEING REJIGGED TO MAKE IT FUTURE READY: MINISTER

Important for subject: Polity

The Department of Commerce is being transformed to become "future-ready" and establish an infrastructure to reach the goal of exporting \$2 trillion in 2030 the Secretary of the Union Piyush Goyal said on Tuesday.

- A special trade promotion body will be established in order to create a global strategy to reach the goals, according to Union Minister Piyush Goyal's Departments Department of Commerce Department of Industrial Policy and Promotion Autonomous Institutions Indian Rubber Manufacturers Research Association National Institute of Design National Productivity Council Quality Council of India Attached Offices The Office of the Economic Advisor, New Delhi.
- Tariff Commission, New Delhi. Office of the Salt Commissioner, Jaipur Subordinate Offices Office of the Controller General of Patents, Designs and Trade Marks, Mumbai.
- Petroleum & Explosives Safety Organization, Nagpur Copyrights Office Intellectual Property Appellate Board Attached Offices Directorate General of Foreign Trade Directorate General of Trade Remedies (DGTR) Sub-ordinate Offices Directorate General of Commercial Intelligence and Statistics Special Economic Zones
- Autonomous organizations Agricultural and Processed Food Products Export Development Authority The Marine Products Export Development Authority (MPEDA) Indian Institute of Foreign Trade Indian Institute of Packaging Export Inspection Council Export Inspection Agency Commodity Coffee Boards :
- HQ - Bengaluru, Karnataka Tobacco Board : HQ - Guntur, Andhra Pradesh Rubber Board - HQ - Kottayam, Kerala Tea Board : HQ - Kolkata, West Bengal Spices Board : HQ - Kochi, Kerala PSU GEM (Directorate General of Supplies and Disposals)
- State Trading Corporation PEC Limited MMTC Limited Export Credit Guarantee Corporation of India Limited India Trade Promotion Organization Other Organization Indian Diamond Institute
- Footwear Design And Development Institute (FDDI) India Brand Equity Foundation Price Stabilization Fund Trust Indian Institute of Plantations Management, Bengaluru Export Promotion Councils Federation of Indian Export Organisations Cashew Export

Promotion Council of India Basic Chemicals, Pharmaceuticals and Cosmetics Export Promotion Council

- Council for Leather Exports Chemical and Allied Products Export Promotion Council
- The Gem and Jewellery Export Promotion Council Engineering Export Promotion Council National Manufacturing Competitiveness Council Plastics Export Promotion Council Sports Goods Export Promotion Council Project Exports Promotion Council of India Pharmaceutical Export Promotion Council Indian Oil Seeds & Produce Export Promotion Council (IOPEPC) Services Export Promotion Council EEPC India

Topic 67. UNTOUCHABILITY IN INDIA

Important for subject: Polity

Rajasthan case Case of Rajasthan 17 in the Constitution of India has abolished "Untouchability", its practice in any form is prohibited and the enforcement of any disability caused by "Untouchability" is an offence which is punishable under the laws.

- In the wake of this Constitutional provision The untouchability (Offences) Act of 1955 was promulgated and promulgated on 08.05.1955.
- Then, it was modified and changed in the year 1976.

The Protection of Civil Rights Act 1955.

- The PCR Act prescribes punishment for the application of any disability that results out of the use of non-touchability.
- The Act is enforced by the state governments and Union Territory administrations.
- The section 7 in the PCR Act prescribes punishment for the prohibition of the exercise of the rights he has acquired because of the abolishment of "untouchability".
- Explanation I in the section, among other things, says that one can be considered to be a boycotting person who is refusing to let the person in question be in or use any residence that is normally performed in the normal way.
- A centrally-sponsored scheme Central aid is given to state governments and union territory administrations for the efficient application of the PCR Act, which, among other things, provides incentives for marriages between people of different castes when one spouse is an enrolled member of a Scheduled Caste, as well as an awareness-raising program

Topic 68. AMENDS SUPREME COURT JUDGES RULES***Important for subject: Polity***

The Supreme Court Judges (Amendment) Rules, 2022.

- The government has modified the initial Supreme Court Judges Rules of 1959, in order to fulfill the power granted to it by the Supreme Court Judges (Salaries and Conditions of Service) Act, 1958.
- Rules allow retired Chief Justice to rent-free Type VII housing at Delhi to stay for 6 months starting from the date of retirement.
- A notice issued by the Ministry of Law and Justice stated that the residence would be different from the official residence.
- The new Rules added that retired Chief Justice as well as Judges of the Supreme Court shall be entitled to a chauffeur, secretarial assistant and round-the-clock security protection in addition to a private security officer for a time of one year beginning at the time of retirement.
- Additionally, the revised Rules stipulated that retired Chief Justice or judges be granted, in accordance with procedure, to courtesies in the airport's ceremonial lounges.
- Supreme Court Judges Articles 124 to 147 in the Part V of the Constitution address the organization of the Supreme Court, its independence, jurisdictional the procedure, powers and so on. Supreme Court.
- The Parliament is also authorized to regulate these.
- Salary and Allowances The wages allowances, privileges, retirement and leave allowances of justices from the Supreme Court are determined from time to time by Parliament.
- They are not able to be changed in a negative way after their appointment, except in an emergency financial situation.
- They also receive a monthly allowances and are provided with accommodations for free, as well as other services like car, medical phone, etc.
- Chief justices who have retired and judges can receive 50 percent of their last salary as a monthly pension.

Topic 69. THE 38TH MEETING OF MINISTERIAL LEVEL JOINT RIVERS COMMISSION***Important for subject: Polity***

The 38th session of the Ministerial-level Joint Rivers Commission of India and Bangladesh was held in New Delhi on 25th August 2022.

- This Indian delegation was headed by the Shri Gajendra Singh Shekhawat, the Union minister for Jal Shakti.
- The Joint Rivers Commission of India and Bangladesh was established in the year 1972 to serve as an international mechanism that addressed questions of mutual concern on transboundary rivers.
- India along with Bangladesh have shared 54 river, out of which seven rivers were prior to the creation of a the framework for water sharing agreements based on prioritised.
- At the time of the meeting, it's been agreed to broaden this ongoing cooperation by adding eight additional rivers for data exchange.
- One of the most important areas of cooperation, in which India has assisted Bangladesh in sharing actual time flood data.
- The two sides have agreed to the final text of the MoU regarding Interim Sharing of Water Sharing of Kushiya River.
- Both parties also welcomed the completion of the design and place of the water intake point along the Feni River to meet the water requirements in Sabroom town, Tripura in accordance with the October, 2019 India Bangladesh MoU on this topic.

Topic 70. INTERGOVERNMENTAL COMMITTEE OF UNESCO'S 2003 CONVENTION FOR THE SAFEGUARDING OF THE INTANGIBLE CULTURAL HERITAGE***Important for subject: Polity***

On July 7, 2022, India was elected as a participant in the Intergovernmental Commission of the UNESCO's 2003 Convention for the Safeguarding of the Intangible Cultural Heritage for the 2022-2026 cycle.

- The Convention of the Safeguarding of the Intangible Cultural Heritage was approved by the United Nations Educational, Scientific and Cultural Organization (UNESCO)

in 2003, and came into force in.

- It is comprised of 24 members and is elected by the General Assembly of the Convention following the rules of equitable representation of geographical areas and rotation.
- The members on the Committee are chosen for a four-year term.

Objectives:

1. To protect the intangible expressions of cultural heritage
 2. To protect the cultural heritage that is intangible,
 3. To raise awareness at the local as well as international levels.
- Other publications include the Representative List of Intangible Cultural Heritage of Humanity The list of Cultural Heritage that requires urgent safeguarding and Register of safe safeguarding methods.

India's election:

- India was selected to be a member of the International Committee for the UNESCO's 2003 Convention for the Safeguarding of the Intangible Cultural Heritage for the 2022-2026 period.
- Voting for elections to members of the Intergovernmental Committee were held during the 9th General Assembly of the 2003 Convention that was held at the UNESCO headquarters in Paris 5th to 7th July 2022.
- India was the winner of the election with an overwhelming majority of just 110 votes of 155 State Parties who were present.
- With India being elected to this body, it is aiming to increase the reach and effectiveness that the Convention and to increase the capacities of various actors around the world to ensure the protection of intangible heritage around the world.
- In the current time, India has formulated a clearly defined plan to protect as well as promotion of irreplaceable human cultural heritage.
- The areas of focus that India will be focusing on include the promotion of community participation, strengthening international cooperation by preserving intangible heritage, and promoting research into the intangible cultural heritage and aligning the activities of the Convention to those of UN Sustainable Development Goals.

Topic 71. THERE WILL BE AT LEAST ONE CONSTITUTION BENCH IN SUPREME COURT THROUGHOUT THE YEAR: CJI-DESIGNATE U.U. LALIT.

Important for subject: Polity

A constitution bench is comprised of five or more judges from the court created to resolve major legal issues pertaining to the constitutional interpretation in a particular case.

- The constitutional provision for a constitution bench is included by the Constitution of India under Article 143.
- The Chief Justice of India who is constitutionally empowered to create a constitution bench and refer cases before it.
- Constitution benches are established in the following situations:
- If a case is an important legal issue that concerns the application of Constitution (Article 143(3)).
- Article 143(3) states, "The minimum number of Judges who are to sit for the purpose of deciding any case involving a substantial question of law as to the interpretation of this Constitution or for the purpose of hearing any reference under Article 143 shall be five."
- The President of India has asked the Supreme Court's decision regarding a matter of fact or law, it is covered under Section 143, Article 14 of the Constitution.
- The Article 143 in the Constitution gives advisory authority over the Supreme Court of India.
- According to the law that The President of India is able to make inquiries at the Supreme Court, which he considers essential for the public's welfare.
- The Supreme Court upon reference advises the President to answer the question.
- However, any referral decision by the apex courts is not binding for the President. Neither is it a law approved to be binding by the Supreme Court'.
- If three or more judges on panels comprised of three judges Supreme Court have delivered conflicting decisions on the same subject of law, it's time to establish an exact legal understanding by a more extensive bench.
- Constitution benches are formed on an ad hoc basis as the above-mentioned conditions are met.

Topic 72. CJI TENURE***Important for subject: Polity***

Justice Uday Umesh Lalit, who was sworn to be the 49th Chief Justice of India on Saturday, will leave office on the 8th of November, with the term of seventy-seven days.

- Article 124 in the Constitution of India, caps the retirement age to Supreme Court judges at age 65.
- Thus, every Chief Justice's tenure starts at the time of his/her appointment until the date of his or her retirement.
- In the end the term of each CJI is determined by how old they were at the point they were appointed as a member of the Supreme Court, their rank in seniority and date of appointment as Chief Justice.
- The US, Supreme Court judges quit their posts only when they die or when they independently and on their own quit their positions.
- To be appointed Judge in the Supreme Court, a person must be an Indian citizen India and have been for at least five years, judge of an High Court or of two or more of these Courts in succession or an Advocate for the High Court or of two or more of these Courts that have been in succession for a minimum of 10 years, or be, in the judgment by the president, an outstanding jurist.
- Article 124 of The Constitution Of India 1949 Constitution and establishment of Supreme Court
- There will exist a Supreme Court of India constituting of one Chief Justice of India and, until the law of the land determines a greater number of no more than seven additional judges.
- Each Judiciary of the Supreme Court shall be appointed by the President through warrant with his signature and sealed after consulting with the Jules from the Supreme Court and of the High Courts in the States as the President thinks appropriate for the task and shall serve until he reaches the age of sixty-five years old.
- Supreme Court judges are retired upon reaching the age of 65, while judges of the high court retire at the age of 62.
- CJI with under 100-days Justice Kamal Narain Singh, who was the CJI between November 25, 1991 until 12 December 1991 was CJI for 18 days.
- Justice S Rajendra Babu had 30 days of his time as chief justice of India between May

2nd in 2004 until May 31 2004.

- Justice J C Shah had an appointment of 36 days during his time as the CJI between the 17th of December 1970 until January 21 1971.
- Justice G B Patnaik had an 11-day term as the chief of the Indian judiciary. He held the post of CJI between November 8 2002 until December 18 2002.
- Justice L M Sharma had an 86-day term as the CJI during his time in the office from November 18, 1992 , and February 11 1993.

Topic 73. CENTRAL ARID ZONE RESEARCH INSTITUTE (CAZRI)

Important for subject: Polity

Four new facilities have been added to the Central Arid Zone Research Institute (CAZRI), Jodhpur inaugurated by the Union Minister

- The Central Arid Zone Research Institute (CAZRI) is among the most prestigious research institutes of the Indian Council of Agricultural Research (ICAR) which is an autonomous entity that is under the tutelage under the Department of Agriculture Research and Education (DARE) of the Ministry of Agriculture and Farmers Welfare of the Government of India.
- The institute had its humble start in 1952, when the Government of India initiated Desert Afforestation Research Station in Jodhpur to conduct studies on stabilization of sand dunes and to establish shelter belts to stop wind erosion.
- It was changed to Desert Afforestation and Soil Conservation Station in the year 1957, and then as the present Central Arid Zone Research Institute in 1959 following the advice from an UNESCO (United United Nations Educational Science and Cultural Organization) expert
- Mandat Research and basic research on sustainable farming practices in the desert ecosystem. Information repository about the condition of the natural resources and processes of desertification Livestock-based systems of farming and range management practices to the areas with chronic drought-related issues Generating and transfer of specific technology that is specific to the location

Topic 74. NEIGHBOUR'S ENVY: INDIA'S JUTE ECONOMY IS FALTERING WHILE BANGLADESH'S IS FLOURISHING; HERE'S WHY

Important for subject: Geography

Economic Insufficiency of Market government procurement and diversification, a poor infrastructure and the deteriorating condition of Indian Jute mills are responsible for the current state of affairs.

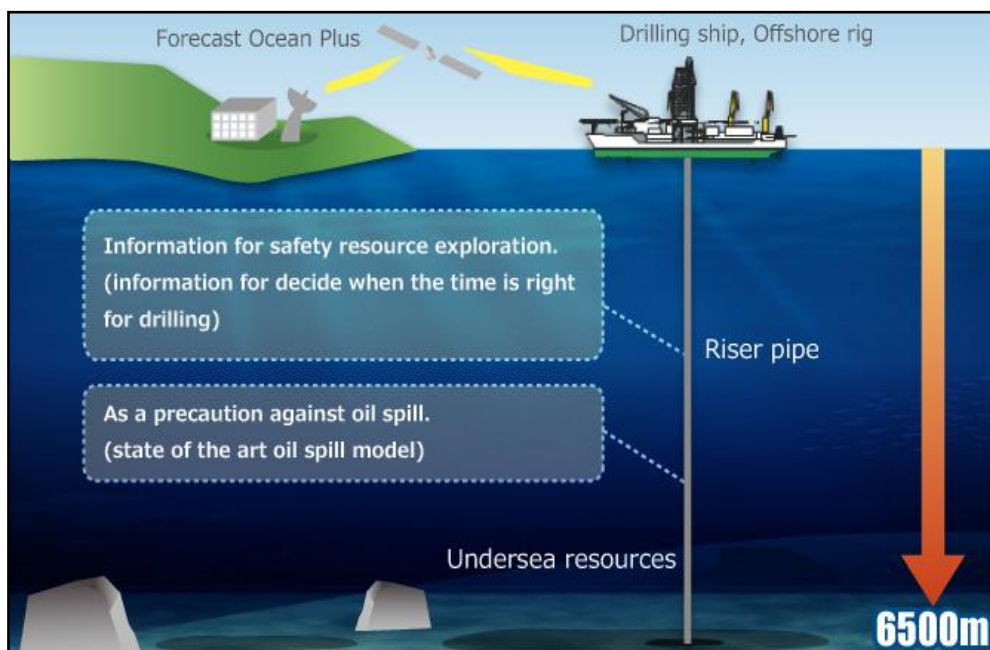
- India remains the biggest producer of jute but in terms of acres, Bangladesh is the largest cultivator.
- The state of West Bengal - the biggest jute-producing state in the world with 70 of India's 93 mills for jute the area of Jute has been reduced to 0.1 million ha in the years 2009-10 to the 2020-21.
- Jute is an extremely profitable product. Its leaves are offered on the market as vegetable before the harvest is completed.
- The stem inside can be used to produce paper, while the outer layer creates fiber.
- The Jute Packaging Materials (Compulsory Use in the Packing of Commodities) Act 1987 (JPMA) It allows the usage of jute packaging materials for food grains.
- In this Act the government can issue orally to require the use of jute-based packaging
- In 2017, rules state that 100 percent of foodstuffs and 20 percent of sugar can be packaged in bags made of jute.
- Because of this, the jute bags account for 75 percent of total output of the industry.
- National Jute Board It is controlled by the National Jute Board Act-2008, which was drafted by the Ministry of Textiles, Govt. of India and approved through the Indian Parliament on the 12th of February 2009.
- Board is involved in research and development of human resources programs to investigate innovative and new ways to use Jute, with the aim of helping both the organized and those in the uncentralized industry to be competitive and grow the proportion of global Indian Jute-related goods.
- Initiatives of the Government Initiatives for Promoting Jute Industry Jute Corporation of India (JCI) purchases raw jute at the Minimum Support Price (MSP) that is fixed on the basis of the recommendations by the commission on Agricultural Cost and Prices (CACP) and jute growers to protect their interests.
- Incentive Schemes for Acquisition of Plants and Machinery (ISAPM) in 2013 to help

modernize new and existing jute mills as well as upgrading of the technology used in existing mills using jute.

- Jute ICARE (Jute: Improved Cultivation and Advanced Retting Exercise):
- The pilot project, which was launched in 2015 aims to address the challenges facing jute growers by providing them with certified seeds at reduced prices and also by promoting new retting techniques that have been developed under water-limited conditions.
- The National Jute Board implements various plans for market development as well as the welfare of workers and expansion of diversification as well as exports.
- To increase demand in the jute industry to boost demand, the government has put in place antidumping duties on imports of jute products coming from Bangladesh as well as Nepal.
- The Facts about Jute Jute is known as the "golden fiber" is the longest-running and widely utilized natural fibres for a variety of textile uses.
- It is a favourite in tropical lowlands where humidity ranges from 60 90 to 80 percent. Jute is a rain-fed plant and does not require pesticides or fertilizers.
- Retting Jute is a method that involves the tying strings of stalks made from jute get immersed in water and fibers break loose and separate from the stalks of wood.
- The top jute producing countries in the world include India, Bangladesh, China and Thailand.
- India is the world's biggest manufacturer of raw jute as well as Jute-related products, making up about 50 and 40% of production worldwide.
- The jute plantation in India is mostly restricted to the eastern part in the nation.
- Jute is a crop that is produced in seven states: West Bengal, Assam , Orissa , Bihar , Uttar Pradesh , Tripura and Meghalaya.
- West Bengal alone accounts for more than 50% of Jute raw production.
- To increase awareness and promote diversification in jute work National Jute Board, Ministry of Textiles is the highest authority for the promotion of the product in India as well as abroad.
- Jute was first mill built in Rishra (Bengal currently in West Bengal), on the river Hooghly close to Calcutta in 1855 by George Aclend. George Aclend. Then, in 1959 the first electric driven weaving plant was established.

Topic 75. HARNESS THE POTENTIAL OF OCEAN RESOURCES.

Important for subject: Geography



Ministry of Earth Sciences (MoES) has launched a number of initiatives to maximize their potential Ocean resources.

- Government of India has signed an agreement for 15 years with the International Seabed Authority (ISA) for the exploration of polymetallic nodules of the Central Indian Ocean Basin (CIOB) in 2002.
- MoES has conducted exploration and other development operations related to polymetallic sulphides under a 15-year agreement signed in 2016 by the International Seabed Authority (ISA) to explore the polymetallic sulphides within an allotted territory of 10,000 square kilometers in the Central Indian Ridge (CIR) and Southwest Indian Ridge (SWIR) region of the Indian Ocean.
- National Institute of Ocean Technology (NIOT) under MoES has designed, tested, and operated remotely operated, unmanned systems to tap into ocean resources.
- Marine Living Resources Programme (MLRP): Centre for Marine Living Resources and Ecology (CMLRE) of MoES examined deep-sea living resources of the Marine Living Resources Programme (MLRP).
- The program covers regular monitoring of Indian ecosystems that span from deep to pelagic seas as well as the documentation of taxonomic information and the development of new technology to exploit the resources.

- Geological Survey of India (GSI) under the Ministry of Mines has delineated possible offshore areas in the Exclusive Economic Zone (EEZ) of India for minerals found in marine environments, such as lime mud heavy mineral placers, ilmenite monazite, monazite and rutile sillimanite and garnet, zircon] and construction sand.

Topic 76. DECLINE IN QUANTITY AND QUALITY OF GROUND WATER

Important for subject: Geography

The analysis of data on water levels shows that around 70% of monitoring wells have seen an increase in the ground water level. However around 30 percent of wells have seen a decrease in water levels.

- The quantity of groundwater available is contingent upon several variables like the intensity and duration of rainfall, the geological strata of the region as well as the amount of recharge structures, the amount of water extracted by customers for different uses like industrial , domestic or drinking and irrigation practices, including the pattern of cropping and the intensity , etc.
- The status of ground water is monitored as reported by CGWB Central Ground Water Board (CGWB) regularly monitors the ground water levels as well as water quality across the nation on a regional basis via an extensive network of monitoring wells.
- These studies show the presence of Fluoride Arsenic Iron, and heavy Metals over the BIS allowed limits in small areas in some parts of the nation.
- Analyzing data on water level shows that around 70% of monitoring wells have seen an increase in ground water levels. However approximately 30 percent of the wells have experienced a decline in water levels.
- Furthermore it has been discovered that nitrate contamination is primarily anthropogenic, and its growth is evident in certain zones, specifically those near homes.
- Additionally, nitrate contamination could also result from the fertilizers' use.
- According to the Central Ground Water Board (CGWB) study groundwater pollution is generally Geogenic in nature, and doesn't show any significant changes in the past.
- Actions to conserve the water bodies Census of Water Bodies The Ministry of Jal Shakti has launched the very first Census of Water Bodies in connection of the Sixth Minor Irrigation Census (reference year 2017-18) with the intention of creating a database national for all the water bodies throughout the country.

- Steps to Conservation of Water bodies:
- Jal Shakti Abhiyan (JSA) was established in the year 2019 in water-stressed blocks of 256 districts.
- It continued through 2021 (across the entire country, both urban and rural) and also with the main objective of efficiently harvesting the monsoon rains through the creation of recharge structures that are artificial and watershed management structure for reuse and refill, extensive forest afforestation, awareness-raising etc.
- Amrit Sarovar Mission launched on 24 April 2022, aims towards rehabilitating and developing 75 water bodies across each district in the country.
- Atal Mission for Rejuvenation and Urban Transformation (AMRUT) scheme the rejuvenation of the water body is part of the water supply section of the Atal Mission for Rejuvenation and Urban Transformation (AMRUT) scheme under the Ministry of Housing & Urban Affairs. AMRUT 2.0 was announced in October of 2021.
- Jal Shakti Abhiyan "Catch The Rain" (JSA:CTR) campaign: Specific interventions under the annual campaigns enacted with both the Government of India and the State Governments, includes the renovation of traditional water and other bodies, enumeration, geo tagging and taking lists of water bodies in all areas and removing encroachments and de-silting tanks, and the protection of the water catchment areas.
- Mahatma Gandhi National Rural Employment Guarantee Scheme (MNREGS) includes the capacity to fund public works related to managing natural resources as well as water conservation and harvesting structures to increase and improve groundwater such as underground dikes, earthen dams check dams, stop dams, and roof top rain water harvesting structures on public structures.
- The steps taken to control and manage groundwater extraction by different users, including irrigation "Linking patterns of the crop with the availability of groundwater"
- "Sahi Fashal" campaign: It was announced through the Department of Water Resources and River Development and Ganga Rejuvenation on the 1st of January, 2019 to encourage farmers in water-stressed regions to cultivate crops that are financially profitable and nutritious, suitable to the agro-climatic and hydro characteristics of the region, are sustainable and not water-intensive.
- Informing farmers about suitable crops, micro-irrigation techniques as well as soil moisture conservation transitioning them from the water intensive crop to those that

require less water, and assisting the policy makers in drafting policies, etc. are just some of the main facets that the program.

- National Aquifer Mapping Program (NAQUIM) It is implemented by CGWB with the aim of discover the groundwater aquifer systems and to determine their classification for sustainable management.
- From the total area mappable of more than 25 lakh square kilometers more than 10 lakh square kilometers of the total area (as as on June 30, 2022) within the country has been covered.
- The remainder of the area has been set to be covered by the end of March 2023.
- Atal Bhujal Yojana The scheme is managed in the name of the federal government, with an investment of 6,000 million in partnership with States in water-stressed areas in Gujarat, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan and Uttar Pradesh.
- The primary aim of the scheme is demand side management including implementation of crop rotation/diversification, changing crop pattern, use of sprinklers/drip irrigation system etc by involving the local communities at village levels leading to sustainable groundwater management in the targeted areas.
- Pradhan Mantri Krishyee Yojana (PMKSY): Government of India offers financial assistance to the States under the Repair, Renovation and Restoration of Water Bodies part of Pradhan Mantri Krishi Sinchayee Yajana (PMKSY) -- Har Khet Ko Pani (HKKP).
- The National Water Policy (NWP) 2012 declares that conserving water for irrigation is of vital importance.
- The policy also outlines methods such as aligning the pattern of cropping with natural resource resources, micro irrigation (drip sprinkler, drip and etc.), automated irrigation operation, evaporation-transpiration reduction etc., should be encouraged and incentivized.
- Other: Water is a State Important for subject and several States have done notable work in the field of water conservation/harvesting such as 'Mukhyamantri Jal Swavlamban Abhiyan' in Rajasthan, 'Jalyukt Shibar' in Maharashtra, 'Sujalam Sufalam Abhiyan' in Gujarat, 'Mission Kakatiya' in Telangana, NeeruChettu' in Andhra Pradesh, Jal Jeevan Hariyali in Bihar, 'Jal Hi Jeevan' in Haryana, and Kudimaramath scheme in Tamil Nadu.

- However, the Central Pollution Control Board (CPCB) together with State Pollution Control Boards/Pollution Control Committees (SPCBs/PCCs) implements the requirements in the Water (Prevention & Control) Act 1974 as well as the Environment (Protection) Act, 1986 throughout the country in order to stop and reduce contamination in water.

Topic 77. THE EARTH HAS RECORDED ITS SHORTEST DAY SINCE THE 1960S - WHY ARE WE SPINNING FASTER AND WHAT IMPACT CAN IT HAVE?

Important for subject: Geography

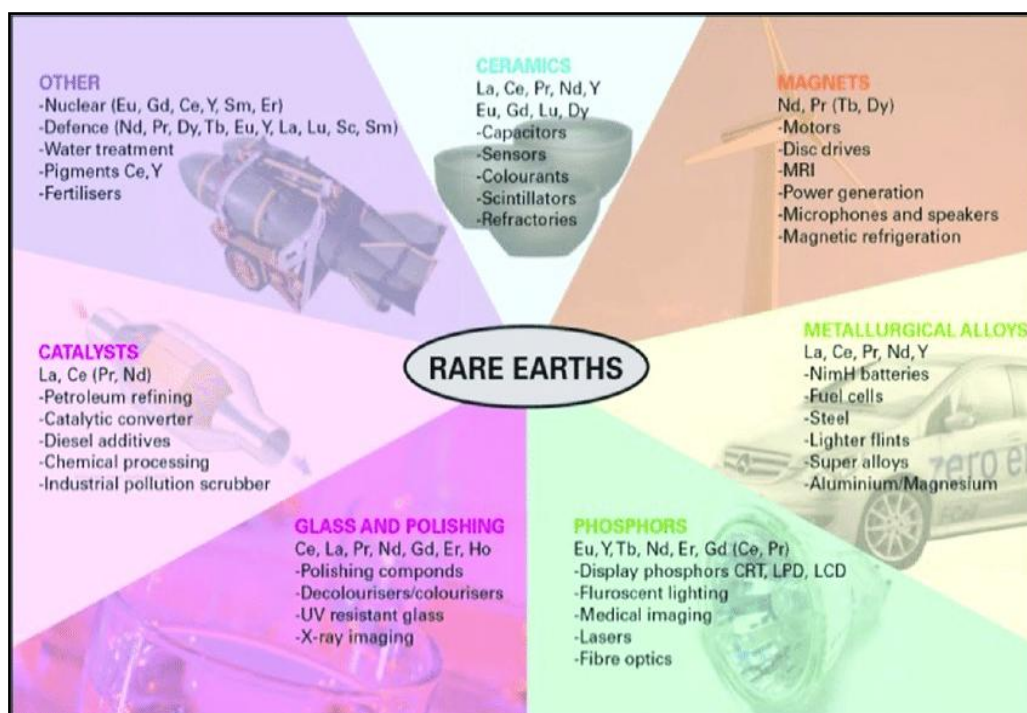
Physiography On the 29th of June, the Earth completed one full rotation -- or a day - -that was 1.59 milliseconds lower than the time it takes to complete its normal 24 hour cycle.

- Also, the Earth is moving fast. What's new? Even though the Earth is completing its rotations at a faster pace in recent times in comparison to an extended period of time, the planet actually is spinning slower.
- Every century is when the Earth will take just a few milliseconds more time to complete one full rotation in the average, the days are becoming longer.
- Thus, 1.4 billion years ago a single day would have lasted just 19 or less hours. The Guardian reported in 2018 quoting an academic paper that was published the same year.
- The study attributed the greater tendency of Earth's slow rotation mostly due to the gravitational pull exerted by the Moon which creates friction in the tidal zone and slows the Earth's spin.
- Why are the days becoming shorter? The hypothesis is that climate change-related surface changes, which affect the way the Earth spins and spins, could be the reason.
- These changes in the surface include melting glaciers that are found in Greenland and Antarctica and changes in the ocean circulation.
- Experts believe that the reason is internal and is rooted in the core's movement.
- among the numerous factors that influence speeds of Earth are the movements of the core of the planet's inner molten core as well as the activity of seismic waves, winds speed and atmospheric gases shifting.
- The actions that push mass towards the center of the Earth will accelerate the Earth's rotation. On the other hand, anything that pushes mass away will slow the spin.
- There are some experts who claim that the shorter length of the day may be due to the

- "Chandler wobble," an event that is the tiny deviation in geocentric poles of Earth.
- The usual intensity of the Chandler wobble is three or four metres on the surface of the Earth, however from 2017 until 2020, it vanished
 - The turning Earth is influenced by a variety of elements, such as variations in the way that winds blow, or currents within the ocean.
 - Certain of these elements can boost the speed of the planet as well as bring it down.
 - What could happen if Earth continues to accelerate on a regular basis?
 - To make sure that the time displayed on clocks corresponds to the speed of Earth's rotation, the system of leap seconds has been in use from the 1970s.
 - They require one-second adjustment for Coordinated Universal Time (UTC) which is the standard for time employed to synchronize clocks throughout the globe.
 - In response to the slowing of the earth's rotation due to the slowing of the planet's spin, 27 leap seconds have been added to UTC.
 - But, if it is the case that Earth continues to rotate faster and the days are subsequently shorter, scientists could need to develop the first ever negative leap second' that is a subtraction of seconds from the clock

Topic 78. WHAT ARE RARE EARTH ELEMENTS AND WHY IS INDIA KEEN TO JOIN A GLOBAL ALLIANCE TO ENSURE THEIR SUPPLY?

Important for subject: Geography



Economy Geography Rare earths can be crucial for electronic devices, including hybrid and electric vehicles for which India is dedicated.

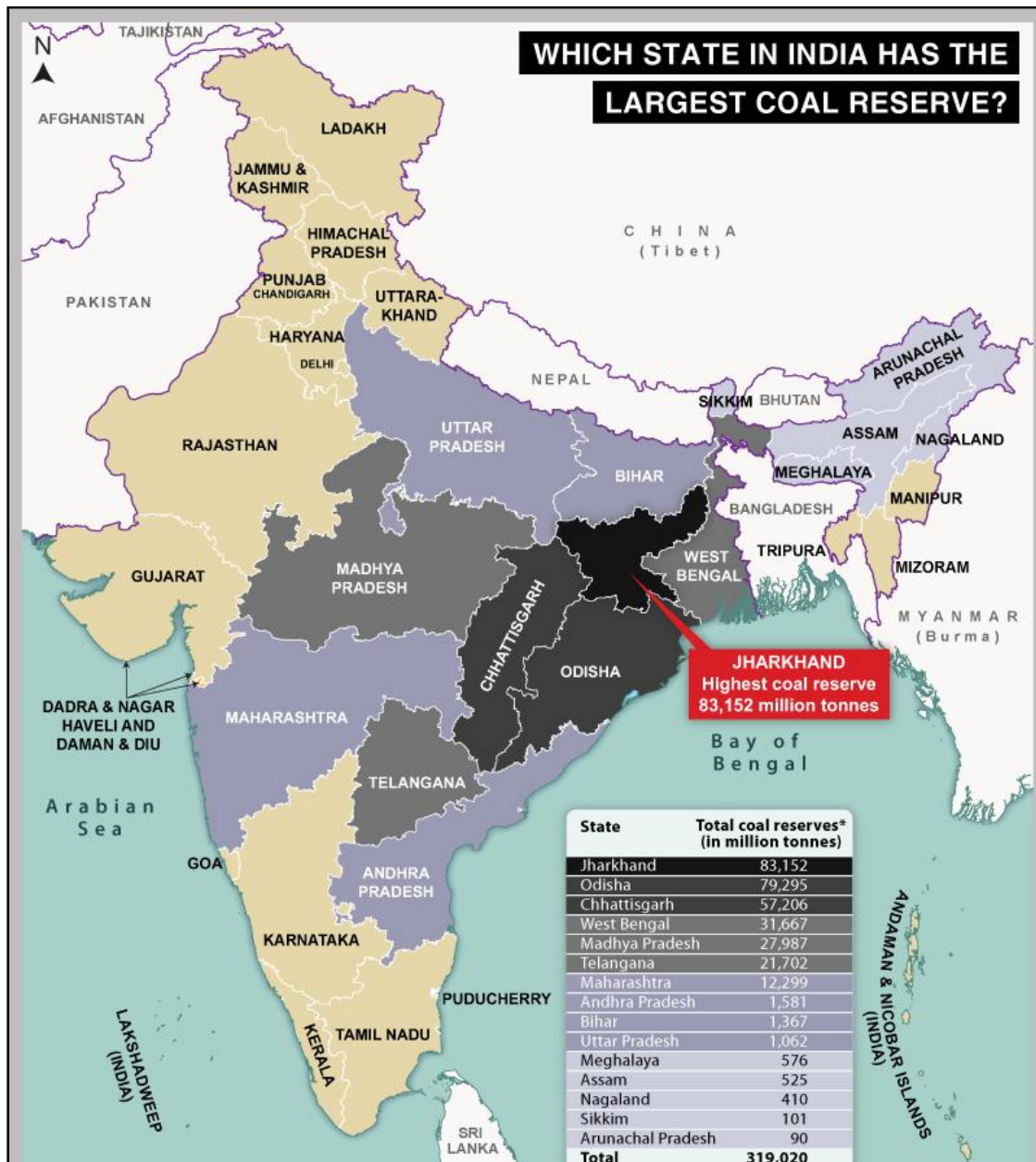
- As the Covid-19 outbreak and the geopolitical tensions between China have shown that, the Chinese close-to-monopoly on their export and production causes significant supply-side risks.
- What exactly is Minerals Security Partnership (MSP)? The US as well as 10 other partners-- Australia, Canada, Finland, France, Germany, Japan and Japan, the Republic of Korea (South Korea), Sweden, the United Kingdom, and the European Commission -- have joined forces to form the MSP.
- The new grouping aims to stimulate investment from both the government and private companies to identify strategic opportunities.
- The grouping, as industry experts say, will focus on the supply chains for minerals like Cobalt, Nickel, Lithium and the 17 rare earth minerals.
- The alliance is principally focused on creating as an alternative to China and has developed processing infrastructure for rare earth minerals, and purchased mining facilities in Africa for elements like Cobalt.
- Are there uncommon earth elements? These 17 rare earth elements (REE) comprise fifteen Lanthanides (atomic numbers 57, which corresponds to Lanthanum -to seventy-one in the periodic table) as well as Scandium (atomic numeral 21) and Yttrium (39). They are also classified under RE elements with a light weight (LREE) in addition to heavier RE elements (HREE).
- Certain REEs are readily available in India including Lanthanum, Cerium, Neodymium, Praseodymium and Samarium, others, like Dysprosium, Terbium, and Europium, classified as HREEs and are not found in Indian reserves in extractable amounts.
- Thus it is dependent on nations like China for HREEs as it is among the top producers of REEs which accounts for around 70 percent part of the world production.
- As per the US Geological Survey, supplies from China began to shift from the time of 1990 since Beijing was constantly changing the quantities it allowed to be exported and produced.
- According to the USGS The Chinese government started to limit the amount of businesses that are Chinese as well as Sino-foreign joint ventures, which might export

REEs from China.

- What are the significance of these minerals?
- Minerals such as Cobalt, Nickel, and Lithium are essential to make batteries for electric vehicles.
- REEs are a vital but often insignificant component in over 200 of the most popular consumer goods such as mobile phones, computers with hard drives, hybrid and electric vehicles semiconductors, flat-screen TVs and monitors, as well as electronic devices that are high-end.
- India is considered to be an early mover to get into the value chain of lithium, occurring at a moment when EVs are expected to be a market which is poised for disruption.
- What is India's biggest issue at the moment?
- "If India is not able to mine and extract the minerals it needs, then India will need depend on a small number of nations which include China for power to its energy transition plan to electric vehicles.
- It's like our dependence on a handful of nations for crude oil." one economist stated.
- Industry experts say they believe that one of the reasons India isn't able to find a spot in MSP grouping MSP grouping is due to the fact that the country doesn't have any experience to bring into the discussion.
- Within the group, countries such as Australia along with Canada have reserves as well as the technology for extracting these reserves, while countries like Japan have the capability for processing REEs.

Topic 79. COAL PRODUCTION

Important for subject: Geography



The coal supply at Thermal Power Plants (TPP) has grown to 25.6 million tonnes (MT) at the time of writing to 29.5 tonnes (MT) from March to June.

- Draft Economic Survey 2021-22 projects coal demand to increase by 3 to 1.5 Billion Tonnes by 2030.
- In the current year (up to June 22) the country has an increase of around 31% over the same period the previous year.
- The coal supply available to Thermal power stations (TPP) of the country is

monitored on a every day basis by the Central Electricity Authority (CEA) The stock has increased by 25.6 million tonnes (MT) in 2022 to 29.5 MT in April-June 2022.

- The thermal power generation in the country in April and June 2022 witnessed a rise by 18 percent.
- The steps taken to increase the production of domestic coal: The enactment of Mines and Minerals (Development and Regulation) Amendment Act, 2021
- The Act states that captive mine owners (other other than the atomic minerals) are able to sell up 50 percent of the annual minerals (including coal) production to the market once they have met the conditions of the end use plant as specified to the Central Government.
- Auction of coal blocks for commercial auction on a revenue sharing basis.
- A Monitoring Committee has been established under the chairmanship of the Secretary (Coal) and Chief Secretaries of the Host States Secretary (MoEF and Coal Controller Organization (CC), Coal Controller Organization (CCO) and CMPDIL to be Members of the Committee.
- Expansion of Mines MoEF & CC granted a special dispensation at the request of the minister of coal for the consideration for consideration of Environment Clearance (EC) from 40 percent to 50% expansion for coal mining projects within the current mine lease area and premises, without the need for additional land acquisitions, and only the mines which already have received the 40% dispensation as a result of previous reforms enacted by MoEF & CC.

Topic 80. WHY IS HEAVY RAINFALL BATTERING KERALA?

Important for subject: Geography

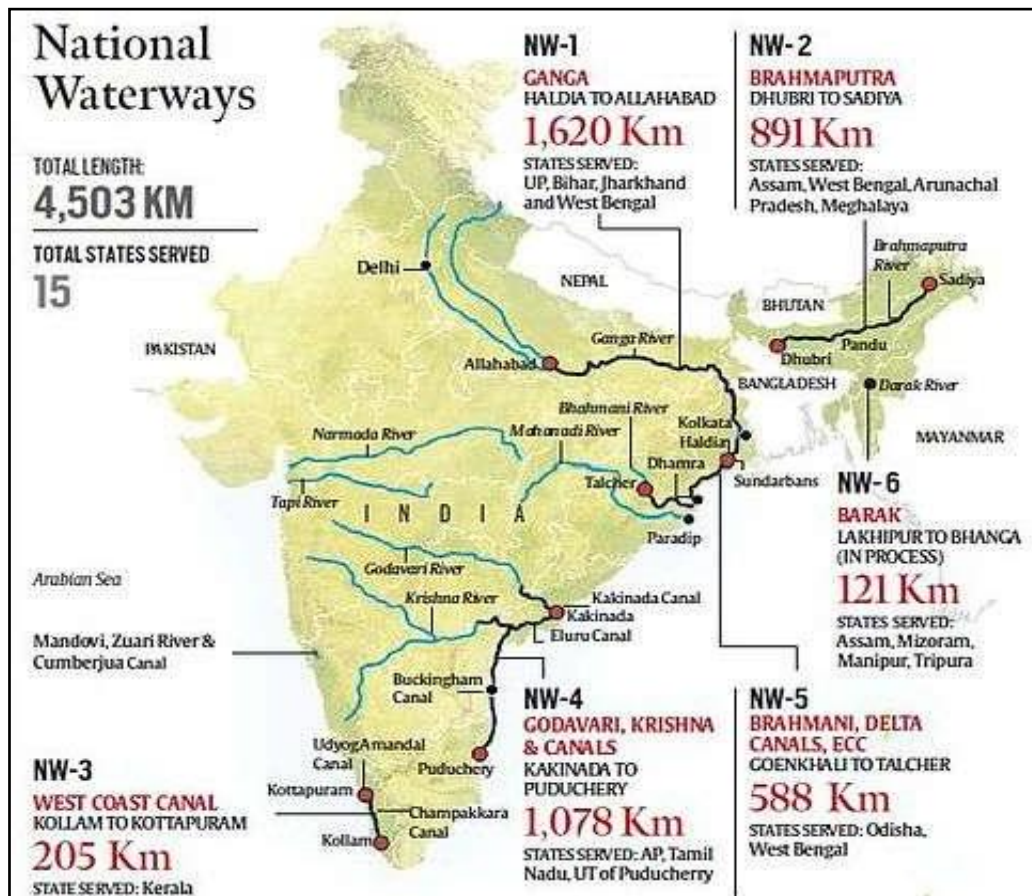


What's the reason Kerala seeing the heavy rainfall?

- Kerala is currently in the grip of at the very least three rainfall-triggering weather conditions.
- There are powerful Westerly winds coming in out of into the Arabian Sea, and bringing water to Kerala.
- The existence of an east-west shear zone that is located 10 degrees to the north on the peninsula's southern portion.
- This vertical zone which can be found in the middle, lower or higher levels of the atmosphere it allows active winds at high speed to come into contact.
- This zone also permits monsoon winds to continue to be active, resulting in an intense rainfall over the region in its influence.
- The IMD also stated that the existence of a north-south drain running across Chhattisgarh and Comorin regions, which are situated near south Kerala is causing widespread rain.
- Why is there more rain this year? The expectation of an average monsoon during September and August are based on the recurrence of La Nina which is the opposite to El Nino and characterised by the cooling of the waters of the Central Pacific.
- The result is likely to provide more rainfall to the Indian subcontinent, a change from the El Nino that usually dry down the rainfall.
- However there is also it is the Indian Ocean Dipole, another indicator of importance, characterized by a shift in warm water between western and eastern portions of the Indian Ocean, to the monsoon, is likely to be negative.
- The outlook for the negative is likely to have a negative impact on the monsoon season, but M. Mohapatra, Director-General, IMD, said that it was unlikely to result in a significant deficit due to the favorable effects from La Nina.

Topic 81. NATIONAL WATERWAYS

Important for subject: Geography



In order to promote inland water transportation (IWT) across the nation there are 111 inland waterways that located across the 24 states of India have been designated to be National Waterways (NWs) under National Waterway Act, 2016.

- Based on the findings of the feasibility tests and technoeconomics as well as Detailed Project Reports (DPRs) of these NWs, an action plan was developed in collaboration with IWAI in 26 NWs that were found suitable for the movement of cargo or passengers.
- Important National Waterways:
- National Waterway-1: Allahabad-Haldia stretch of the Ganga-BhagirathiHooghly River (1620 Km) declared as NW in 1986 in the states of Uttar Pradesh, Bihar, Jharkhand and West Bengal.
- The project was conceived through IWAI with the technical and financial support from the World Bank at a revised estimate of Rs. 4633.84 cr.

- National Waterway 2: Sadiya-Dhubri section of Brahmaputra River (891 km) designated as a National Waterway in 1988 in the state of Assam.
- National Waterway 3: Kollam-Kottapuram section comprising West Coast Canal and Champakara and Udyogmandal canals (205 Km) declared a National Waterway in 1993 in the state of Kerala
- National Waterway-4: Kakinada-Puducherry stretch of canals and Kaluvelly tank, Bhadrachalam-Rajahmundry stretch of river Godavari and WazirabadVijayawada stretch of river Krishna (1078 Km) declared as National Waterway in 2008 in the states of Andhra Pradesh, Tamil Nadu and Union Territory of Puducherry.
- It is the Krishna River (Vijayawada - Muktyala) across approximately 82 kilometers, the stretch of the river Krishna that runs between Vijayawada as well as Galagali forms part of the the declared National Waterway-4. However, there is no development activity on this stretch was completed under the Sagarmala scheme.
- National Waterway 5: Talcher Dhamra stretch of Rivers Geonkhali and Charbatia stretch of East Coast Canal, Charbatia-Dhamra stretch of Matai River and Mahanadi Delta Rivers (588 Km) declared a National Waterway in 2008 in the states of West Bengal and Orissa.
- Inland Waterways Authority of India It is a legal entity created in 1986 to develop and control of inland waterways to facilitate navigation and shipping.
- It is primarily involved in projects that focus on construction and maintaining IWT infrastructure along national waterways, through grants by the Ministry of Shipping.
- It is headquartered in Noida and has regional office in Patna (Bihar), Kolkata (West Bengal), Guwahati (Assam) and Kochi (Kerala) as well as sub-offices in other cities across India.

Topic 82. NADIS

Important for subject: Geography

The nadis of Rajasthan as a form of insurance against dry summer.

- Nadis also known as Talabs (ponds) They are shallow depressions scattered across the countryside in the desert areas that are part of Jodhpur as well as Barmer districts.
- The water that flows through these tanks will quench thirst of both human and cattle beings, as and wild animals in the dry times later in the year.

- The rural communities utilize these structures to store rainwater by making use of their traditional knowledge and locally accessible materials, in light of the erratic and limited rainfall in the state.
- They'll create micro-climates that will increase the local resilience against the unpredictable effects of climate change and global warming.
- (i)The Ramrawas Kalan village, located 49 km to the from the east from Jodhpur has two Nadis.
- (ii)The two larger structures, Deoli as well as Chan are located in Orans (associated to local gods) (or sacred forests) located 10 km away from the village.
- Traditional water Conservation Systems in India: Jhalaras Jhalaras are generally rectangular-shaped stepwells, with tied steps on four or three edges in Rajasthan.
- Bawari Bawaris are distinctive stepwells which were once part of the old networks of water storage within Rajasthan's cities. Rajasthan.
- Taanka Taanka is a traditional rainwater harvesting technique that is native in Rajasthan. Thar desert region in Rajasthan.
- Taanka Taanka is a circular paved underground pit through which rainwater from courtyards, rooftops or catchments that are artificially constructed flows.
- Ahar Pynes Ahar Pynes are traditional systems of harvesting water from floods native from South Bihar.
- Ahars are reservoirs that have embankments along three sides. They are built on the top of diversion channels, similar to pynes.
- Pynes can be described as artificial rivers that flow away from rivers to capture the water from the ahars to use to be used for irrigation during dry season.
- The paddy farming in this low-rainfall region is largely on the aharpynes. PanamKeni is the Kuruma tribe (a indigenous tribe from Wayanad, Kerala) uses an exclusive kind of well, known as panamkeni, to store water. panamkeni for storing water.
- Wooden cylinders are created by taking the toddy's stems and palms for a prolonged period of time, to allow the core to rot away until just the outside layer is left.
- The cylinders, which measure 4 feet in diameter and depth are then submerged into groundwater springs that are located in forests and fields.
- Kund A Kund is a saucer-shaped capturement zone that gently slopes toward its central underground hole.

- Its main function is to capture rainwater to drink.
- Kunds appear on the sandier terrains of the western part of Rajasthan as well as Gujarat.
- Zing Zings, found in Ladakh are small tanks that store melting glacier water.
- A system of channels for guiding connects the glacier to the reservoir.
- Kuhls Kuhls are water surface channels that are located in the mountains in Himachal Pradesh.
- Zabo The Zabo (meaning 'impounding run-off') system combines water conservation, forestry, and animal health.
- In practice in Nagaland Zabo is called the Ruza method.
- Rainwater that is deposited on the forested hillsides is collected through channels which deposit the water run-off in structures resembling ponds that are built on hillside terraces.

Topic 83. CHANGPA COMMUNITY

Important for subject: Geography

The Changpas lifestyle is experiencing disruptions and shocks

- Changthang plateau Cold desert on the Changthang plateau, which lies within the Himalayan and Karakoram ranges, which extends across and to Tibet is a bioculturally distinct area.
- The environmental conditions of the region, which include arid climate as well as dense vegetation, encourage pastoralists who live at high altitudes, and are not suitable for cultivation.
- It can be chilly at altitudes that range between 4500 and 7000 msl.
- It is made up of vast grasslands, Sand deserts, high altitude lakes like Tsokar, Tsomoriri, and Pangong vast marshy stretches and rivers like Hanle as well as Indus.
- It is the only breeding ground in India for the black-necked crane as well as bar-headed goose.
- It is also the is home to snow leopards and Pallas's cat. Tibetan grey wild ass (Kiang), Tibetan gazelle as well as argali, woolly Hare, Tibetan lark, among many more.
- The Changpa are semi-nomadic They usually reside in one location for several months at a time close to pastures where their yaks, sheep, and Pashmina goats can

roam.

- They're usually located in the Changtang which is a high plateau that extends across the desert cold of Ladakh.
- The process of moving from plains to mountain pastures during the summer and back from plains to pastures in the mountains in winter is known as transhumance.
- The Pashmina goat is a breed of goat that lives in the plateaus of Tibet, Nepal, parts of Burma and adjacent regions that are part of Ladakh located in Jammu as well as Kashmir, India.
- It's also known as 'Changthangi', or 'Changra'.
- They are used to make ultra-fine cashmere wool. It is often referred to pashmina when weaved.
- Bureau of Indian Standards (BIS) has released the Indian Standard for identification, labelling and marking of Pashmina products in order to prove its pureness.
- The certification will stop the adulteration of Pashmina and safeguard the rights of the local nomads and artisans who produce Pashmina the raw material.
- It will also guarantee the pureness of Pashmina for the customers.
- There are some people who grow crops such as peas and barley however, they do it primarily for their own consumption and animal's consumption, and also to hold religious ceremonies.
- The Changpas were traditionally predominantly nomadic pastoralists who raise sheep, yak, goat and horses, to provide their food and for their livelihoods and trade in goods such as wool.
- The rotational grazing system: The Changpas follow an old-fashioned method of rotational grazing which ensures that the pastures are not overgrazed and helps to keep fodder available for the winter months.
- A variety of animal leaves manure that is added to the pastures and supports the diversity of micro-fauna as well as floral species.
- They go through five to six pastures during an yea. Each household does not make the final decision on how much pasture to move through.
- It is a decision taken by the entire group.
- A goba (village head) invites the yulpa (village assembly) for a gathering to confirm or change the season's movement. Along with the move towards pastures, amount of

animals as well as the amount of family members per pasture are as well fixed.

- The impact of climate change The impacts of climate change include shrinking glaciers, dry-up water springs and marshes that are less dense, and a decline in the quality of pastures.
- The diminished diversity and shifting the composition of livestock, with the increasing emphasis on Pashmina goats with wool that has a an excellent market value. This has resulted in a higher mortalities during winters with severe cold.
- They aren't as tough as yaks and sheep.
- The yak population has decreased which produce manure that is vital to keep the pastures healthy

Topic 84. INDIAN VIRTUAL HERBARIUM, BIGGEST DATABASE OF COUNTRY'S FLORA, IS A GLOBAL HIT

Important for subject: Geography

With information about around one lakh plant species, Indian Virtual Herbarium, the largest virtual database of plant species in the world is generating lots of attention and has proven to be a fascinating venture.

- Herbarium specimens are an important tool for taxonomy of plants conservation of habitat, habitat loss, and even climate change the prime minister Narendra Modi has recently outlined Indian Virtual Herbarium as an illustration for how the digital world could aid us in connecting with our roots.
- Created by scientists of scientists of the Botanical Survey of India (BSI),Kolkata.
- The herbarium offers information on plants belonging to different categories, like Cryptogams (spore producing plants). Phanerogams (seed bearing plants that bear seeds).
- The two groups are split into two categories, which includes genera, specimens, and types.
- Botanical Survey of India It is the top research institution that is part of the Ministry of Environment and Forests (MoEFCC) to conduct floral and taxonomic research on plants that are native to India.
- It was founded in 1890. It is comprised of nine regional circles that are located in various areas of the country.

- However , the headquarters are within Kolkata, West Bengal.
- Features: Exploration, inventorying and recording of phytodiversity in protected and general areas Hotspots, fragile ecosystems and hotspots specifically.
- Publishing of National, State and District Floras.
- Identification of threatened and red-list species and areas of biodiversity that require conservation.
- Conservation of ex-situ threatened plant species within botanical gardens.
- Study and documentation of the tradition-based knowledge (ethno-botany) related to plants.
- Develop a National databases for Indian plants, which includes live specimens and herbariums, illustrations and paintings of botanical plants and more.
- Botanical Survey of India- Key Initiatives BSI has Floristic surveys of a variety of Indian states as well as Union territories. The survey of flowers in protected areas of 68 and 26 sacred groves 01 Ramsar site 12 fragile ecosystems, and the 23 Tiger Reserves have been completed.
- To fulfill to meet the Global Strategy for Plant Conservation goal of ex-situ conservation the department has 12 botanic gardens located in various biogeographical zones throughout the country.
- BSI has also come up with an online platform called the Indian Plant Diversity Information System (IPDIS)'.

Topic 85. CREATURES THAT CROSSED AN OCEAN TO FIND INDIA

Important for subject: Geography

A bat species as well as an early lemur(IUCN Endangered) have been discovered within the Gujarat's Vastan mining of lignite.

- A variety of life forms found that live in Madagascar are akin to lines discovered in India (3,800 kilometers away) as opposed to Africa (413 kilometers).
- This was a 'difficult mystery to naturalists.
- The Zoologist Philip Sclater was perplexed by the lemurs' presence as well as their cousins, and their fossils found in Madagascar and India however, not in the nearby region of Africa and in the Middle East.
- Continental drift in plate tectonics, the massive rock plates we stand on are floating on

subterranean molten rocks, and shift 2-15 centimeters per year one another.

- A large landmass, known as Gondwana divided into two about 165 million years ago. One of them contained the present Africa in the present day Africa and South America, the other consisting of India, Madagascar, Australia and Antarctica.
- About 11 million years ago Madagascar together with India together were able to break free.
- About the time of 88 million years ago India moved to the north, shedding some parcels of land to create Seychelles.
- It was part of the Eurasian mass about 50 million years ago and gave birth to the Himalayas, and South Asia that we are familiar with.
- About 11 million years ago, it was dinosaurs who were in charge. The majority of living things had not developed.
- Assisting the Gondwana breakup Dinosaur fossils found on India as well as Madagascar are closely related and are not similar to species that are found elsewhere in Africa or Asia.
- Fragments of *Laplatosaurus madagascarensis* have been found in both India and Madagascar.
- Molecular clocks An effective technique called the molecular clock is used to calculate the moment when two types that are living diverged one another.
- This is in response to the idea that evolutionary changes to the sequence of an RNA protein molecule take place in a relatively constant manner.
- The differences in amino acids in, for instance, the haemoglobins of two animals will reveal the time when their lineages split.
- The atomic clocks are well-corroborated by other evidence like fossil evidence.
- India's central position India is a key player in the life-form distribution throughout Asia, Madagascar and Africa.
- Gondwana creatures were evicted from India some crossed over and stayed. For instance, Asian freshwater crabs (*Gecarcinucidae*) are found today throughout Southeast Asia but their most recent common ancestor was found in India.
- The Frog group, *Sooglossidae*, is found only in India and the Seychelles In India there are the Lorises, which are the closest relatives that exist to the lemurs.
- They are timid night-time forest dwellers with attractive, large eyes. It is also believed

that they have survived ocean voyages from Africa.

- They are found mostly within areas of the Northeastern States (slow loris)(IUCN: Endangered) and in the areas in the areas where Karnataka, Kerala and Tamil Nadu meet (slender loris) (IUCN Endangered).

Topic 86. STUDY OF ROCK AGAMA GIVES INSIGHTS INTO URBANISATION AND CONSERVATION

Important for subject: Geography



It is the Peninsular Rock Agama (*Psammophilus dorsalis*) is a species of garden lizard, has a significant presence in the southern part of India.

- This IISc study, which was published in Frontiers in Conservation Science looked at a variety of environmental factors that can influence the appearance of the lizard. It also revealed that they live primarily in warm and rocky areas.
- Therefore, it is evident that conservation efforts should be directed towards the preservation of rocky areas when restoring landscapes through planting trees.
- Lizards feed on insects, and are consumed by snakes, raptors and dogs. They are unable to reside in areas that do not have insects.
- This lizard is an enormous animal that is strikingly coloured with black and orange.
- They don't generate body heat therefore they have to find warmth from outside sources such as an ice-cold rock or a sun-filled wall.
- They are crucial in ecological systems from a variety of angles.
- They can tell the areas in the city that are warming and the numbers indicate how the food web is changing.

- Insects are essential to the ecosystem because they perform a myriad of functions which include pollination.
- Thus, although rocks agamas are fascinating by their own right, they also serve as an excellent model system to comprehend different aspects within the ecosystem.
- Ectotherm Ectotherm is any of the cold-blooded animal, that is an animal whose control of body temperature is dependent on external sources like the sun or a surface heated by a rock.
- The ectotherms are reptiles, amphibians and fishes and invertebrates.

Topic 87. CENTRE MAY SELL 13 BLOCK GOLD MINES IN UTTAR PRADESH AND ANDHRA THIS MONTH

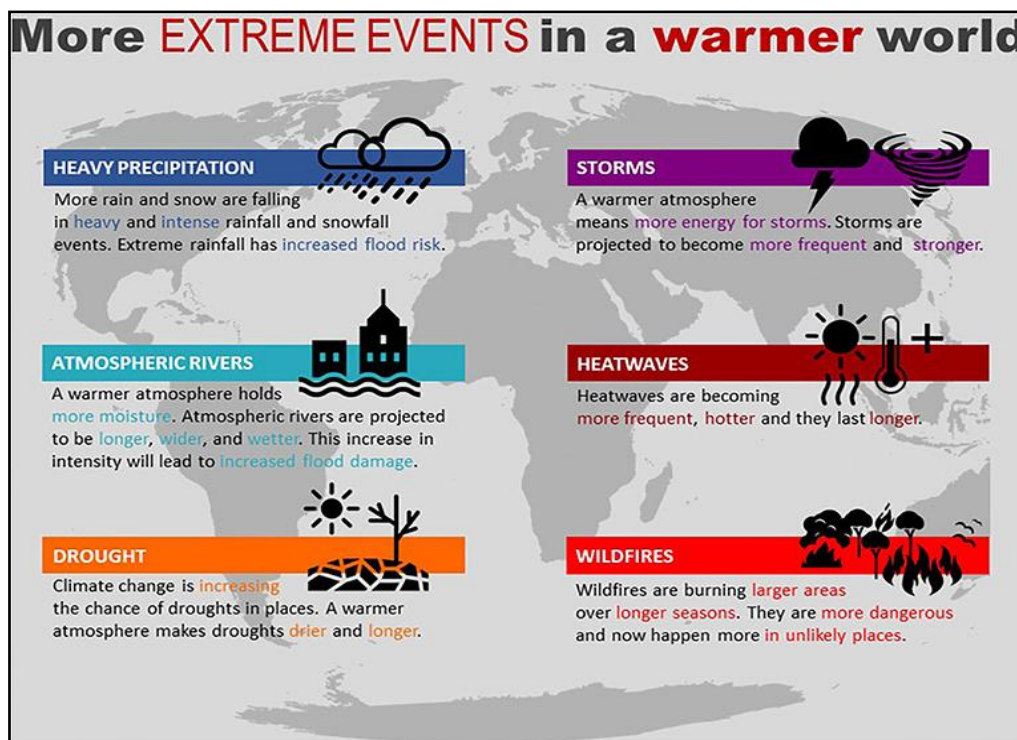
Important for subject: Geography

The government plans to place on block 13 mines of gold located in states Andhra Pradesh and Uttar Pradesh in the upcoming month, as part of efforts to provide an increase to the mining industry's contribution to the gross domestic product of the country.

- The gold mines located in Andhra Pradesh include Ramagiri North Block, Boksampalli North Block, Boksampalli South Block, Javakula-A Block Block, Javakula C Block, Javakula D Block, Javakula Block Javakula-F Block.
- Three mines are located in Uttarpradesh Two gold mines - Sonapahari Block and Dhurva-Biadand Blockare located situated in Sonbhadra.
- India is home to the gold mines of 500 million tonnes reserves.
- The biggest gold reserves are found in Bihar (44 percent) and is then Rajasthan (25 percent), Karnataka (21 per cent), West Bengal (3 percent), Andhra Pradesh (3 percent), Jharkhand (2 per percent).
- The remaining 2 percent reserves are located in Chhattisgarh, Madhya Pradesh, Kerala, Maharashtra and Tamil Nadu.
- The Government of India recently amended the Minerals Evidence of Mineral Contents Rules to permit auction of a composite licence at the G4 level to auction deep-seated minerals, which includes gold.
- Countries with the largest Reserves of Gold across the World US, Germany, Italy, France, Russia.

Topic 88. CLIMATE CHANGE FUELLING RISE IN EXTREME WEATHER EVENTS

Important for subject: Geography



According to IMD the impact of climate change has hindered the capability of forecasting agencies forecast with precision.

- The study's analysis and study of the day-to-day rainfall data for the year 1970 indicates that the amount of extremely heavy rain days was increasing, while the number of moderate or light rain days had diminished.
- If it's not raining, then it's not raining.
- If it's raining, it's heavy rain. The rain intensity is higher when there is low pressure in the system.
- This is among the major trends that can be found in this region, which includes India.
- Studies have proven that this rise in heavy rainfall and reduction in light rainfall is caused by climate change.
- The IMD has explained that climate change has boosted the temperature of the air on the surface and this in its turn increased rate of evaporation.
- Since warmer air stores more moisture, it causes heavy rain.

- Climate change's impact on weather forecasts Climate change has affected the capacity of forecasting agencies to accurately predict extreme weather.
- The India Meteorological Department is installing more radars and is upgrading their high-performance computer system in order to take on the challenge.
- While the monsoon rains did not show any notable pattern in India, however, the frequency of heavy rain events had increased while that of lighter rainfall events diminished due to changes in the climate.
- The impact-based forecast is expected to improve to be "more specific, granular and precise" by 2025 . IMD can be expected to offer forecasts that go beyond panchayat-level clusters as well as specific areas in urban areas in the next few years the IMD stated.
- Extreme cyclones - Climate changes have increased unstable conditions in the atmospheric environment, which has led to an rise in convective activity, thunderstorms lightning, heavy rain and thunderstorms.
- The intensity of the intensity of cyclones in the Arabian Sea is also increasing.
- This rise in extremity weather phenomena has created challenges to forecasters.
- Studies have shown that the ability to predict heavy rain is affected by changes in the climate.
- Improvement in prediction model The accuracy of forecasts by the IMD has increased by around 30% - 40 percent for severe weather conditions like cyclones, heavy rainfall thunderstorms hot waves cold waves, fog and heat waves in the last five years as a result of improvements in monitoring networks as well as modeling as well as computing technology.
- The death toll from heat waves and cyclones had been reduced in recent years due to an improvement in the timing of early warnings and the ability to plan, prepare, and mitigation strategies.
- The IMD is expanding its observational network through the expansion of radars, automated rain gauges and weather stations and satellites in order to increase predictability.
- IMD has installed seven radars in the northwest Himalayas , and four more are scheduled to be put up this year.
- The process for purchasing is underway to purchase the purchase of eight radars in the

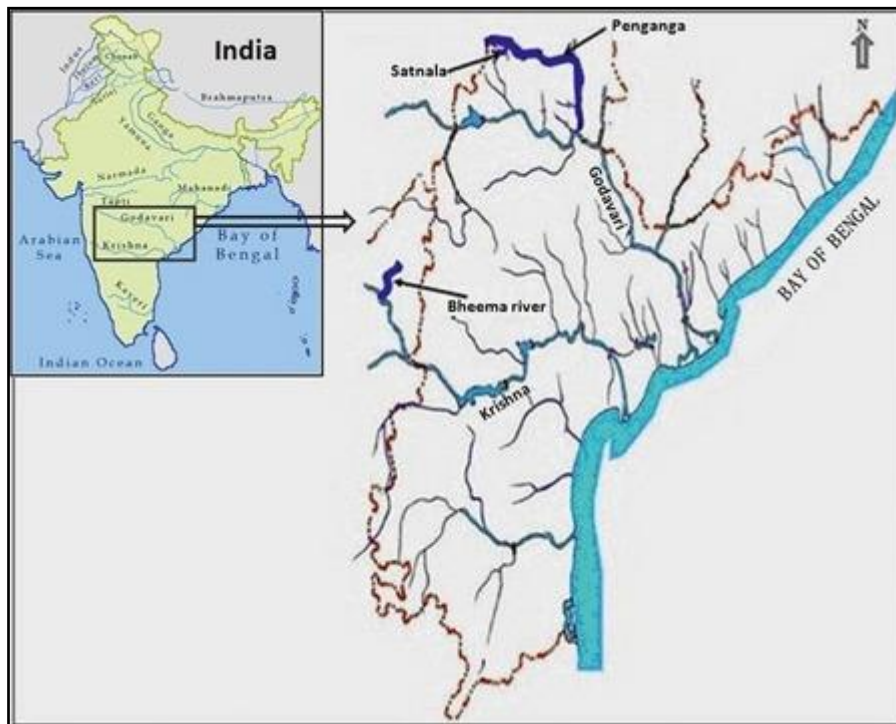
northeast Himalayan region.

- There are gaps in the remainder of the nation that will be filled by 11 radars.
- Radars is expected to rise from 34 currently up to 67 in 2025, according to the IMD has stated.
- Radars are most popular because they offer a greater resolution and are able to provide observations each 10 min.
- Climate change and the Himalayas the subject of climate change and the fragility of the Himalayas IMD stated, "Climate change is a fact, and we must plan our entire activities in line with this.
- A study conducted by MoES, the Indian Institute of Tropical Meteorology, MoES says the frequency of mini-cloud storms (five centimeters or more of rainfall in one hour) is growing in the Himalayas and can cause damages. Insufficient rainfall in the north, east and the north-east - On the impact of the changing climate on monsoons, the digital information of rainfall from 1901 to now indicates that areas of the north, east and northeast India have seen a decline in rain, whereas some regions in western India including west Rajasthan are showing an increase.
- So, there is no notable trend for the United States in general.
- The monsoon is unpredictable and can show large-scale fluctuations.
- The government has made it clear that currently, the IMD-MoES system for weather modeling has the resolution of 12 kilometers.
- The goal is to complete it in six kilometers.
- The Ministry of Earth Sciences (MoES) is also planning to upgrade its high-performance computing system - from a size of 10 petaflops and up to thirty petaflops in the next two years. This will allow more data to be incorporated into the model which will then be used with higher resolutions.
- The less range an weather model the greater its resolution, as well as the accuracy.
- In the same way, the accuracy of the region-wide modeling system will also be increased from three kilometres to mile.
- State-wise analysis: The government in front of in the Parliament the following: Uttar Pradesh, Bihar, West Bengal, Meghalaya and Nagaland have shown significant decrease patterns in the southwest monsoon rain over the last 30 years (1989-2018 which included both years).

- The annual rainfall patterns across the five States together with Arunachal Pradesh as well as Himachal Pradesh, had also seen significant decreases.

Topic 89. KRISHNA AND GODAVARI RIVER

Important for subject Geography



Krishna, Godavari levels on the rising Krishna the Krishna Basin covers Andhra Pradesh, Maharashtra and Karnataka with a total area of 2,58,948 Sq.km that is around 8percent of the territory of the nation.

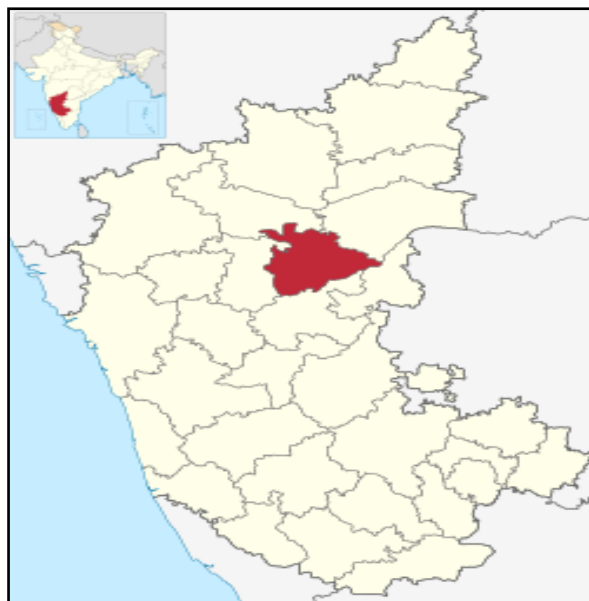
- It is bordered by Balaghat range to the north and with and the Eastern Ghats on the south and east, as well as through The Western Ghats on the west.
- It is bounded by the Western Ghats on its west.
- Krishna River rises from the Western Ghats near Jor village of the Satara district in Maharashtra at an altitude of 1,337 meters just north of the length of the river from its source until its discharge to the Bay of Bengal is 1,400 kilometers.
- The principal tributaries joining it from the right side are the Ghatprabha along with the Malprabha and the Tungabhadra and those joining from the left Bhima and The Musi as well as the Munneruare connecting the river from left.
- The majority of the basin is occupied by agriculture, accounting for 75.86 percent of

the total area.

- 4.07 percent part of it is covered with water bodies.
- Krishna River rises in the Western Ghats at an elevation of approximately 1337m.
- Just north of Mahabaleswar approximately 64 kilometers away from the Arabian Sea and flows for approximately 1400 km before flowing to the Bay of Bengal.
- The major tributaries joining Krishna comprise the Ghataprabha as well as the Malaprabha and the Bhima and as well as the Tungabhadra as well as the Musi.
- Godavari basin stretches across the states like Maharashtra, Telangana, Andhra Pradesh, Chhattisgarh and Odisha in addition to smaller areas in Madhya Pradesh, Karnataka and the Union territories of Puducherry with a total area in the range of 31281 Sq.km with the maximum width and length of approximately 995km and 583 km.
- The basin is bordered by the Satmala hills as well as the Ajanta range, and the Mahadeo hills to the north, and by the Eastern Ghats on the south and east, and through the Western Ghats on the west.
- The Godavari River flows at Trimbakeshwar in Nashik district.
- Nashik district in Maharashtra around 80km away from the Arabian Sea at an elevation of 1,067 meters.
- The duration of Godavari from its beginning to its outfall in it's outfall in the Bay of Bengal is 1,465 kilometers.
- Godavari River flows close to Nasik in Maharashtra in Maharashtra at an elevation of 1067 m.
- It flows for approximately 1465 km before flowing in into the Bay of Bengal.
- The main tributaries of the river include that of Pravara as well as the Purna the Manjra and the Penganga the Wardha, the Wainganga as well as the Pranhita(combined flows of Wainganga, Penganga, Wardha) The Indravati and the Maner along with the Sabri.

Topic 90. KOPPAL

Important for subject: Geography



The Prime Minister Narendra Modi on Sunday praised Karnataka's efforts in the toy manufacturing cluster in Koppal.

- It is the Koppal Toy Cluster (KTC) is the first of its kind in the country that went into operational in April 2022.
- Kinnal is a renowned place with a vast artistic heritage.
- The city was once bustling center for arts and crafts, among them, exquisite sculptures in wood.
- The famous murals in the Pampapateshwara Temple, and the intricate designs on the chariot made of wood in Hampi is believed as the creations of the ancestral ancestors who were the Kinnhal craftsmen the present.
- Chitragara is the name given to the artisans.
- Wood that is lightweight is used to make toys.
- The paste that is used to join the various pieces is composed of pebbles and tamarind seeds.
- Jute rags, which are soaked and cut into pieces and then dried, powdered and then mixed together with saw dust, tamarind seeds and sawdust are transformed into kitta.
- A mixture of pebble paste and liquid gum can be used to embossing ornaments and jewellery over the entire body model.

- After the parts of the figure have been assembled Kitta is sprayed by hand over the entire figure small bits of fabric are glued to it using the paste made of tamarind.
- On top of this, is the pebble paste that forms the foundation for the painting.

Topic 91. HIMACHAL PRADESH PRONE TO NATURAL DISASTERS, SAYS STUDY

Important for subject: Geography

In the midst of Himachal Pradesh experiences the fury of nature's wrath in the form of floods, landslides and cloud bursts flash floods avalanches, and droughts year after year, natural disasters have become an issue of immediate concern, as the hills' most recent State of Environment report shows.

- The report was issued in the Department of Environment, Science and Technology.
- **What is Landslide?**
- A landslide can be defined as the motion of a large amount of rocks, debris or earth down an inclined slope due to the force of gravity.
- The areas with steep slopes, such as for instance, mountainous regions are more prone to the dangers of landslides.
- Mass motion, the mudflow, slips that rotate, and avalanches are just a few examples of land slides.
- Different types of Landslides Falls: It happens due to the sudden changes in the mass of geologic substances including boulders and rocks, which fall off the cliffs, steep slopes, or steep hills.
- Topples occur as a result of to the forward movement of units or units about a pivotal location, due to the action of gravity and the forces exerted by the adjacent units or the fluids that are trapped in cracks.
- In this kind of it is common for rocks, debris or soil slide down slopes and form the material.
- Spread: It is usually found on extremely soft slopes or on flat terrain.
- NDMA Landslide Zonation Map of India National Landslide Risk Management Strategy National Landslide Risk Management Strategy was developed by NDMA.
- It clearly conveys the message of the necessity to enhance and strengthen mitigation of landslide-related disasters, landslide preparedness and relief mechanisms by

mapping early warning systems (EWS) and awareness-raising and capacity building.

- It also provides for the formulating mountain zone regulations and policies and the mitigation of landslides that cause problems.
- National Institute of Disaster Management (NIDM) The National Institute of Disaster Management (NIDM) was established under the provisions of an Act of Parliament with a plan to serve as an exemplary institute for capacity building in India and throughout the region.
- The initiatives in this direction, which began with the establishment of the National Centre for Disaster Management (NCDM) in 1995 received momentum with the redesign of The National Institute of Disaster Management (NIDM) to provide training and capacity building.
- In the Disaster Management Act 2005, NIDM is given the responsibility of nodal authority for the development of human resources capacity building, capacity building, training as well as research, documentation, and advocacy on policy in the area in disaster-related management.
- Geological Survey of India (GSI), Ministry of Mines in conjunction along with British Geological Survey (BGS) under the National Environmental Research Council (NERC), UK funded, multi-consortium LANDSLIP project has created an initial prototype of a region-wide Landslide Early Warning System (LEWS) for India and it is being tested to be tested and evaluated through GSI within two test areas across India (Darjeeling district West Bengal, and the Nilgiris district in the Nilgiris district, Tamil Nadu).
- GSI has not yet developed an early warning system to avoid glacier-related disasters across the country.
- GSI has conducted research about the melting of glaciers through studying mass balance in addition to monitoring the receding or development of selected Himalayan glaciers.
- GSI via its LANDSLIP project is involved in creating an experiment in the region of Landslide Early Warning System (LEWS) built on thresholds for rainfall from 2017.
- The LANDSLIP research has produced an experimental model that will be available in 2020 that is based on the thresholds for rainfall in two areas in the test (Darjeeling district West Bengal, and the Nilgiris district in Tamil Nadu).

- LANDSLIP is funded by the UK Natural Environment Research Council (NERC)/Department for International Development (DFID) Science for Humanitarian Emergencies and Resilience (SHEAR) program.
- SHEAR's mission is to aid in improving humanitarian response to disasters by improving the monitoring, assessment, and prediction for natural hazards as well as threats across sub-Saharan Africa as well as South Asia, and, by working with users using this technology to minimize the effects of natural disasters.

Topic 92. WHAT'S THE CAUSE OF ARCTIC WARMING? SHOULD INDIA BE CONCERNED?

Important for subject: Geography

On August 11, Finnish Meteorological Institute researchers published their findings within the Communications Earth & Environment journal finding they found that the Arctic is warming more than four times quicker rest of the globe.

What exactly is Arctic amplifying? What is the cause?

- Global warming is the ongoing warming of surface of the earth, has been accelerated because of to human or anthropogenic activities prior to industrial times, has increased the annual average temperature of 1.1 degree Celsius.
- Although changes are evident all over the globe and across the globe, any shift in temperature of the air and its net radiative balance are likely to result in more significant changes at the poles of the north and south.
- This phenomenon is called the polar amplification.
- These changes are most evident in the northern latitudes and are also known as Arctic amplifying.
- In the multitude of global warming-related reasons for this amplification the feedback from ice albedo, lapse rate feedback water vapour feedback, and ocean heat transfer are the most important factors.
- Snow and sea ice possess an albedo that is high (measure of reflectivity on the surface) meaning that they reflect most of solar radiation, as opposed to the land and water.
- In the case of the Arctic global warming has resulted in the loss of sea ice.
- As sea ice melts it will mean that it is expected that the Arctic Ocean will be more

adept at absorbing solar radiation and thereby accelerating the amplifying.

- The lapse rate, or the speed at which the temperature drops as elevation increases decreases with increasing temperature.
- Studies have shown that the ice albedo feedback and the feedback on lapse rate are the main cause of 40 percent as well as 15% the polar amplifying, respectively.

What do prior studies suggest?

- Research has shown that research has shown that Arctic was warming twice as fast as the global average prior to the turn at the beginning of the 21st century.
- With updated data that the inter-governmental Panel on Climate Change released "Special Report" about the Ocean and Cryosphere in the midst of a changing Climate in 2019 in which it stated that the "Arctic surface air temperature has likely increased by more than double the global average over the last two decades."
- In May 2021 The Arctic Monitoring and Assessment Programme (AMAP) declared it was likely that the Arctic has warmed up three times faster than the rest of the world and the probability of sea ice totally disappearing during summer is 10 times more likely when the climate is warming by two degrees Celsius above preindustrial levels.

What are the implications from Arctic warming?

- The reasons and effects of Arctic amplifying are cyclical the possible cause could also be a result of the Greenland Ice Sheet is melting at a alarming rate and the amount of sea ice is extremely reduced since 2000, as evidenced by the thin and younger ice sheets replacing the older and more thick ice sheets.
- Greenlandic Ice Sheet holds the second highest amount of ice, second only to Antarctica which is why it is vital to maintain an even sea.
- In the year 2019, this was the main reason of the rise in sea level by around 1.5 meters.
- If the sheet melts completely, sea level could increase by 7 metres, and be capable of subdividing island nations and coastal cities of major importance.
- Warming of the Arctic Ocean and the seas in the region, along with the acidification of the water, and changes in salinity levels are affecting the diversity of the ocean of marine species and dependent species.
- It is increasing also the frequency of rain, which affects accessibility and availability for the lichens to animals like the reindeer.

- The Arctic amplifying is leading to massive starvation and death in the Arctic wildlife.
- Permafrost in the Arctic is melting, it is releasing methane and carbon, both of which are the main greenhouse gases that contribute to global warming. Experts are concerned that the thaw as well as the melting will release long-dormant viruses and bacteria which were trapped in the permafrost, and could be the cause to illnesses.
- The most well-known instance of this is the permafrost melt that led to an outbreak of anthrax in Siberia in the year 2016, when around 250,000 reindeer perished.

What impact will this have on India?

- A study entitled 'A possible connection with Arctic sea ice as well as the late season Indian Summer monsoon rainfall extremes In 2021, an ensemble consisting of Indian and Norwegian researchers found that decreased sea ice in the Barents-Kara region of the sea can result to intense rainfalls during the latter part of the monsoons between September and October.
- The changes in the atmosphere's circulation caused by to shrinking sea ice with the warm temperatures of the Arabian Sea contribute to enhanced precipitation and extreme moisture. in 2014.
- India installed IndARC, the first Indian moored-underwater observatory located within the Kongsfjorden fjord, Svalbard, to observe the effects of changes to the Arctic Ocean on the tropical events like monsoons.
- According to the report of the World Meteorological Organization "State of Global Climate in 2021' the sea levels across that Indian coastal areas is growing more than the average global rate.
- One of the main reasons for this increase is melting sea glaciers across the Arctic region, specifically the Arctic. Arctic Monitoring and Assessment Programme (AMAP) The Arctic Monitoring and Assessment Programme is one of six Working Groups of the Arctic Council.
- AMAP is mandated to examine and monitor the condition and condition of the Arctic region with regard to climate change and pollution issues.
- Document trends and levels of processes, pathways, and their impacts on ecosystems as well as humans, and suggest actions to decrease threats that are associated with them to be considered by government officials.

- To develop sound, scientifically-based assessments that are relevant to policy and public outreach materials to aid in the development of decisions and policies.
- AMAP's work is governed through the ministers from the Arctic Council and their senior Arctic Officials.
- They have asked AMAP to assist in international initiatives that aim to decrease the global threat from climate change and pollution.
- They include The UN Framework Convention on Climate Change and the and the UNEP's Stockholm Convention on Persistent Organic Pollutants and the Minamata Convention on mercury, as well as the United Nations' Economic Commission for Europe (UN ECE) Convention on Long-range Transboundary Air Pollution.
- Arctic Council It is Arctic Council is an intergovernmental body at the highest level that was set in 1996 through an Ottawa declaration to facilitate coordination, cooperation and interaction between the Arctic States in conjunction with indigenous communities as well as the other Arctic inhabitants.
- Arctic Council Secretariat: The permanent Arctic Council Secretariat formally became operational in 2013 in Tromso, Norway.
- The members of the Arctic Council: Ottawa Declaration proclaims Canada as well as Canada, the Kingdom of Denmark(Greenland and the Faroe Islands), Finland, Iceland, Norway, the Russian Federation, Sweden and the United States of America as members of the Arctic Council.
- The Arctic Council is not a ban on the commercial use of the resources found within the Arctic.
- It only aims to ensure that the exploitation is carried out in a sustainable way that does not harm the interests of the local population and in line with the local environmental conditions.
- India began its first scientific exploration to the Arctic Ocean in 2007 and established a research base dubbed "Himadri" at the International Arctic Research Base located in Ny-Alesund, Svalbard, Norway in July 2008 to carry research in fields like Glaciology and Atmospheric sciences as well as Biology sciences.
- In March 2022 India's Ministry of Earth Science has revealed India's Arctic Policy which is called "India and the Arctic creating an alliance to promote long-term sustainable growth'.

- India holds one of 13 positions of the Observer of the Arctic Council.

Topic 93. PRODUCTION OF WHEAT IS DOWN, BUT SEVERAL CROPS SET TO SET RECORDS

Important for subject: Geography

In the context of wheat production, it is expected to fall to 106.84 millions tonnes by 2021-22, down from 109.59 million tons in the 2020-21 time frame according to the fourth edition of the Advanced Estimates of Production of Food grains for 2021-22 released by the Ministry of Agriculture and Farmers Welfare on Wednesday.

- The drop in stocks is due to the lower amount of consumption of 18.794 million tonnes in the current rabi market season -- and increased outflows due to the allocations of wheat under the PradhanMantri Garib Kalyana Yojana (PMGKAY) in the past two years.
- Pradhan Mantri Garib Kallyan Anna Yojana PMGKAY is component of the Pradhan Mantri Garib Kalyan Package (PMGKP) to help the less fortunate fight Covid-19.
- The nodal ministry will be the Ministry of Finance.
- The initial announcement was for a three-month time period (April April, May and June of 2020) which covered 80 crore people who have ration cards.
- It was later extended until November 2020.
- The program aimed to provide all those who are protected under the NFSA (National Food Security Act of 2013) in addition to 5 kg grain (wheat or rice) at no cost to be added to five kilograms of food grains already distributed by the Public Distribution System (PDS).

Topic 94. MANY PEOPLE WERE STRANDED TO THE SIDE OF ODISHA FOR MAHANADI BASIN FLOODS WERE DUE TO HEAVY RAIN.

Important for subject: Geography

It's an innovative multi-purpose scheme that was developed by Er. M. Visveswaraya in 1937 following the recurrence of catastrophic floods in the Mahanadi river.

- Its first hydro power plant was installed in the year 1956.
- Hirakud Dam is built across the Mahanadi River, close to Sambalpur city in Odisha in India.

- Type: It's an interlocking structure made comprised of concrete, earth and bricks.
- It is the longest significant earthen dam that exists in India with an efficient irrigation system created from the dam Sambalpur has been dubbed the "rice bowl" in Odisha.
- The Mahanadi River system is the third-largest of peninsular India following Godavari and Krishna and is the biggest river in Odisha state.
- The basin of the river is extended to Chhattisgarh, Madhya Pradesh, Odisha, Jharkhand and Maharashtra.
- The basin is bounded by Central India hills on the north and by the Eastern Ghats on the south as well as east, and along the Maikala range to the west.
- The source of the river is an area near Sihawa in the Bastar hills of the State of Chhattisgarh to the south of Amarkantak. Principal Tributaries for the Mahanadi river, Seonath River, Hasdeo River, Mand River, Ib Jonking River, Tel River.

Topic 95. VIZHINJAM PORT

Important for subject: Geography

Adani Group has temporarily stopped construction of the Vizhinjam international seaport after protesters from the Latin Catholic Church backed by the church entered the building site.

- The Vizhinjam International Transshipment Deepwater Multipurpose Seaport is a colossal project that was commissioned by the Government of Kerala.
- It was designed to provide container transshipment services, in addition to multi-purpose bulk cargo and break.
- The port is currently built in the landlord model, with the Public Private Partnership component on the design build finance, operate as well as transfer ("DBFOT") basis.
- The private partner the concessionaire M/s Adani Vizhinjam Port Private limited began construction process on December 5, 2015.

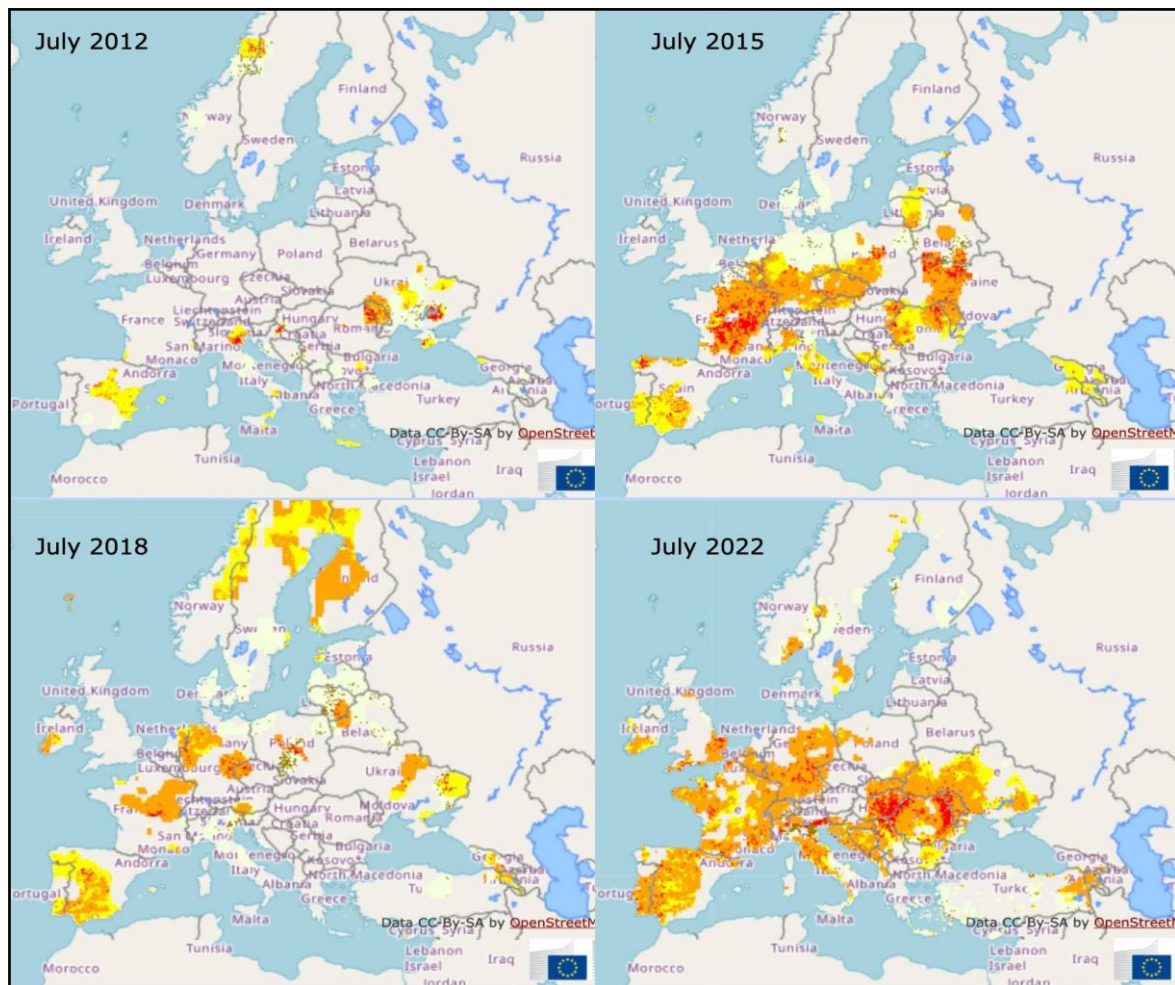
Topic 96. HOW CAN LOW LEVELS OF WATER AT THE RHINE RIVER HAVE A NEGATIVE IMPACT ON GERMANY'S ECONOMY?***Important for subject: Geography***

Running through to the Swiss Alps to the North Sea via German industrial corelands the Rhine is an important route for a variety of products, from grains to coal and chemicals.

- It's an important connection between industrial producers as well as international export terminals located in North Sea ports such as Rotterdam and Amsterdam canals, and other rivers connect with the Rhine to the Danube which makes it possible to transport goods to and from the Black Sea as well.
- Rhine River Rhine River is the second-longest river in Central and Western Europe after the Danube and is located in the Swiss Alps (in Switzerland).
- The Rhine river is known by various names based on the country in which it flows.
- It is known as Rhein in Germany; Rhine in France and Rijn in the Netherlands.
- The Rhine runs through six countries: Switzerland, Principality of Liechtenstein, Austria, Germany, France and the Netherlands before it joins the North Sea at Rotterdam.
- Danube River Danube is the second-longest in Europe following the Volga.
- It is located within the Black Forest mountains of western Germany and flows for 2,850 kilometers to its mouth at the Black Sea.
- Its course passes across 10 nations: Germany, Austria, Slovakia, Hungary, Croatia, Serbia, Bulgaria, Romania, Moldova, and Ukraine.
- Black Sea Black Sea is an inland ocean that lies between the far-southeastern region of Europe and the western edge from the continent in Asia along with the state of Turkey.
- It is connected to the Mediterranean Sea first through the Bosphorus Strait, then through the Sea of Marmara and the Dardanelles Strait, before heading south via it to the Aegean Sea, and finally it joins the Sea of Crete.
- Additionally, the Black Sea is also connected to the Sea of Azov by the Strait of Kerch.
- Bordering Countries: Romania, Bulgaria, Ukraine, Russia, Georgia, and Turkey.

Topic 97. 'THE WORST IN 500 YEARS': EUROPE'S GREAT DROUGHT, EXPLAINED

Important for subject: Geography



Physical Geography European media is packed with stunning images of riverbeds that are drying and exposed.

- The biggest rivers in Europe such as Rhine, Po, Loire, Danube -- which are typically formidable waterways cannot support even small vessels.
- Following the unprecedented summer temperatures, 2022 could be the worst year of drought in Europe for 500 years.
- China, US too are suffering from drought too. In addition to the issue of agriculture and drinking water supply The most obvious effect is the disruption to Europe's waterways.
- Europe relies heavily on its rivers to transport goods in a cost-effective manner which includes coal that is used to power stations.

- With water levels as low as less than a meter on certain areas, the majority of big ships are now inoperable.
- Global Drought Observatory (GDO) A department part of the European Commission released an "analytical report" on Tuesday, in which it reported that about 64 percent of the continent's landmass was suffering from drought, according to the data available up to the 10th of August.
- It was just "worsening" as of that date, the report said.
- Po (river) The Po is the longest river in Italy.
- It flows eastwards across northern Italy beginning with to the Cottian Alps.
- The length of the river is 652 km (405 miles) and 682 kilometers (424 miles) depending on whether the Maira is a right bank tributary is included.
- The waters that flow into the Po are a source of water that flows from a stony hillside in Pian del Re, a flat area at the head of Val Po under the northwest side of Monviso.
- The Po extends further to the 45th parallel in north, before reaching an elongated delta that extends towards the Adriatic Sea near Venice.
- Source: Monte Viso, Mouth - Adriatic Sea Loire The Loire is the longest of all rivers in France and is the 171st longest in the world.
- Its length is 1,006 km (625 miles) and a total area of 117,054 square kilometers (45,195 sq miles) which is more than five percent of France's land and its average discharge is just half the size from the Rhone. Source: Massif Central Mouth - Atlantic Ocean Rhine and Danube already covered

Topic 98. ENERGY CONSERVATION LAW TO GET A NEW LOOK

Important for subject: Environment

The Energy Conservation (Amendment) Bill 2022 seeks to make it mandatory to use non-fossil resources, including biomass and ethanol, for energy and feed stocks, in addition to the utilization of green hydrogen as well as green ammonia.

- The plan also proposes to expand the coverage of Energy Conservation Building Code and include large residential structures within the energy conservation regulations.
- The Energy Conservation Act, 2001 was amended last year 2010, to address a number of new issues that emerged from the evolution of the market for energy over time and to ensure the most efficient and efficient use of energy as well as its conservation.

- To enable the state commissions for electricity regulation the bill would permit commissioners from the state to create rules regarding the submission of requests to the commission as well as the charges to be paid.
- The bill also allows the state government to set regulations regarding the fees that are charged for services provided by designated agencies encouraging efficient use of energy and conservation, as well as the creation of the budget for the agency designated.
- A legal framework to create carbon markets with the aim of promoting actions to reduce emissions, leading to increased investment in areas of energy efficiency
- Alongside the plan to increase the number of members in the body that governs the Bureau of Energy Efficiency, the bill intends to give the Bureau to establish regulations for the agency that could be competent to fulfill the functions of the Bureau as well as the technical qualifications required to conduct tests on samples.
- The bill further stated that state governments should establish an account to be known as the "State Energy Conservation Fund" in order to encourage the use efficiency in energy use and the conservation of it throughout the entire state.
- The fund will be credited with grants and other funds from the government of the State, Centre and any other organization or person
- In the framework of regulation to regulate carbon trading the federal government, or any agency authorised by it can issue a carbon credit certificates to any authorized entity that meets the rules in the scheme for carbon trading.
- The entity that is registered will be authorized to purchase or sell carbon credit certificates as per the trading schemes for carbon credits.
- The amendment is designed to build on the work done to date.
- As with the standards for appliances and equipment the energy consumption standards will be defined in the case of motor cars, vessels, and other vessels in the water as well as industrial units and buildings.
- Government officials will also be able to ban the production or importation of automobiles or watercrafts that don't meet the energy standards that are prescribed.
- Each building, whether commercial, industrial or residential -- that exceeds the same energy consumption will be required to comply with the latest green building standards.

- The buildings will have in order to make sure that at a minimum some of their energy use is derived from renewable or non-fossil energy sources.
- India has had a plan to reward energy efficiency more than a decade.
- The program, which is run through BEE, the Bureau of Energy Efficiency (BEE) is known as PAT (perform to achieve, complete and trade) and permits units to receive efficiency certificates when they surpass the standards for efficiency that are set by.
- The ones who aren't doing well can purchase these certificates to ensure they continue to operate.
- Carbon markets in the region or at home However, they are operating across a range of locations -- especially in Europe in which the emissions trading system (ETS) is based with a similar National Hydrogen Energy Mission (NHM) about The National Hydrogen Energy Mission: Concentrate on the production of hydrogen from renewable energy sources.
- To link India's expanding renewable power capacity with an economy based on hydrogen.
- India's ambitious target of 175 GW by the year 2022 was given some momentum by the budget of 2021-22 that included an amount of Rs. 1500 cr to the development of renewable energy as well as NHM.
- Hydrogen usage will not just assist India in meeting its emissions targets under the Paris Agreement, but will help reduce dependence on imports from fossil fuels.
- Hydrogen The element Hydrogen is the lightest and the first element on the periodic table.
- Because hydrogen's weight is lower than that of air, it is able to rise in the air and is not often found in its pure form. H.
- At normal pressure and temperature hydrogen is a non-toxic, non-metallic and tasteless, odourless extremely combustible and colourless diatomic gas.
- The fuel Hydrogen is non-emitting combustion fuel made with oxygen.
- It is used in fuel cells as well as internal combustion engines.
- It can also be used fuel for spacecraft propulsion.
- The type of hydrogen is Grey Indian's main source of production. It is extracted from hydrocarbons(fossil fuels natural gas, fossil fuels).
- By product CO Blue Hydrogen: Derived through fossil-fuels.

- Product: CO, CO By products are stored and captured and are therefore better than grey hydrogen.
- Green Hydrogen: Produced by renewable energy sources (like Solar, Wind). Electricity converts water into oxygen and hydrogen.

Topic 99. INDIA'S HIGHER CLIMATE TARGETS

Important for subject: Environment

INDIA'S CLIMATE TARGETS: EXISTING AND NEW			
Target (for 2030)	Existing: First NDC (2015)	New: Updated NDC (2022)	Progress
Emission intensity reduction	33-35 per cent from 2005 levels	45 per cent from 2005 levels	24 per cent reduction achieved in 2016 itself. Estimated to have reached 30 per cent
Share of non-fossil fuels in installed electricity capacity	40 per cent	50 per cent	41.5 per cent achieved by the end of June this year
Carbon sink	Creation of 2.5 to 3 billion tonnes of additional sink through afforestation	Same as earlier	Not clear.

Two key ingredients of Modi's Glasgow Panchamrit are now official goals.

- The targets of reducing emissions intensity, as well as increasing the percentage of non-fossil-fuels in electricity generation seems to be a difficult task to reach India's NDC and national commitments. The NDC has been revised with the two pledges that are improvements to current targets and will be presented for consideration by the UN climate body.
- The Paris Agreement requires every country to establish self-determined climate goals that must be gradually revised with more ambitious targets every couple of years.
- The first NDC was presented in the year 2015 just prior to when the Paris Agreement was finalised.
- Two promises Modi was able to make in Glasgow are not yet translated into targets for the government.
- The Prime Minister had declared that India's generation capacity will reach 500 GW by 2030.
- He also had stated that India will cut at minimum one billion tonnes of carbon dioxide

equivalent out of its projected emissions from now until 2030. Both of these promises were a bit elusive.

- The 500 GW non-fossil energy electricity capacity goal for 2030 isn't an easy task.
- Of the total installed power of 403 GW more than 236 GW which is 58.5 percent, is derived from fossil fuel sources and non-fossil energy sources comprise not just renewables such as wind and solar but also nuclear power, hydropower and other sources, comprise just one-third of the.
- Capacity increases from non-fossil sources will need to double within about 10 years in order to get to the 500 GW target.
- The installed capacity for electricity has increased by more than a third over the past 10 years (from the 199 GW of 2012 up to 403GW today) however, it's not just due to fossil fuels that are not used for electricity.
- Although renewable energy has seen significant growth, capacity installed from fossil fuels have doubled during this time.

Topic 100. PRINCIPLES OF INTERNATIONAL ENVIRONMENTAL LAW

Important for subject: Environment

General Principles of Environmental Law:

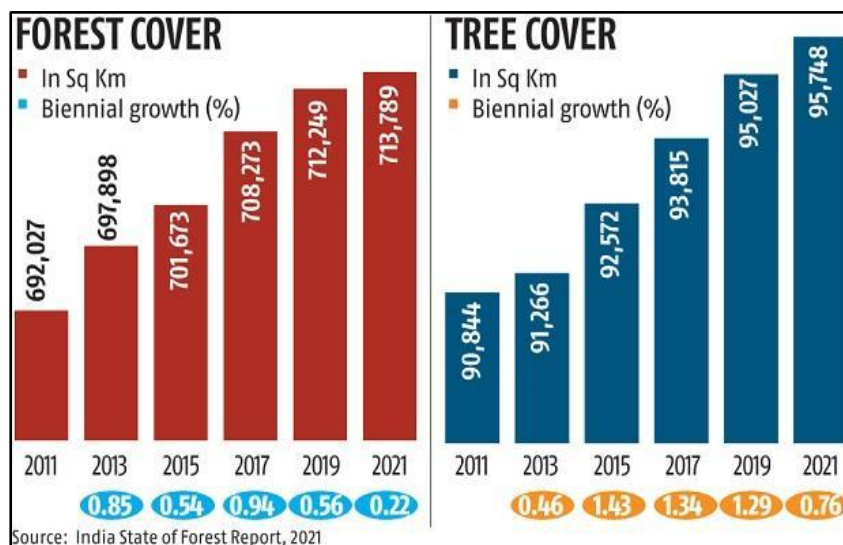
- Sovereignty and the Responsibility Principle International Environmental law evolved from two contradicting concepts.
- The principle that is first is that states have sovereign rights to the natural resources they possess.
- In the second, states should be careful not to cause harm to the environment.
- But, the notion of sovereignty isn't absolute and the state's primary obligation is not to create environmental damage in the environmental conditions of neighboring states.
- The 1992 Rio Declaration stated that: "states are granted, in compliance with international law principles the sovereign right use their resources in accordance to their respective development and environmental policies and have the obligation to ensure that the activities under their area of control or authority don't cause harm to the natural environment in states or in areas that are not within the boundaries of their national control
- The Precautionary Principle This principle states that, if there is a high probability

that an activity could result in environmental harm It is preferential to stop the activity right immediately rather than wait for scientific proof that is incontrovertible.

- This principle is outlined by the Rio Declaration, which stipulates in principle 15 of the Rio Declaration, where there are "threats of irreparable harm, the absence of scientific certainty should never be used to justify a basis to delay the implementation of cost-effective measures that stop environmental degradation
- The Principle of Prevention Principle In this principle states are under the obligation of preventing any damage that occurs within its territory.
- The cost of preventing environmental damage is lower more simple, less time-consuming, and safer for the environment rather than responding to damage that already occurred.
- The principle of prevention is the principle that underlies laws that regulate the production and transportation, treatment, storage and disposal of hazardous waste as well as laws that regulate how pesticides are used.
- The "Polluter pays" Principion "Polluter Pays" Principle "polluter is the one who pays" principle has long been a major idea in environmental law.
- A state that is responsible for violating international law must cease the harmful conduct that could cause damage to the environmental conditions and then rectify the damage which existed before the unlawful act.
- In this case, when the state is not able get the condition back due to the impossibility of it the state must provide compensation.
- Sustainable Development Principle. The principle of sustainable development was established by the 1987 Brundtland Reports as a method of development that meets the requirements of the present while not impairing the capacity of the next generations to satisfy their own demands.
- A sustainable approach to development, expressed in international agreements, includes at least three aspects:
 - Equity intergenerational
 - Sustainable utilization of natural resources
 - Integration of development and environment.

Topic 101. INCREASING THE FOREST COVER

Important for subject: Environment



Forest cover status: In the India State of Forest Reports released by the Ministry indicates that at the national scale, forest cover has grown by 21,762 sq km in the last decade.

- There isn't any trend of decreasing in the area of forest cover in the country. According to the most recent ISFR 2021 total forest cover in the nation has grown by 12,294 square kilometers over the past 7 seasons (ISFR 2015 ISFR 2021).
- Actions taken for afforestation purposes by MOEF&CC Green India Mission (GIM) is an Centrally Sponsored Program, which is one of eight Missions listed in the National Action Plan on Climate Change.
- It is aimed at protecting improving, restoring and protecting India's forest cover as well as reacting to Climate Change by undertaking plantation actions in the forest as well as non-forest zones.
- Nagar Van Yojana (NVY) It was launched in the year 2020, and is aimed at creating 400 Nagar Vans and 200 Nagar Vatika in the country in the years 2020-21 until 2024-25.
- It is a part of a plan to substantially increase the amount of tree outside forests and the green cover, enhancing biodiversity and environmental benefits to urban and periurban regions as well as improving the living standards of urban dwellers by utilizing the money from the National Fund of the Compensatory Afforestation Fund Management and Planning Authority (CAMPA).
- "School Nursery Yojana' (SNY) is being implemented from the year 2020 , for the

duration of five years, in which students from the classes of Sixth, Seventh and Eighth are enrolled in all private and public schools run in the form of State Boards/ Central Government

- Boards across the country are actively involved in the creation of nursery facilities plant seedlings, raising them and planting them as part of the school program.
- Other: Activities related to afforestation are also covered by diverse funding sources like Mahatma Gandhi National Rural Employment Guarantee Scheme, Compensatory Afforestation Funds under the Compensatory Afforestation Fund Management and Planning Authority (CAMPA).

Topic 102. IS INDIA'S BIODIVERSITY GETTING EXPLOITED WITHOUT BENEFITS TO COMMUNITIES?

Important for subject: Environment

Biodiversity Data on the website of the National Biodiversity Authority (NBA) provides evidence that 56.1 percent of applications that have been approved through the Authority under the access and benefit sharing system in 2006 were between the fiscal years 2020-2021, and 2021-2022.

- Access and Benefit Sharing Clearing House (ABSCH) The Access and Benefit-sharing Clearing House (ABS Clearing House, ABSCH) is a platform for sharing information about benefits and access that was established in article 14 in the Nagoya Protocol, as part of the clearing-house mechanism set out in Article 18 Paragraph 3 of the Convention.
- The ABS Clearing-House is a key instrument to facilitate an effective implementation of Nagoya Protocol by enhancing legal certainty, transparency and clarity regarding access procedures and to track the utilization of genetic resources throughout the value chain.
- Through making pertinent information about ABS accessible The ABS Clearing-House helps users access the genetic resources, as well as the traditional knowledge, as well as help those who provide them fairly and fairly get the benefits from their use.
- Biological Diversity Act 2002 The act was passed in the year 2002. It aims to ensure conserving the biological resources, ensuring the sustainable use of them as well as ensuring fair and equitable sharing of benefits due to the knowledge and use of

biological resources with local communities.

- India is also among the first signatories to the Convention on Biological Diversity 1992 which recognizes sovereign right of states to make use of the resources of their Biological Resources.
- Important Features in the Act
- The Act prohibits the following acts without the prior approval of the National Biodiversity Authority: Any individual or organization (either situated within India and not) seeking any biological resource found in India to conduct research on it or for commercial use.
- Transfer of the results of any research related to biological resources found in, or derived from India.
- The assertion of intellectual property rights over any invention that is based on study of the biological resources that are derived from India.
- Every offense that is a result of the Act is not a crime that can be prosecuted and is not a criminal offence The Act envisaged three levels of structure to regulate the use of biological resources. National Biodiversity Authority (NBA) The State Biodiversity Boards (SBBs) The Biodiversity Management Committees (BMCs) (at local levels) The Act grants these authorities specific funds and a separate budget for carrying the research projects that deal with the natural resources of biological nature of the country.
- It will supervise the usage of natural resources and their sustainable use and will control the financial investments as well as their return , and get rid of the capitals in the manner that is appropriate.
- In this law under this act, it is the Central Government in consultation with the NBA shall inform endangered species of their threats and prohibit or limit their collection rehabilitation and conservation. Designate institutions as repositories of different kinds of biological resources. Any complaints relating to the decision of benefit sharing, or an order from or order issued by the National Biodiversity Authority or a State Biodiversity Board under this Act will be referred before the National Green Tribunal (NGT).
- National Biodiversity Authority In order to implement the provisions of the Act to implement the provisions of the act, it was established the National Biodiversity

Authority (NBA) was set up within the Ministry of Environments and Forest by the Government of India in 2003 to take on the Indian Biological Diversity Act (2002).

- The NBA is an autonomous, statutory entity with its headquarters in Chennai.
- State Biodiversity Boards (SBB) were also established in 29 states, along with biological management committees for each local entity.
- The responsibilities for National Biodiversity Authority are as follows: National Biodiversity Authority are as follows: Monitoring and prevention of actions that are not permitted under the Act.
- Offering suggestions to the government about the best way to preserve the biodiversity of India.
- Create a report about what the state can do to choose bio-diversity sites to.
- Take concrete steps to stop the granted to intellectual property rights in relation to biological resources that are locally utilized or other traditional knowledge.
- State Biodiversity Boards (SBBs) The SBBs were established by the state governments according to Section 22 under the Act.
- Biodiversity Management Committees (BMCs) In accordance with the provisions of Section 41 of the Act that every local body must form the BMC within its boundaries with the aim of encouraging conservation sustainable use, and the documentation of biodiversity. This includes conservation of habitats, preservation of habitats, of folk varieties of the Landraces and cultivars Domesticated breeds and cultivars of animals Microorganisms and the Chronicling of information related to biological Diversity Essential Functions The principal purpose for BMC BMC is to develop the People's Biodiversity Record through consultation with the local population.
- The register should contain complete information about the availability and quality about local resources in the field of biology and their medicinal, alternative use, or any other.
- Biodiversity Heritage Sites (BHS) In accordance with Section 37 of Biological Diversity Act 2002, The State Government in consultation with local bodies can declare zones of importance to biodiversity to be designated Biodiversity Heritage Sites.
- The Biodiversity Heritage Sites are defined areas that are distinct and ecologically fragile ecosystems coastal, terrestrial and inland waters as well as marine areas with

an abundance of biodiversity. Nagoya Protocol The Nagoya Protocol on Access to Genetic Resources and the fair and equitable Sharing of the Benefits arising from their use in connection with the Convention on Biological Diversity, also called the Nagoya Protocol on Access and Benefit Sharing (ABS) is an amendment that was signed in the year 1992 to amend the Convention on Biological Diversity (CBD).

- Its goal is to achieve the fulfillment in one or more of the 3 main objectives of the CBD which is the fair and equitable distribution of the benefits resulting from the use of natural resources thus aiding in the conservation and sustainable utilization of biodiversity.
- Acceptance of the Nagoya Protocol by 51 Parties including India to the CBD is a significant move towards achieving the initial of the world's Aichi Biodiversity Targets (Target 16 which is to be achieved by the year 2015 when it will be the year that the Nagoya Protocol is in force and operational) This is over a year prior to its deadline this is a first for the world.
- The key part that was played by India in the achievement of this amazing feat again highlights the world's leading position in biodiversity conservation globally.

Topic 103. PEACE PARKS AS A TRANS BOUNDARY APPROACH TO CONSERVATION

Important for subject: Environment

Biodiversity Conflicts over borders that are being exacerbated by climate change, have put certain of the world's most important biodiversity hotspots in danger.

- Even in the countries which have escaped border wars the global effort of building fences that aims to keep out humans who are increasing in the midst of increasing temperatures and political turmoil causes massive damage to habitats and animals that migrate.
- In areas of potential conflict like those of the Himalayas, Eastern Europe, the Caucasus along with in the South China Sea, this ever-growing human migration across national boundaries has resulted in violence and sometimes to war.
- Border-straddling conservation zones referred to as peace parks are the most sustainable approach to dealing with border disputes, rather than militarization or fence construction. Peace parks along the U.S.-Canada border as well as in the Himalayas are an example of success.

- Today four international peace parks stand on the other side of the boundary: Peace Arch Park (Washington/British Columbia) and Waterton Glacier International Peace Park (Montana/Alberta); International Peace Garden (North Dakota/Manitoba) and Roosevelt Campobello International Park (Maine/New Brunswick).
- Peace Parks Peace Parks "Park to Peace" can be a distinct designation that could be used to refer on any one of three kinds of Trans boundary Conservation Areas, and is committed to the celebration, promotion and/or celebration of cooperation, peace and peace (IUCN 2015).
- The protected areas can contain a variety of types of land use within their boundaries.
- The three main objectives of trans boundary protected zones typically include the protection of the biodiversity and socioeconomic growth and the development of a peace-based culture and co-operation.
- The designation and identification of Peace Parks by cooperating jurisdictions should only include those areas in which the established management objectives clearly define both a protected area as well as a no-conflict zone.

Topic 104. INDIA'S UPDATED CLIMATE PLEDGE TO PARIS AGREEMENT

Important for subject: Environment

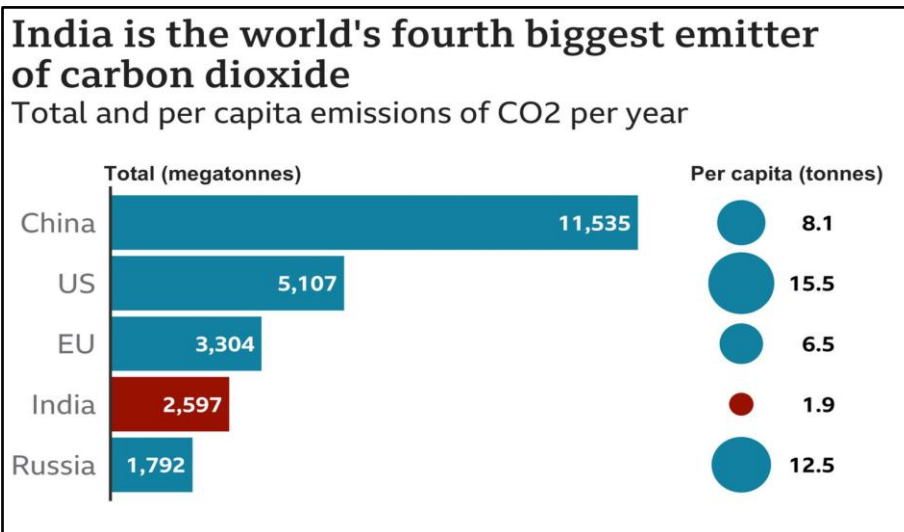
India's latest climate pledge in line with that of the Paris Agreement received the Union Cabinet's approval on August 3rd, 2022.

- Paris Agreement The Paris Agreement is a global agreement in which more than 200 countries have signed a deal to work together to cut GHG emissions and limit climate changes.
- The aim of the agreement is for a limit on global warming of less than 2 degrees Celsius, and preferably 1.5degC in comparison to pre-industrial levels.
- Thirty days from the date at least 55 parties to the Convention representing at least 55 percent of worldwide greenhouse gases emissions, have filed documents of ratification acceptance, acceptance or adhering to the Depositary.
- On October 5, 2016, the minimum threshold for the entry in force for the Paris Agreement was achieved.
- The agreement entered into effect on November 4 in 2016, currently includes the signatures of 188 parties.

- The pledges made by nations to reduce emissions are voluntary and are referred to as Nationally Determined Contributions (NDC) All Parties are required by law to report periodically on their emissions as well as on their efforts to implement them.
- It will also be a global inventory take every five years to evaluate the progress of the entire community toward achieving the goals that is the purpose of this Agreement and also to inform individual actions of the Parties.
- In accordance with the provisions of the Paris Agreement, nations must update their commitments every five years in order in order to meet their obligations in the direction of the reduction of greenhouse gas (GHG) emission reductions.
- India's INDC The first India-specific pledge which was also referred to by the name of India's Intended Nationally Determined Contribution (INDC) that was made in 2015, contained three main targets.
- It says it is expected that India will reduce the emission in its economy by about 33 to 35 percent by 2030 over the levels in 2005; increase the percentage of electricity generated from non-fossil fuels up to 40 percent by the year 2030 and also increase the forest cover, thus absorbing 2.5 or 3 billion tonnes of carbon dioxide.
- Progress of India In June 2022, the cumulative installed power capacity of non-fossil sources is 7 percent cent (when including hydropower projects of large size).
- The installed capacity of fossil fuels such as gas and coal is expected to fall to 36 percent in 2030.
- India has attained 25 per cent emissions intensity reduction in GDP from 2005 to 2016 and is currently on a track to surpass 40 percent in the next update to the INDC
- The two targets will be submitted at the UNFCCC as India's revised NDC in the form of a written.
- India has now determined to reduce the intensity of its emissions on its gross domestic product by 45 percent in 2030, compared to its 2005 levels, in accordance with the most recent NDC.
- The country is also planning to target approximately 50 percent of its total electric power capacity from non-fossil-based energy sources in 2030 (which includes large hydropower, and not only sources of renewable energies (RE) sources such as the sun and wind)

Topic 105. POWER MINISTRY INTRODUCES BILL TO ESTABLISH CARBON MARKET IN INDIA

Important for subject: Environment



Climate change power minister RK Singh on Wednesday introduced the Energy Conservation (Amendment) Bill 2022 in the Parliament. The bill will allow for the creation of Carbon markets.

- Additionally the above, the Bill is also seeking to require using non-fossil fuels that include green ammonia, green hydrogen as well as biomass and ethanol to produce energy and feedstock.
- Other changes included in the Bill include the inclusion of large residential buildings into the scope within the conservation program and expanding the scope of Energy Conservation Building Code, and strengthening the governing body of the Bureau of Energy Efficiency.
- The Energy Conservation (Amendment) Bill will make it compulsory for all buildings that have an energy consumption of 100 kW, to meet their energy requirements using renewable sources
- Through the adoption of energy efficiency measures Bureau of Energy Efficiency The BEE is a statutory organization created by the Energy Conservation Act, 2001 under the supervision of the Union Ministry of Power.
- It aids in the development of strategies and policies with the main goal of reducing energy use in India's economy. Indian economy.
- BEE collaborates with consumers, designated agencies and other organizations to

determine and use the infrastructure and resources in carrying out its tasks.

- It is a part of the Ministry of Power. Energy Conservation Building Code (ECBC) 2017: developed by the Ministry of Power and Bureau of Energy Efficiency (BEE), ECBC 2017 prescribes the energy efficiency standards for commercial buildings that are that are to be constructed in India.
- It establishes the minimum energy standards for all commercial buildings that are new and have an energy load that is 100 kW (kilowatt) or a contract demand that is 120 KVA (kilovoltampere) or more.
- The EC Act of 2001 gives the Central Government Government authority, however, state governments have the option to modify the law to meet specific local or regional needs and also to inform to the Central Government of any changes.
- ECBC 2017 was created through BEE with technical assistance from the United States Agency for International Development (USAID) under the U.S.-India bilateral Partnership to Advance Clean Energy - Deployment Technical Assistance (PACE-DTA) Program.
- Eco Niwas Samhita 2021: It's an Energy Conservation Building Code for Residential Buildings (ECBC-R) to add a new boost to India's efforts to conserve energy.
- It outlines code compliance methods as well as minimum energy performance requirements for building services and a verification framework that is compatible with Eco Niwas Samhita 2021.

Topic 106. EUCALYPTUS, ACACIA AND TEAK, NOT SAL: WHY CAG IS CRITICAL OF ODISHA'S AFFORESTATION EFFORTS

Important for subject: Environment

Conservation There was a severe deficit in meeting planting targets in Odisha due to a lack of coordination, a working plan and inadequate choice of plantation locations and plants Odisha's forest coverage was estimated at 51,619 square kilometres or 15% of the state's geographic surface, according to the India State of Forest Report 2019.

- From the total of 1,187 plantation journal journals that were selected for audit, 491 were scrutinized in accordance with the Compensatory Afforestation Fund Act (CAMPA) in 2016.
- The report further stated that even though Sal is the main indigenous species in Odisha Acacia, teak and eucalyptus were planted in the state as important species,

impacting the indigenous plant life and biodiversity of the state.

- India State of Forest Report 2021 Ministry of Environment, Forests and Climate Change (MoEFCC) has published this report. India State of Forest Report (ISFR) 2021.
- The biennial report of the Forest Survey of India (FSI) is an evaluation of India's forest resources.
- Highlights from the Report: India's forest cover has grown by 2,261 square kilometres in the last two years , with Andhra Pradesh growing the maximum area of forest that covers six47 sq km.
- The total forest cover of the country has increased by of 1,540 square kilometers of forest cover and 721 square km of forest cover when in comparison to the report for 2019.
- The total forest and tree cover is distributed over 80.9 million hectares. This represents 24.62 percent of the total surface of the country.
- The five states with the highest percentage of the increase in forest cover include Andhra Pradesh (647 sq km), Telangana (632 sq km), Odisha (537 sq km), Karnataka (155 sq km) and Jharkhand (110 sq km).
- The increase in forests or an increase in the density of forest canopy could be attributable to better conservation measures such as protection, afforestation as well as tree plantation drives, and Agroforestry.
- Of all the mega-cities in this country Ahmedabad was the largest loser in terms of forest cover.
- States with the highest forest cover. Area-wise, Madhya Pradesh has the largest forest cover in the nation and is followed by Arunachal Pradesh, Chhattisgarh, Odisha and Maharashtra. 17 states and UTs cover more than 33 percent of their land area covered by forest. In those states as well as UTs Lakshadweep, Mizoram, Andaman and Nicobar Islands Arunachal Pradesh, and Meghalaya contain more than 75% percent forest cover.
- Forest cover in proportion of the space: Mizoram, Arunachal Pradesh, Meghalaya, Manipur, and Nagaland.
- Mangrove coverage in the country: There's an additional 17 square km of mangrove coverage in the country in comparison to the previous assessment in 2019.

- The total mangrove area in the nation is 4,992 sq km. Sixty-three states with the highest mangrove coverage increases include Odisha (8 square kilometers) then Maharashtra (4 square kilometers) along with Karnataka (3 square kilometers).
- Carbon stocks: The carbon stock of the nation's forests is estimated at 7,204 million tonnes. This are an additional 79.4 million tons in carbon inventory of the nation as when compared with the previous review of the year the year 2019.
- The annual increase in carbon stocks amounts to 39.7 million tons.
- Forests prone to fires 46% of the forest cover is susceptible for forest fires. 81% are extremely susceptible, 7.85% are very extremely prone, and 11.51 Percent are highly susceptible.
- In 2030, between 45 and 64 percent of the forests within India will suffer the consequences of warming temperatures and climate change. For all states, forests (except Assam, Meghalaya, Tripura and Nagaland) are highly susceptible to climate hot places.
- Ladakh (forest forest cover 0.1-0.2 percent) is most likely to be the area most affected.
- Bamboo Forests Bamboo forests increased from 13,882 million curms (stems) in the year 2019 to 53,336 million culms by 2021.
- Problems in the north-east region did not have positive results, as the latest assessment revealed the forest cover was decreasing to the size of 1,020 sq km within the region.
- Arunachal Pradesh lost the largest forest area of 257 sq km. It was then Manipur that lost the most area of 249 square kilometers, Nagaland 235 sq kilometers Mizoram with 186 square kilometers and Meghalaya 773 sq km. In all 140 hill districts across the country in the last two years, the forest cover decreased by 902 square kilometers in the past two years.
- In the report of 2019, the forests in the hills had been increased by 544 sq kilometers.
- Compensatory Afforestation Fund The CAF Act was approved by the center in the year 2016 and the rules were announced in the year 2018.
- The CAF Act was enacted to oversee the collection of funds to pay for compensatory afforestation. It then was administered by an the Compensatory Forest Fund Ad-hoc Administration and Plan Authorities (CAMPAA).

- Compensatory afforestation refers to the fact that each when forest land is diverted to non-forest uses, such as mining or industrial production the user agency is responsible for the planting of forests over the same area of non-forest land, when the land isn't available, the land is divided into two areas of forest land that has been degraded.
- According to the rules according to the rules, 90% of CAF money must be distributed to states, while the remaining 10% is to be kept from the Centre.
- The funds could be used to treat catchment areas, natural generation as well as for the management of forests, wildlife protection and management, the relocation of villages away from protected areas, controlling human-wildlife conflicts, education and awareness-raising, distribution of wood-saving devices and similar actions.

Topic 107. HAVE COASTAL ECOSYSTEM NORMS BEEN VIOLATED?

Important for subject: Environment

This week this week, this week, the Comptroller and Auditor General (CAG) of India submitted a report to the Parliament about whether the steps that the Union Environment Ministry to conserve India's ecosystems along the coast have proved effective.

- The CAG often conducts "performance audits" of government programs and departments.
- The most recent report includes conclusions of an audit on Conservation of Coastal Ecosystems from 2015 to.
- **What are the responsibilities of the Centre regarding the protection of the coast?**
- It has also issued notices pursuant to the Environment Protection Act, 1986 which regulates actions along the Indian coast, specifically with regard to construction.
- The Coastal Regulation Zone Notification (CRZ) 2019 issued by the Ministry Classifies the coastline into distinct zones for the management of infrastructure and to regulate them.
- The three bodies responsible in the implementation process of the CRZ include the National Coastal Zone Management Authority (NCZMA) located at the Centre and the State and Union Territory Coastal Zone Management Authorities (SCZMAs/UTCZMAs) across each coast State as well as Union Territory and the District Level Committees (DLCs) in each district with a coastline and in which the CRZ notification applies.

- The bodies check if CRZ approvals given by the government have been granted as in accordance with the rules, and whether project developers who have received approval are in compliance with guidelines, and if objectives of the development plan in the Integrated Coastal Zone Management Programme (ICZMP) are achieved.
- They also assess the actions that the government has taken to achieve the goals in the Sustainable Development Goals, a set of United Nations prescribed targets for nations to eliminate poverty and developing sustainable societies.
- **What was the reason why the CAG do this audit?**
- The CAG is mandated by the Constitution to conduct investigations and make reports on publicly funded programs.
- The CAG conducted "pre-audit studies" and found that there were significant violations of the CRZ within the coastal stretches.
- The incidences of illegal construction (reducing the area of coastal land) and discharges of effluent by local entities, industry, and aquaculture farms were in the news media and the agency was compelled to conduct an extensive investigation.
- **What was the result of the audit?**
- The audit identified several categories of violations.
- One reason was that for one, the Environment Ministry hadn't notified NCZMA as a permanent entity and it was reconstituted every couple of years.
- In the absence a formal definition of membership, the body was operating as an ad hoc body.
- There have been instances of Expert Appraisal committees -- which is a body composed of scientists and senior bureaucrats who assess the viability of an infrastructure project as well as its environmental impact and were not present at the time of project discussions.
- There were instances of participants of the EAC not being more than half strength at the discussions.
- The SCZMA was not reinstated in Karnataka and it was delayed restart in States like Goa, Odisha and West Bengal.
- It was apparent that the DLCs from Tamil Nadu lacked participation from the traditional communities of the region.
- Within Andhra Pradesh, DLCs were not even in existence.

- There have been instances where projects were approved despite deficiencies within their Environment Impact Assessment (EIA) reports.
- This included consultants who were not accredited in preparing the EIA and using outdated data, not considering the environmental effects from the construction, and not assessing the risks that the project site was susceptible to, and so on.
- **What issues did the CAG discover within the States?**
- Tamil Nadu didn't have a strategy to preserve its Gulf of Mannar Islands.
- In Goa there was no monitoring system to monitor coral reefs or plans for management to protect nesting turtles.
- In Gujarat the instruments that were purchased to analyze the physiochemical characteristics of the soil and water in the inertial zone within the Gulf of Kutch weren't used.
- Sea patrolling in Gahirmatha Sanctuary, in Kendrapara, Odisha did not happen.
- A research lab in Dangmal, Kendrapara District, Odisha which was constructed in the year 2016 hasn't been functional to date.
- There was no site to communicate information about the NCZMA that the CAG discovered that was a clear infraction of the mandated rules from the Authority.
- **What's next?**
- The reports are presented to Parliament's Standing Committees of Parliament, they select the conclusions and recommendations they believe are the most crucial to the public's attention and hold hearings on them.
- In this instance in this case, the Environment Ministry is expected to be able to explain the mistakes made from the CAG and rectify the situation.
- **Integrated Coastal Zone Management (ICZM):** ICZM aims to improve the livelihoods of coastal communities as well as protect the ecosystem of the coast.
- The ICZM plan focuses on identifying the need for infrastructure and ways to improve livelihoods within coastal regions.
- Mangrove conservation is one of the elements.
- The national portion of the project involves mapping the coastline of the country and delineation of the danger line.
- It is a World Bank assisted project.
- It is managed through the Department of Forests and Environment with the assistance

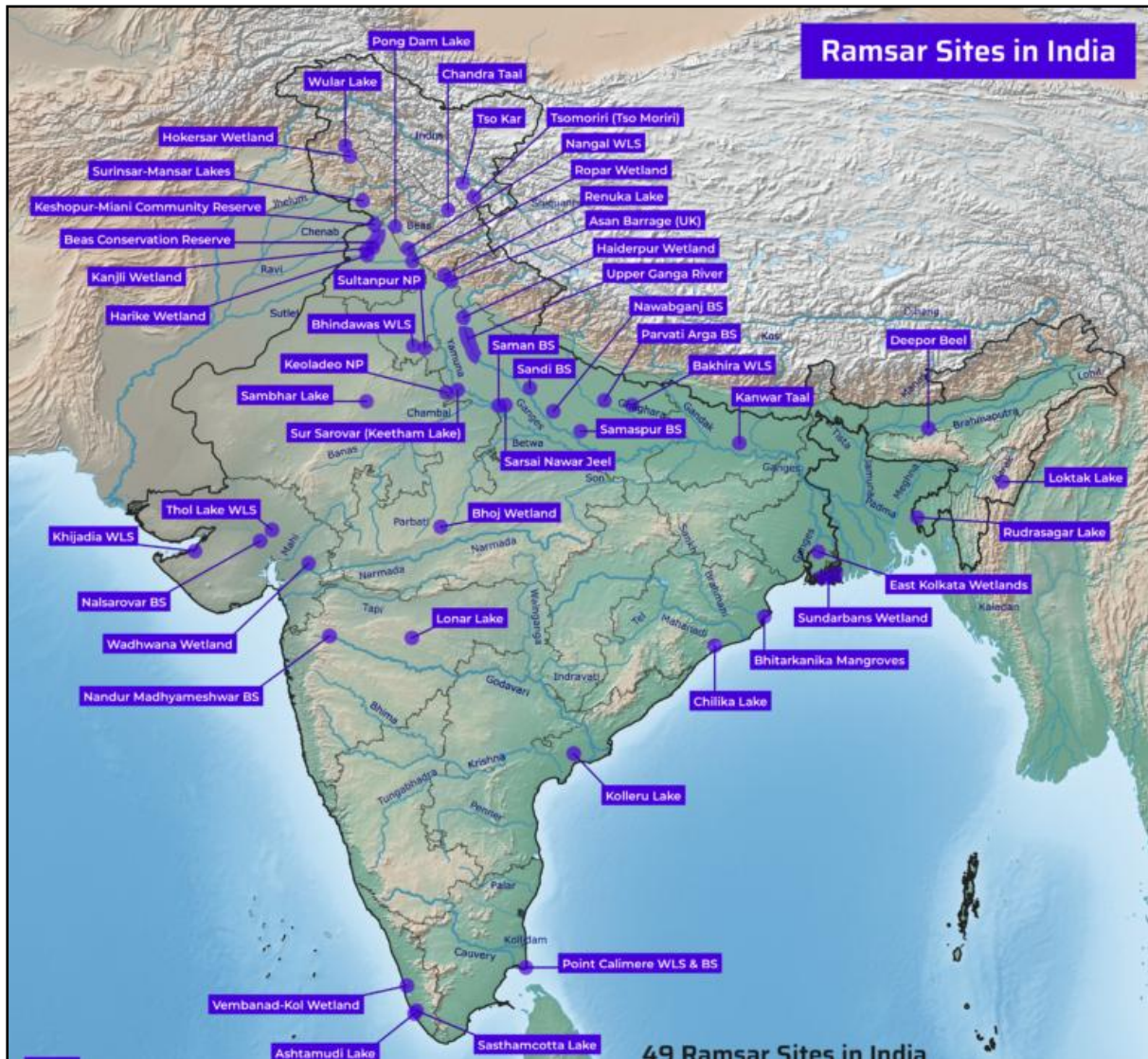
- of the Union Ministry of Environment, Forests and Climate Change (MoEFCC).
- The National Centre for Sustainable Coastal Management (NCSCM), Chennai will provide technological and scientific inputs.
 - Society of Integrated Coastal Management (SICOM) SICOM has been created under the auspices under the Ministry of Environment, Forests and Climate change.
 - Government of India with a goal of a healthy, vibrant and resilient Coastal and Marine Environment for continual and increased output of benefits for the Country as well as its Coastal Community.
 - Primary Roles, Responsibilities and Goals The Nodal Agency is responsible for strategic planning and management, as well as monitoring, execution and the successful the implementation Integrated Coastal Zone Management (ICZM) practices all across the nation and National Project Management Unit (NPMU) for the ICZM Project and the ENCORE project in all of the thirteen Coastal States/UTs.
 - To act as an expert Secretariat of the National Coastal Zone Management Authority (NCZMA) with respect to the regulations and CRZ classifications of areas of coastal land.
 - Coordinating agency as well as an interface between the different departments of Govt. Of India and the Govts and departmental lines of thirteen Coastal State/UTs.
 - The Financial Institutions (World Bank) to Enhance Coastal and Ocean Resource Efficiency Project (ENCORE)
 - Support to prevent violations of CRZ through enhanced technology-enabled enforcement, strengthened institutions, and legislative and regulatory reforms.
 - SICOM has also commenced an initiative called the Pilot Blue Flag Programme, the first of its kind program in India as part of Beach Environment & Aesthetic Management Services (BEAMS) to ensure the development of world-class Beaches in India Building capacity in Coastal State Units in planning the implementation, management and maintenance of an Integrated Coastal Zone
 - Management programs as well as other state and national organization or agencies related to the projects
 - As an intermediary between local communities and experts and the government, and disseminating and distributing instances of best practices as well as guidelines for marine and coastal ecological security as well as livelihood security of island and

coastal communities

- To perform any additional task or task as given by MOEF&CC from time to time, in the field of coastal management as well as other related tasks.

Topic 108. RAMSAR SITES

Important for Important for subject: Environment



India has added 11 more wetland sites to its number of Ramsar sites, making a total of 75 Ramsar sites that cover an area of 13,26,677 hectares within the 75th year of independence.

- India is among the Contracting Parties to Ramsar Convention that was that was signed at Ramsar, Iran, in 1971.
- India signed the agreement on February 1, 1982.
- Between 1982 and 2013, 26 locations were included in the listing of Ramsar sites.

However between 2014 and 2022, the nation has included 49 additional wetlands this number of Ramsar sites.

- Tamil Nadu has maximum no. of Ramsar sites (14 sites) and is which is followed by UP which has 10 no. of Ramsar sites.
- Wetland Geographical location and Species significant ecological and economic value
Tampara Lake the most prominent freshwater lakes in the State of Odisha situated in Ganjam district.
- The ground depression was gradually filled with water from the catchment flows and was referred to as "Tamp" according to the British and was later called "Tampura" among the people of that area.
- The wetland is home to at sixty species of birds as well as 46 species of fish as well as more than 48 varieties of phytoplanktons plus the more than 7 species of terrestrial plant as well as macrophytes.
- The wetland provides a vital habitat for species that are at risk like *Cyprinus carpio* Common pockethard (*Aythya ferina*) and the River tern (*Sterna aurantia*).
- Averaging a yield of about 12 tonnes annually The wetland is major source of income for local communities.
- In addition to fish, it also offers provisioning services, such as water for agricultural and domestic use. It is a well-known tourist and recreation spot.
- Hirakud Reservoir The largest earthen dam in Odisha was inaugurated in the year 1957.
- The reservoir is home to 54 species of fish. the reservoir. One is classified as endangered, six species are threatened species and 21 fish species.
- More than 130 species of birds have been observed at the site, among which, 20 species have high conservation importance.
- The reservoir provides an important source of water for producing about 300MW hydropower as well as irrigation of 436,000 ha of the cultural command zone.
- It also provides vital hydrological benefits by regulating floods within the Mahanadi delta, which is the social and ecological hub of the eastern coastal region of India.
- Hirakud reservoir is a tourist attraction of high quality with more than 30,000 visitors annually who visit the site.
- Ansupa Lake the largest freshwater lake in Odisha located in Banki subdivision of the

Cuttack district.

- It is an oxbow-shaped lake that was created by the River Mahanadi and is spread across a total surface of 231 ha. The wetland houses 194 birds species as well as at least 61 species of fish as well as 26 mammals, in plus 244 different species of macrophytes.
- The wetland provides a safe habitat to at least three threatened bird species *Rynchops albigollis* (EN), *Sterna acuticauda* (EN) and *Sterna aurantia* (VU) and three threatened fish species *Clarias magur* (Clariidae) (EN), *Cyprinus carpio* (Cyprinidae) (VU) and *Wallago attu* (VU).
- Ansupa lake provides freshwater needs of the surrounding regions and helps to ensure the livelihood of the local community through agriculture and fishing.
- The wetland is a huge potential for tourism and recreational activities since it is a key wintering site for birds. It is also well-known for its beauty and scenic appeal.
- Yashwant Sagar an Important Bird Areas (IBA) located in the Indore region and one of the major birding areas in the Malwa Region in Madhya Pradesh.
- Yashwant Sagar reservoir comes under the authority of the Indore City Municipal Corporation a protector of the endangered Sarus Crane in central India.
- The backwaters of lakes contain plenty of shallow areas that are ideal to waders as well as other waterfowl
- As the level of water recedes numerous islands are used as nesting grounds for waterfowl.
- Due to its huge low reed beds Wetland habitat is considered paradise to many of winter migrants.
- The water is used to supply water in the city of Indore.
- Chitrangudi Bird Sanctuary, locally called "Chitrangudi Kanmoli" It is situated in the Ramanathapuram district of Tamil Nadu.
- The wetland has been a designated protected zone since the year 1989, and was declared a Bird Sanctuary, coming under the control of Tamil Nadu Forest Department, Ramanathapuram division.
- About 50 birds belonging to thirty families were identified on the location. The most notable waterbirds seen in the site are spot-billed pelicans Little egret and large egret, grey heron open-billed stork purple and pond herons.

- Chitrangudi is situated in the midst of fields for agriculture which are where various crops are grown all through the entire year.
- The wetland also hosts numerous fishes including amphibians, molluscs, aquatic insects and their larvae, which are excellent food sources for the waterbirds arriving.
- Chitrangudi Bird Sanctuary is an ideal place to stay for winter migration birds. The complex of Wetlands such as the SuchindrumTheroor
- Its part of the SuchindrumTheroorManakudi Conservation Reserve, Tamilnadu It was formed for birds' nesting purposes and it attracts thousands of birds every year.
- About 250 bird species have been identified within the area Of which 53 are migratory species, 12 are endemic and 4 endangered. It is a constructed, underground tank and it is perennial.
- Copper plate inscriptions dating back to the 9th century refer to Pasumkulam, Venchikulam, Nedumarthukulam, Perumkulam, Elemchikulam and Konadunkulam.
- It has been declared as an Important Bird Area. It is located in the southern part of the Central Asian flyway of migratory birds.
- Vaduvur bird sanctuary, which is spread across the area of 112.638 ha. It is a huge human-made irrigation tank as well as a shelter for birds migrating in Tamil the state of Tamilnadu. Indian Pond Heron *Ardeolagrayii* was found in the majority of the tanks that were surveyed.
- A large number of wintering waterfowl species like Eurasian Wigeon *Anas penelope*, Northern Pintail *Anas acuta*, Garganey *Anas querquedula* were observed in tanks
- Vaduvur Bird Sanctuary has a varied habitat that includes a variety of inlets as well as fields that are irrigated, which provide an ideal nesting area and foraging grounds for birds.
- This site offers assistance to the species mentioned above in the critical phases of their life cycle.
- Kanjirankulam Bird Sanctuary It is a Protected area near MudukulathurRamanathapuram District, Tamil Nadu.
- India is a country that was declared in 1989. as the home of the breeding population of waterbirds that migrate in the months of October to February. They include painted storks white ibis, little egret, black ibis Great egret, little egret.
- The site qualifies as an IBA as the threatened Spot-billed Pelican

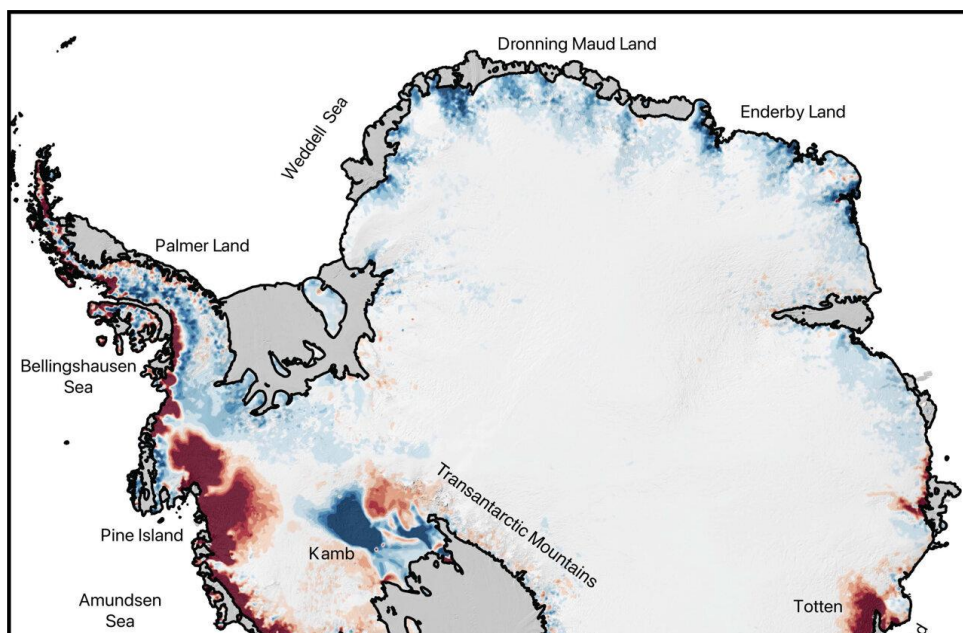
Pelecanus philippensis breeds here.

- The wetland is home to a diverse biodiversity including a wide range of threatened species like the Spot-billed pelican Oriental Darter, Oriental white Ibis and Painted Stork and also commonly found in water and shore birds such as greenshanks, plovers, stilts and forest bird species like bee-eaters and bulbuls. barbets, cuckoos, starlings and many more.
- They serve as nesting, breeding and roosting sites, as well as foraging and stopover spots for birds.
- The wetland hosts IUCN RedList vulnerable avian species such as *Sterna aurantia* (River Tern).
- It is noted as a nesting spot for several species of migratory herons that nest in the magnificent growth of babul trees.
- The site is a qualified IBA.
- Thane Creek It is located in Maharashtra, India. There are a variety of sources of freshwater to the stream, of the which Ulhas The River has the most significant and is followed by numerous drainage channels that originate from different suburban areas in Mumbai, Navi Mumbai & Thane.
- More than 202 species of avifaunal life The creek also hosts an array of 18 fish species, crustaceans, and Molluscs, 59 species butterflies and 67 species of insects and 37 species of phytoplankton along with 24 species of Zooplankton and 23 different species of Benthos.
- It is now designated as Thane Creek Flamingo Sanctuary.
- Thane creek is surrounded by mangroves along both banks and accounts for about 20 percent in the entire Indian mangrove plant species.
- This area is an important element of the wetland system in the Central Asian Flyway of the birds. It has been classified by the IBA as one of the Important Bird Area (IBA).
- Hygam Wetland is located in the River Jhelum basin and plays an important role in the role of a basin to absorb floods and biodiversity conservation site. It also serves as an eco-tourism sites, as well as a source of living security for local communities.
- The wetland is located within the Baramulla district. It is classified by the government as being one of the Important Bird Area (IBA).

- In the wake of the high rate of siltation Hygam Wetland has lost its characteristics of a wetland to an extent, and in many locations, has transformed its shape into a large landmass.
- Hygam Wetland provides a plethora of ecosystem services. These include fiber and fish as well as the supply of drinking water and water treatment flooding regulation, climate control as well as recreational opportunities. Shallabug Wetland Conservation Reserve It is located in the District of Srinagar, UT of J&K.
- Wetlands in large areas get dry between September and March.
- The region has vast Reedbeds of *Phragmites communis* as well as *Typha angustata*. It also has a the lush growth of *Nymphaea candida* and *N. Stellata* in open water.
- It is home for more than four lakh birds, including migratory and resident birds of at minimum 21 species.
- It is also essential to maintain water levels during the winter months in the wetlands and other areas of conservation significance downstream.
- The wetland is essential to recharge aquifers.
- A significant natural floodplain system.
- The wetland is the main breeding grounds for a variety of species of waterbirds.

Topic 109. NASA STUDIES FIND PREVIOUSLY UNKNOWN LOSS OF ANTARCTIC ICE

Important for subject: Environment



New research has been conducted on Antarctica includes the first map of an iceberg calving which doubles previous estimates of the loss due to glaciers and outlines how Antarctica is changing.

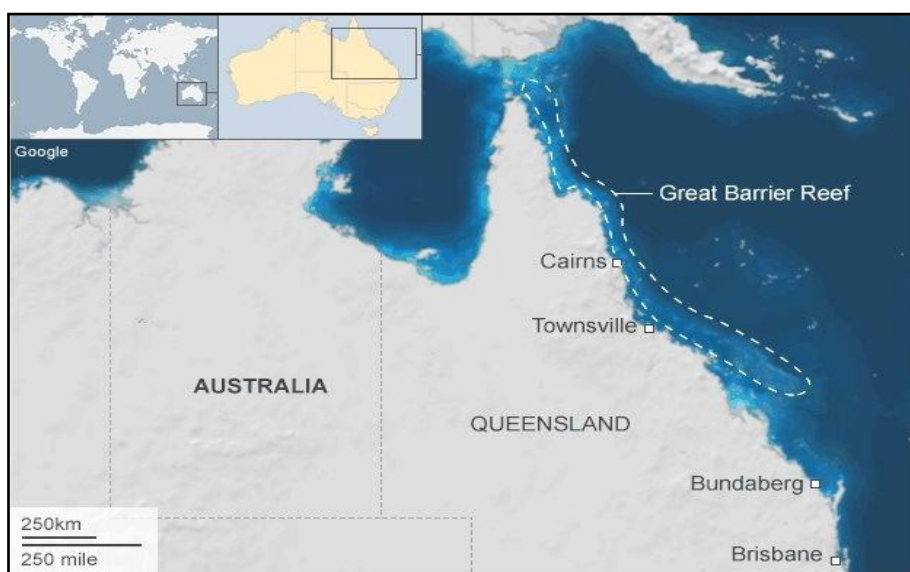
- One study released in Nature shows the way that iceberg calving, which is the break-up of ice that has formed from a front of glaciers - altered the Antarctic coastline in the past 25 years.
- The researchers discovered that the edges of the sheet had been losing icebergs quicker than the ice could be replaced.
- This surprising finding is double the previously reported estimates of loss of ice from Antarctic's floating shelves of ice since 1997, ranging from six trillion to twelve trillion tonnes.
- The loss of ice due to calving is causing a weakening of the glacier shelves and enabled Antarctic glaciers to move quickly to the ocean, increasing the rate of sea level increase.
- Iceberg Calving "Antarctica is deteriorating around its edge," says JPL scientist Chad Greene, lead author of the study on calving.
- "And as ice shelves diminish and decrease in size, the continent's enormous glaciers are likely to accelerate and accelerate the speed of global sea level rise."
- Ice shelves are like barriers to glaciers, stopping the ice from sliding down into the ocean.
- If the ice shelves are stable they follow a natural pattern of replenishment and calving which ensures their size remains fairly constant for the duration of time.
- In recent years the ocean's warming has been causing instability to Antarctica's glacier shelves by melting them from beneath, making them weaker and thinner.
- Satellite altimeters monitor the process of thinning, by recording the height change of the ice. However, up until now it was not possible to make a thorough assessment of how the changing climate could affect the calving process around the continent.
- Data gathered is from Satellite Missions ICESat1 (2003), ICESat2- (short for Ice, Cloud and land Elevation Satellite) which was launched in September.
- 15th of April, 2018, a part of the NASA's Earth Observing System, is an orbiting satellite mission to measure the elevation of ice sheets and the thickness of sea ice, along with topography of the land vegetation characteristics, cloud formation Cryosat-

2 -- European Space Agency Earth Explorer Mission that was launched on April 8, 2010.

- Envisat Envisat is a huge earth-observing satellite that is currently orbiting and currently considered to be as space debris.
- The satellite was managed through the European Space Agency, it was the largest satellite used for Earth observation by civilians. ERS which stands for European Remote Sensing satellite (ERS) was the European Space Agency's very first Earth-observing satellite that was launched in an orbit that was polar.
- The ERS program was comprised of two missions: ERS-1 and ERS-2 that was launched in the exact same orbit the year 1991 and 1995 respectively.
- The spacecraft were created as identical twins, but with an crucial difference - ERS-2 contained an additional instrument (GOME) that was designed to measure the levels of ozone in the atmosphere.
- Changes in the elevation of the Antarctic glacier from 1985 to 2021 is depicted.
- The height of ice decreases (red) when the ice sheet melts through contact with ocean waters; it increases (blue) in areas where the accumulation surpasses melting.
- Ice shelves are displayed in gray.
- The missions that provided the data are listed below.

Topic 110. RECORD CORAL COVER DOESN'T NECESSARILY MEAN THE GREAT BARRIER REEF IS IN GOOD HEALTH

Important for subject: Environment



The most extensive levels of coral cover in the last 36 years, have been documented in the central and northern regions in Australia's Great Barrier Reef (GBR).

- Recent Results Coral coverage in regions of Great Barrier Reef is at an all-time high according to data released by the Australian Institute of Marine Science.
- In the northern part area of the reef the coral cover typically fluctuates between 20 percent to 30 percent.
- Presently, the number is at 36 percent.
- This is the highest recorded since monitoring began over three decades years ago.
- However, this doesn't necessarily indicate it's in good shape.
- A high level of coral cover may be misleading because they could result from a handful of dominant species that expand rapidly following disturbance (such as massive bleaching).
- However, these corals are extremely vulnerable to disturbance and are expected to end up dying within a couple of years.
- Without further details on the specific species, it's difficult to determine exactly how much of Great Barrier Reef has been destroyed or rediscovered following the most recent massive bleaching event.
- The rate of recovery for corals is staggering following a depressing decade in which the reef had to suffer six massive bleaching events of coral as well as four devastating tropical cyclones, active eruptions of crown-of-thorns starfish and the effects of flooding on water quality and storms, begs the question:
 - what's happening? What exactly is a coral reef?
- Corals are invertebrate creatures comprising a huge collection of fascinating and colourful creatures called Cnidaria.
- They are the biggest living structure on the planet.
- Each coral is known as polyp, and thousands of these polyps reside together in colonies, which expand as polyps multiply, forming duplicates of themselves.
- The polyps contain tiny algae known as zooxanthellae that live in their tissues.
- The algae and corals have an interdependent relationship.
- The coral supplies the zooxanthellae the substances required to produce photosynthesis.
- In exchange, the zooxanthellae provide to corals with organic components of

photosynthesis, such as sugars, used by coral polyps to aid in the production of calcium carbonate skeletons.

- Apart from giving corals essential nutrients, zooxanthellae also are responsible for the distinctive and stunning colours of corals.
- Coral reefs are made up of hundreds of micro-sized polyps that form massive carbonate structures.
- Coral reefs are the biggest living thing on earth and the only living thing to see from space.
- Corals come in two varieties: hard corals as well as soft corals.
- Hard corals take calcium carbonate in seawater and create exoskeletons that are white and hard.
- Hard corals function in an approach that is the engineer of reef ecosystems, and measuring the amount the hard coral population is widely accepted as a method to assess the health of reefs.
- Soft corals are attached to these skeletons as well as the older skeletons constructed by their predecessors.
- Soft corals can also join their own skeletons into the structure as they grow older.
- The growing, multiplying structures slowly create coral reefs.
- Great Barrier Reefs- These reefs are known as the Great Barrier Reef spans 2,300 kilometers across the eastern coast of Australia and comprises more than 3,000 reefs.
- It is a remarkably diverse ecosystem with more than 12,000 species of animals and a multitude of species of marine flora and plankton.
- The significance of coral reefs: Reefs of coral are responsible for more than 25% of the marine biodiversity even though they take less than one percent of the seafloor.
- The marine life that is supported by reefs also fuels the worldwide fishing industries.
- In addition the reefs themselves, coral reef systems create \$2.7 trillion in annually in economic value from trade in services and goods as well as tourism.
- In Australia Barrier Reef, in pre-COVID times Barrier Reef in before COVID, produced \$4.6 billion in annual revenue from tourism and employed more than sixty thousand people, including guides and divers.
- Coral bleaching:
- Corals have an symbiotic bond with single-celled algae known as Zooxanthellae.

- The algae provides food for corals via photosynthesis.
- It also provides them with vibrant colours.
- When they are exposed to conditions such as pollution, heat stress, or excessive levels of acidity in the ocean Zooxanthellae begin to produce reactive oxygen species that are not beneficial for corals.
- The corals then kick out the color-giving algae from their polyps, which exposes their white exoskeleton, result in coral starvation since corals are unable to make their own food sources.
- Corals that have bleached can live on the level of bleaching and the return of temperatures back to their normal levels.
- Stress and bleaching that is prolonged in the external environment could cause coral death mass Bleaching The issue is that in the last decade mass bleaching events have been more evenly spaced in time.
- Mass bleaching year details the first Mass bleaching of 1998 El Nino Second Mass bleaching 2002.
- Most damaging and longest lasting Third Mass bleaching 2020 Fourth Mass bleaching 2022 according to Australian government's scientists 91% of the reefs it studied in the month of March had been affected by bleaching threats to Great Barrier Reef
- The reef is at the point of being eligible for an "in-danger" designation with the World Heritage Committee.
- The reef was also described in the State of the Environment Report as being in an unhealthy and declining condition.
- To ensure the protection of our Great Barrier Reef, we have to regularly keep track of and report on the condition of the reef.
- The Institute of Marine Science's longer-term surveillance program has been collecting and releasing this information since 1985.
- The most recent report gives an extensive and useful summary of how coral cover changed on 87 reefs in three areas (north central, north and south) over the last 36 years.
- The report's findings overall, the long-term monitoring team discovered that the amount of coral has increased on a majority of reefs.

- The amount of coral cover in reefs close to Cape Grenville and Princess Charlotte Bay in the northern region was restored from bleaching with two reefs sporting more than 75 percent coverage.
- in the central region, where coral cover was historically less than in the south and north and south, the cover of coral is at an all-regional high of 33 percent.
- The southern sector has a lively record for coral cover. In the latter half of the 1980s, coral coverage topped 40 percent then fell to a regional low of just 12 percent in 2011 following Cyclone Hamish.
- The area is currently experiencing an outbreak of crown-of-thorns starfish.
- Yet, the coral cover in this region remains fairly high at 34 percent.
- Findings and reality- According to Australia's Institute for Marine Sciences' report the recovery of reefs is solely due to the increase in coral cover. Let's take a look at the concept.
- The coral cover index is an extensive proxy measurement that reveals the state of the habitat.
- It's a relatively simple data to gather and report on as well as the commonly utilized monitoring metric for coral reefs.
- The observation of an abundance of coral could indicate an underwater reef in good health, and an growth in coral cover following disturbances could signal the recovery of a reef.
- However, in this case it is more likely that the reef is controlled by a small number of species, since the report indicates that the branching and plating Acropora species have triggered the growth in coral coverage.
- Acropora coral is known because of its "boom as well as boom and bust" time-frame.
- Following disturbances, such as the cyclone, Acropora species act as pioneers.
- They are quick to recruit and establish colonies empty spaces, while the more advanced plate-like species are able to rapidly cover vast areas.
- They are fast-growing. Acropora corals dominate in the initial phase of recovery following disturbances like the recent string of massive bleaching events.
- But these corals are also vulnerable to damage from waves and disease as well as coral bleaching and can disappear within a couple of years.
- The holes in the studySimply stating that a reef was recuperated by a person pulled

behind a boat in order to get a quick visual estimation of the coral's cover is similar to flying in the helicopter and saying that the forest that was destroyed by bushfires has grown because the canopy is growing back.

- The study does not provide any information on diversity, or about the number and health of the other species and animals living in and around the trees, or the coral.
- There isn't any data to support or refute it however, it is likely that local declines or extinctions of marine life that is coral-affiliated like the coral-eating fishes and crustaceans and molluscs, have also taken place.
- Without additional details at the level of specific species, it's difficult to know exactly how much of Great Barrier Reef has been destroyed or reconstructed since the most recent massive bleaching event.
- The report's prospects study, which was published in the year, looked at the distribution of coral over 44 years data from Jiigurru, Lizard Island, near the northern end of the Great Barrier Reef.
- It found that 28 of the 368 types of coral that were recorded at the site haven't been observed for more than 10 years and are in danger of local disappearance.
- Lizard Island is one location in which the amount of coral has increased rapidly after the catastrophic bleaching event.
- However, there's an increased risk that local coral species extinctions have been observed.
- Based on data about coral cover it's tempting to believe that the reef is confident.
- But if more frequent and intense storms and heatwaves are expected in the near future it's best to be wary of the reef's health or its resilience.

Topic 111. SEQUENCE FOR A JUST FUTURE: CAN SAFEGUARDS FOR DIGITAL GENOMIC DATA FROM BIODIVERSITY BE ENSURED

Important for subject Environment

Discussions on the best way to control the usage of digital sequence data (DSI) for genetic materials could delay the conclusion of Post-2020 Global Biodiversity Framework under the UN Convention on Biological Diversity (CBD).

- Digital Sequence Information (DSI) This information is basically electronic information about the sequences of genetic material that makes each biological resource distinctive.

- Potentiality of DSI The immense possibilities of DSI was highlighted during the outbreak when the public accesses to the digital version of the genome of SARS-CoV-2 which was provided by China scientists around the world, allowed researchers to create vaccines for COVID-19 with a speed that was unmatched.
- Concerns: Developing countries that are high in biodiversity think DSI offers a loophole which developed countries could circumvent CBD.
- CBD was created three centuries in the past to guarantee that people get the benefits that come from the usage of biodiversity.
- According to CBD every nation is sovereign over the genetic material it has.
- Anyone who wishes to access the resources has to first notify the country and establish mutually agreeable conditions.
- The Working Group that is open-ended to discuss to the Post-2020 Global Biodiversity Framework in Nairobi, Kenya Parties from Africa were clear that a decision regarding benefit-sharing from DSIs is crucial.
- Failure to reach to an agreement could delay the implementation of the framework.
- They recommended the establishment of an account under the multilateral benefit-sharing system that collects one percent of the retail value of all commercial earnings that result from the use of genes, the traditional knowledge that is related to genetic resources or DSIs.
- The fund, which is managed through the Global Environment Facility, could then be utilized to help in the preservation and sustainably utilizing biodiversity.
- It could also be accessible to nations and communities through a project-based and competitive way to aid in the conservation of biological diversity and sustainable usage.
- Convention on Biological Diversity (CBD) The Convention on Biological Diversity (CBD) is a legally binding treaty to preserve biodiversity, is in effect since 1993.
- It has three main goals Conservation of biodiversity.
- The sustainable utilization of the elements of biodiversity.
- A fair and equitable sharing of the benefits that result from the use genes.
- Nearly every country has ratified it (notably it is the case that the US has signed but has not yet ratified).
- Its CBD Secretariat is based in Montreal, Canada and it is part of the United Nations

Environment Programme.

- All Parties (Countries) to the Convention of Biodiversity (CBD) are regularly scheduled to meet and are referred to as Conference of Parties (COP).
- In 2000, an additional accord to the Convention called the Cartagena Protocol on Biosafety was approved.
- It entered into force on September 11, 2003.
- The Protocol will seek to defend biodiversity from potential threats that are posed by living organisms created by modern biotechnology.
- This Protocol, known as the Nagoya Protocol on Access to Genetic Resources and the fair and equitable sharing of the benefits resulting from their Use (ABS) has been adopted by the COP10 by the COP10 in Nagoya, Japan at COP10. It became effective on October 12, 2014.
- It does not just apply to genetic resources protected by CBD and to the benefits that result from their use, but also to old-fashioned knowledge (TK) that are associated with genetic resources protected by CBD and the advantages that come from their use.
- In addition to the Nagoya Protocol on Genetic Resources and the Nagoya Protocol on Genetic Resources, COP-10 also adopted a 10-year plan of action for every country to preserve biodiversity.
- The document is officially referred to by the name of "Strategic Plan for Biodiversity 2011-2020" The document outlined 20 targets that are both ambitious and achievable commonly referred to as the Aichi targets for biodiversity.
- India adopted the Biological Diversity Act in 2002 in order to implement to the requirements that are in the CBD.
- Global Environment Facility It is an independent, operating financial institution. GEF is a multilateral financial institution which provides grants to developing nations for initiatives that help the environmental sustainability and encourage sustainable livelihoods within local communities.
- The GEF was created as a fund within the World Bank in 1991
- In 1992, following the Rio Earth Summit, the GEF was reorganized and transferred from its place in the World Bank system to become an independent, permanent institution.

- Since 1994, it has been a part of the World Bank system.
- World Bank has served as the Trustee of the GEF Trust Fund and provided administration services.
- The institution is located at Washington DC, United States.
- It is focused on six identified priority areas: biodiversity, global waters, climate change the depletion of ozone, land degradation and persistent organic pollutants.
- It supports an active portfolio of more than 200 investments around the world.
- GEF is a financial instrument for: Convention on Biological Diversity (CBD) United Nations Framework Convention on Climate Change (UNFCCC) UN Convention to Combat Desertification (UNCCD) Stockholm Convention on Persistent Organic Pollutants (POPs) Minamata Convention on Mercury India is both a recipient and donor of GEF.

Topic 112. CLIMATE BONDS INITIATIVE

Important for subject: Environment

Climate Bonds Initiative is an international organization that works to mobilize global capital to support climate change.

- This was achieved through the creation and implementation of Climate Bonds Standard and Certification Scheme as well as Policies Engagement in addition to Market Intelligence work.
- It equips our Partner organizations with the knowledge and tools required to control, influence, and create changes.
- Climate Bonds Initiative is a not-for-profit that is focused on the investor.
- Climate Bonds Taxonomy the Climate Bonds Taxonomy is a reference to the climate-aligned properties and projects.
- It's a tool that can be used by investors, issuers, governments and municipal authorities to aid them in understanding what the main investments are that can lead to an economy that is low-carbon.
- The Taxonomy is based on most recent climate science and was developed using an extensive multi stakeholder approach that draws on the efforts in the Technical and Industry Working Groups.
- The Taxonomy seeks to help and become an important source for common green

standards across markets around the world to ensure that it helps to create an integrated thematic bond market that can deliver the benefits of a low carbon economy.

- Climate Bonds has been a important contribution to the creation of EU Sustainable Finance Taxonomy.
- The Climate Bonds Taxonomy identifies the project, activities, and assets required to provide an environment that is carbon-free and compatible with the objectives set out in the Paris Agreement.
- It was developed in accordance with the most recent climate science, including research from the Intergovernmental Panel on Climate Change (IPCC) as well as the International Energy Agency (IEA) and has been enriched by the expertise from hundreds of experts all over the globe.

Topic 113. GREAT INDIAN BUSTARDS (GIBS)

Important for subject: Environment

Great Indian Bustards (GIBs) in Rajasthan's Desert National Park (DNP) have laid about 20 eggs during the breeding season Four females laid two eggs per.

- The Great Indian Bustard is one of the biggest flying birds in the world.
- Scientist Name *Ardeotisnigriceps* Habitats: dry grasslands, scrublands of the Indian subcontinent. The largest population is found within Rajasthan, the Indian states of Rajasthan.
- Distribution India as the only place where bustards can live is now home to less than 150 persons across five States.
- The population today is restricted to Rajasthan in Rajasthan and Gujarat.
- There are also small populations small populations also occur Maharashtra, Karnataka and Andhra Pradesh.
- It is the bird of state of Rajasthan. Protection Status Critically Endangered on the IUCN Red List In Appendix I of CITES, In Schedule I of the Indian Wildlife (Protection) Act, 1972.
- Breeding Sewan grass (*Lasiurus scindicus*) is the grass on which GIBs lay eggs. to lay eggs. GIB breeding center was created in the year 2019 to safeguard and preserve eggs from the wild.

- The breeding season is expected to last until October.
- About 80 percent of the GIB's habitat lies in within the Desert National Park.
- DNP DESERT NATIONAL PARK (DNP) The Rajasthan's Desert National Park (DNP) is where the last GIB remaining wild population is located, making one of the vast Thar desert.
- It was designated a National Park in 1981 to ensure the protection of the habitat of the Great Indian Bustard.
- It is believed that the Thar the desert's east-facing boundary is marked by Aravalli hills and the western border is marked through its lush Indus plains.
- The Great Rann of Kutch forms an elongated border to the south. Meanwhile, the sub-Himalayan plains of the riparian riparian are the northern border.
- The Desert National Park (DNP) covers a total of 3162 sq km, including 1900 sq km located in Jaisalmer and the remaining 1262 sq km located in the Rajasthan's Barmer district.
- The majority of Thar's dry region's vegetation can be classed as thorn forests.
- Local communities, particularly the 'Bishnois' worship and guard Khejri Prosopis cineraria that is often found.

Topic 114. TILAPIA

Important for subject: Environment

Tilapia' has emerged to be among the largest and most efficient widely traded food fishes throughout the world.

- Tilapia are mostly freshwater fish found in small ponds, streams, lakes and rivers as well as less frequently living in brackish waters.
- Tilapia is a potential species in warm-water habitats that are newly developed.
- Tilapia have been utilized to combat biological issues associated with certain aquatic plant diseases.
- They are a fan of floating aquatic plants, duckweed, and can also eat filamentous algae.
- Tilapia are extremely low in levels of mercury as they grow rapidly, are lean and short-lived, with an all-vegetarian diet, and they do not build up mercury that is found in prey.

- Tilapia are very low in saturated fat as well as carbohydrates, calories and sodium, making them an excellent source of protein.
- They also have micronutrients like selenium, niacin and phosphorus as well as vitamin B.
- They eat mosquito larvae which can reduce the number of females who are adults, the virus's vector.
- Tilapia's culture is now commercially popular across the world.
- Fishery experts have described the tilapia an "aquatic chicken" due to its rapid growth and low-maintenance cultivation.
- If there is a fish could be described as a global fish, then there's no better name that can be imagined than Tilapia.

Topic 115. UN SUMMIT BEGINS TO DISCUSS AGREEMENT TO REGULATE THE THE USE OF THE HIGH SEAS

Important for subject: Environment

The United States member countries are gathered at New York to make the first legally binding treaty to regulate the use of high seas.

- It could be the final round of talks for the preservation and sustainable use of marine biodiversity.
- The treaty will aid in the conservation of biodiversity in areas that are not under the jurisdiction of national authorities (BBNJ) which are located beyond the 322-kilometre exclusive economic zones of 322-kilometres.
- The fifth and final round is talks on the international instrument of the UN Convention on the Law of the Sea (UNCLOS). BBNJ Treaty Also called the "Treaty of the High Seas".
- The treaty is an internationally negotiated treaty regarding the conservation and sustainable use of marine biodiversity of territories that are not under the national boundaries.
- The treaty is currently being negotiated in the United Nations. It is currently being designed within the framework of the United Convention on the Law of the Sea (UNCLOS) which is an important international treaty that regulates human activities at sea.

- It was launched in the One Ocean Summit in February 2022 the High Ambition Alliance regarding Biodiversity beyond National Jurisdiction is a coalition of many countries involved in the BBNJ discussions to reach a united and ambitious conclusion at the highest level of political power.
- BBNJ Treaty provides an opportunity to make up for gaps and to address the weaknesses in ocean governance.
- It also offers the chance to implement meaningful actions for dealing with pollution from trans boundary areas on high seas.
- This declaration from the High Ambition Coalition (HAC) is an important step in safeguarding biodiversity in high seas, despite increasing pressure on the ocean.
- The five Regional Seas conventions currently cover Areas Beyond National Jurisdiction (ABNJ) in their geographic scopes: OSPAR Convention, Noumea Convention, CCAMLR Convention, Barcelona Convention as well as the Lima Convention.
- Convention to Protect the marine environment in the Atlantic Ocean of North East (OSPAR Convention) Convention on the Protection of the Natural Resources and Environment in the South Pacific Region (Noumea Convention) Convention for the Conservation of Antarctic Marine Living Resources (CCAMLR Convention) Convention for the Protection of the Mediterranean Sea Against Pollution (Barcelona Convention) Convenio para la Proteccion del Medio Marino y la Zona Costera del Pacifico Sudeste (Lima Convention) Parties and members of the two Regional Seas programmes also started researching problems in relation to biodiversity in zones that do not fall under national jurisdiction.
- Nairobi Convention for the Protection, Management and Development of the Marine and Coastal Environment of the Western Indian Ocean Abidjan Convention for Cooperation in the Protection, Management and Development of the Marine and Coastal Environment of the Atlantic Coast of the West, Central and Southern Africa Region
- UNCLOS was adopted in 1982, and established the basis of ocean governance with the first set of guidelines for oceans and oceans.
- On April 29, 2022, the UN Convention on the Law of the Sea (UNCLOS) was completed for 40 years.

- There are two additional instruments in the Convention that are: the 1994 agreement for the implementation of Part XI of UNCLOS and the 1995 UN Fish Stocks Agreement.
- This treaty BBNJ is the 3rd legal document in the convention.
- It is also referred to in the context of Law of the Sea.
- It separates marine areas into five major zones, namely Internal waters, Territorial Sea, Contiguous Zone, Exclusive Economic Zone (EEZ) and the High Seas.
- It does not just regulate offshore areas in coastal states but also offers specific guidelines regarding the rights of states as well as duties in the concentric zones.

Topic 116. ANANG TAL LAKE DECLARED MONUMENT OF NATIONAL IMPORTANCE

Important for subject: Environment

Recently, Delhi Lieutenant Governor Vinai Kumar Saxena visited Sanjay Van's Anang Tal Baoli inside Sanjay Van and had directed officials to repair the historic stepwell in the next two months.

- The Anang Tal lake in South Delhi is thought to have been built around a thousand years ago was declared a National monument via a gazette announcement released by the Ministry of Culture earlier this week.
- The notification, published on the 22nd of August said: "The central government is convinced that the mound comprising Anang Tal, Tehsil Mehrauli District South Delhi, National Capital Territory Delhi is an old site that is important to the nation;
- In exercising the power conferred by subsection (1) in section 4 under the Ancient Monuments and Archaeological Sites and Remains Act in 1958 (24 of the year 1958) the central government gives notice of their intention to declare ancient site and the remains as having national importance. ..."
- Anang Tal The lake is located inside Mehrauli, Delhi and is believed to have been created by Tomar the King Anangpal II. It was 1 060 AD.
- The historians believe that he established and established Delhi in the 11th century.
- The millennium-old Anang Tal is the symbol of the start of Delhi.
- Anang Tal is a strong Rajasthan connection due to Maharaja Anangpal is called the nana (maternal great-grandfather) from Prithviraj Chauhan, whose castle Rai Pithora

is on the list of the ASI.

Who was Anangpal II?

- Anangpal II, popularly known as AnangpalTomar was a member of the Tomar Dynasty.
- He was the first founder of Dhillika Puri, which eventually changed into Delhi.
- Evidence of the origins of Delhi is engraved on the iron pillars of Masjid Qwaatul Islam next the Qutub Minar.
- Coins and inscriptions with multiple inscriptions indicate Anangpal Tomar was the ruler of modern-day Delhi and Haryana between the 8-12th century.
- The city was built out of ruins. Under his direction, Anang Tal Baoli and Lal Kot were built.
- AnangpalTomar II was succeeded by his son Prithviraj Chauhan.
- Delhi Sultanate was established in 1192 following Prithviraj Chauhan's defeat during the battle of Tarain (present-day Haryana) by the Ghurid forces.

What are the Key Points about the Tomar Dynasty?

- Tomara Dynasty is one of the lesser late medieval ruler houses in northern India. Puranic proof (writings in the Puranas) provides its origins to be in the Himalayan region.
- According to bardic legend the dynasty was part of one of the Rajput tribes.
- The story of the family spans from the time of Anangpal who established Delhi as a city in Delhi in the 11th century CE and the enshrinement of Delhi into the Chauhan (Chahamana) kingdom in 1164.
- While Delhi was later declared to be component within the Chauhan kingdom, numismatic evidence and more recent literary evidence suggests that Tomara kings like Anangpal as well as Madanpal maintained their feudatories probably until the final annihilation of Delhi by the Muslims in 1192 and 1193.

National Mission on Monuments and Antiquities:

- The National Mission on Monuments and Antiquities (NMMA) is an Indian government agency that is responsible for the maintenance of a database on cultural heritage within the Ministry of Culture of the India government. India.
- It was founded in 2007 with the intention of studying research, preserving and studying the culture of India.

- The primary purpose of the organization is to provide information in the public domain, specifically for students and scholars who are interested in or associated with the subject.
- Responsible for the maintenance of two national registers, such as national registers for antiquities as well as the national registers for Built Heritage & Sites (BH&S) and is referred towards one of the major databases of the nation in historical and architectural terms alongside those of Archaeological Survey of India, an agency nodal of the NMMA.

Topic 117. GANGETIC RIVER DOLPHINS IN ASSAM DECLINE IN THE WAKE OF ANTHROPOGENIC PRESSURES

Important for subject: Environment



Assam's Brahmaputra and its two tributaries Kulsi as well as Subansiri are strongholds for the threatened Gangetic river dolphin.

- Local communities and researchers have noted a decline in the number of people.
- Dolphins living in the Kulsi river are impacted by the constant mechanised sand mining along the banks.
- Dams being constructed across a variety of regions in Assam as well as Arunachal Pradesh has cut through the dolphin habitats and restricted access to prey.
- Dolphins are almost gone from the Barak river system, though there are some that are found in tributaries, such as Kushiyara as well as Soorma.
- Gangetic river dolphins were designated by the government of India as one of the

National Aquatic Animal in 2009 from the Government of India.

- They live in the Ganges-Brahmaputra-Meghna and Karnaphuli-Sangu river systems of Nepal, India, and Bangladesh.
- It is believed that the Ganges river dolphin is able to reside in freshwater and is blind.
- Around 80% of all Gangetic river dolphins are found on the Indian subcontinent.
- It is an accurate indicator of the overall health of the river's ecosystem.
- Conservation Status Indian Wildlife (Protection), Act 1972: Schedule I.
- International Union for the Conservation of Nature (IUCN): Endangered.
- Convention on International Trade in Endangered Species (CITES): Appendix I (most threatened).
- Convention on Migratory Species (CMS) Appendix II (migratory species that require conservation and management or could be greatly benefited from international cooperation).

Initiative of the government:

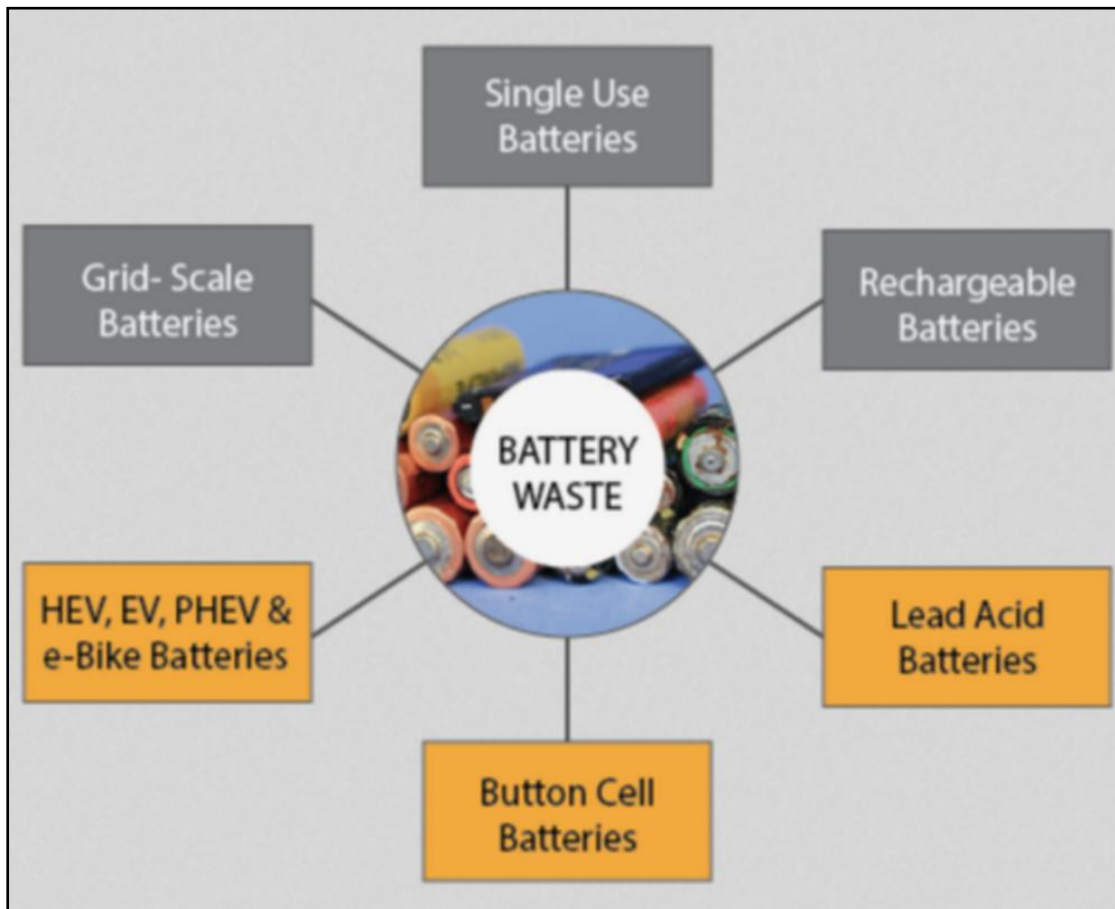
- Project Dolphin: The Prime Minister has announced the plan of the government to begin Project Dolphin. Project Dolphin in his Independence Day Speech 2020.
- It's in the vein that of Project Tiger, which has been able to increase the number of tigers.
- Dolphin Sanctuary Vikramshila Ganges Dolphin Sanctuary was created in Bihar.
- National Ganga River Dolphin Day: The National Mission for Clean Ganga celebrates 5 October as National Ganga River Dolphin Day.

Ranganadi River

- The Ranganadi River (also known as Paniyor River) is a sub-tributary to the Brahmaputra River, which is located in the Indian state of Assam.
- The river is a part of the Nilam, Marta and Tapo mountain ranges that are part of the Himalayan the foothills of Arunachal Pradesh.
- The Ranganadi river enters Assam when it reaches Johing from Lakhimpur district. It then flows for 60 kilometers through Lakhimpur district before forming a connection with the Subansiri River at Pokoniaghat of Lakhimpur district.

Topic 118. BATTERY WASTE MANAGEMENT RULES 2022

Important for subject: Environment



Ministry of Environment, Forest and Climate Change, Government of India released The Battery Waste Management Rules, 2022 on August 24 2022, to ensure the environmental-friendly disposal of batteries.

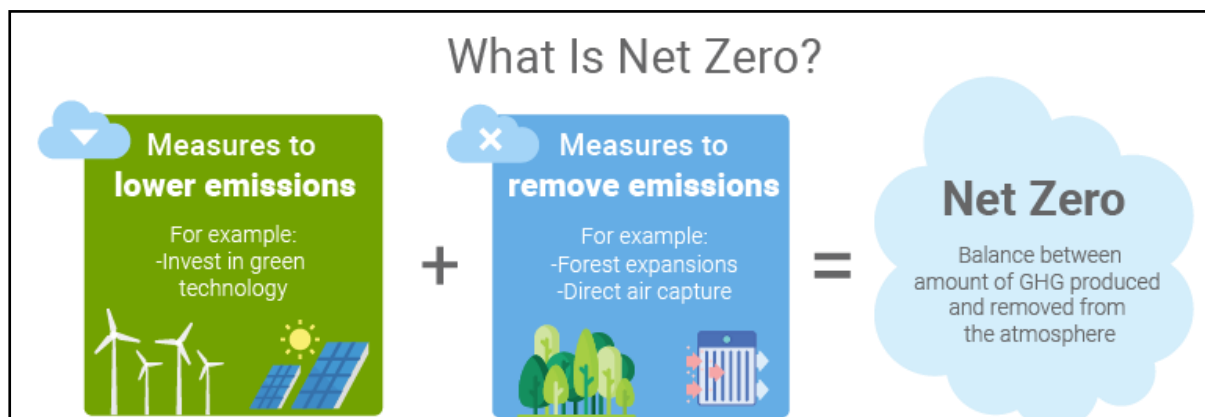
- To encourage Circular Economy in full earnest the new rules take over Batteries (Management and Handling) Rules 2001.
- Battery Waste Management Rules, 2022. The rules apply to all types of batteries for example., battery for electric vehicles, portable batteries automotive batteries, industrial batteries.
- The rules function based on the concept of Extended Producer Responsibility (EPR) where the producers (including importers) of batteries are responsible for collection and recycling/refurbishment of waste batteries and use of recovered materials from wastes into new batteries.
- EPR mandates that all waste batteries to be collected and sent for

recycling/refurbishment, and its prohibits disposal in landfills and incineration.

- To comply with to meet the EPR obligation, manufacturers can be able to engage themselves or authorize any other company to collect and recycling used batteries.
- The rules will permit the establishment of a mechanism and central online portal to facilitate the swapping EPR certificates between recyclers and producers refurbishers to fulfill the obligations of producers.
- The regulations encourage the establishment of new industries as well as entrepreneurship in recycling and collection / recycling of batteries that are not being used.
- A minimum percentage of material recovery from used batteries in accordance with the regulations will result in new technology as well as investment in recycling and refurbishment and open up many new opportunities for business.
- Prescription of a certain quantities of recycled materials in the the production of new batteries can decrease the need for new raw materials and help conserve the environment.
- Online registration and reporting, auditing, as well as a committees for monitoring the application of rules and taking steps to eliminate obstacles are key aspects of the rules to ensure an effective implementation and conformity.
- Based on the Polluter Pays Principle Environmental compensation will be given for non-fulfillment of the Extended Producer Responsibility goals and obligations, as well as responsibilities and responsibilities set out in the regulations.
- The funds received under environmental compensation will be used for the collection and refurbishing of batteries or recycling of non-collected or unrecycled battery waste

Topic 119. TO ACHIEVE NET-ZERO EMISSIONS TARGET BY 2070 INDIA NEEDS \$10-TN INVESTMENT FROM NOW: REPORT

Important for subject: Environment



Climate change according to the "Getting the India Net Zero report the amount of investment needed to be \$13.5 trillion in the event that this goal is met in 2050.

- The report states that reaching net-zero in 2070 will increase GDP growth by as much as 4.7 percent by 2036. It could also generate as many as 15 million jobs in 2047.
- The report was published by Rudd as well as the director of the Asia Society Policy Institute, the Former UN Secretary-General , and Global Green Growth Institute President and Chairman Ban Ki-moon, International Finance Corporation's Director and Head of Climate Business, Vivek Pathak and the former Indian the foreign minister Shyam Saran.
- International Finance Corporation (IFC) The International Finance Corporation (IFC) is an international financial institution offering advice, investment and asset management services to support private sector growth in the developing world.
- IFC is the world's largest development institution that focuses exclusively on the private sector in the developing world.
- The Bank Group has set two objectives for the world to reach by 2030: eliminate extreme poverty and encourage equitable prosperity across all countries.
- It is part of the World Bank Group and is its headquarters are at Washington, D.C., United States.
- It was founded on the 26th of September 1956. It was the first private sector division that was part of the World Bank Group to advance economic development through investing in only for-profit and commercial projects that aim to alleviate poverty and

encourage growth.

- The IFC is owned and controlled by its member countries however, it is governed by its own executive management and staff to manage its business operations as usual.
- It is a company with shareholders who are member governments who provide capital that is paid in and are entitled to vote on its issues.

Topic 120. AS CHINESE ROCKET DEBRIS PLUNGES INTO OCEAN, THE RISKS OF SPACE JUNK AND ITS UNCONTROLLED DESCENT

Important for subject: Science and Technology

Space ended after a week of global fear and anxiety debris from an enormous Chinese rocket - the Long March 5B - fell to earth over the Pacific as well as the Indian oceans.

What is an uncontrolled reentry?

- The initial stage or core in a rocket composed of large pieces that typically don't make it to orbit following launch, but instead return safely on the exact projected course.
- If they do get into an orbit, an expensive de-orbit maneuver is necessary for a steered and controlled return with engine burn.
- In the absence of a de-orbiting maneuver that stops the orbital core stage causes an uncontrollable fall. Massive remnants of China's Long March 5B's rockets' central stage are known for these explosive, uncontrollable descents back to the earth.
- The reason lies in a variation in the mission sequence, where the central stage is able to orbit and then crashes back.
- The majority of rockets in the world segregate the launcher from the payload prior to leaving the air.
- A second engine is then used to give the payload an additional boost.
- However, China's 5B series does not have another engine and is pushed straight into space.
- What is the reason it is so difficult to monitor the uncontrolled descents? The various variables that are that are involved make it hard to accurately track the timing of re-entry and the drop area of rocket debris during uncontrolled descents.
- The reasons that make this prediction difficult include atmospheric drag, changes of solar energy, angles and rotational changes of the object, among others.
- An error of just one minute of re-entry times could lead to the final resting point of

the debris shifting by hundreds of kilometers.

- Do you have laws governing space junk?
- The Space Liability Convention of 1972 stipulates the responsibility of the space object is responsible for harm.
- The treaty states that "a launch State is totally liable to compensate for any damage caused by its spacecrafts on the earth's surface or to aircrafts, as well as accountable for damages caused by its space-related faults.
- The Convention also includes methods for the settlement of demands for compensation."
- But, there isn't a law that prohibits space junk from crashing into earth.
- In April it was reported that the remains of an Chinese rocket was discovered within two Maharashtra villages.
- What's Space Junk? Space junk, also known as debris, consists of defunct rocket stages dead satellites, pieces of space objects, and other debris from the Anti-satellite (ASAT) system (ASAT).
- At a speed of 27,000 kmph within Low Earth Orbit (LEO) These objects pose an extremely real risk since collisions with even centimetre-sized fragments could be fatal to satellites.
- The space debris floating free can pose a threat to operating satellites. A collision with them could render the satellites in disarray.
- It is also known as Kessler Syndrome and is named for National Aeronautics and Space Administration (NASA) scientist Donald Kessler in 1978.
- It states that if there's excessive space junk in orbit it could trigger an unintended chain reaction in which increasing numbers of objects be impacted and generate new space junk up to the point that the Earth's orbit ceases to be usable. it's a Domino Effect.
- How do I know about the NETRA Project? "Project NETRA" can be described as an alarm system for space to find debris and other threats to Indian satellites.
- Once it is operational it will provide India its own capabilities in Space Situational Awareness (SSA) similar to other space powers. It is managed by ISRO

Topic 121. ALPHA FOLD: A TOUR DE FORCE IN SCIENCE***Important for subject: Science and Technology***

The awareness in IT DeepMind, a company that is owned by Google this week, the company announced that it was able to predict three-dimensional structures of over 200 million proteins with AlphaFold.

How does AlphaFold work?

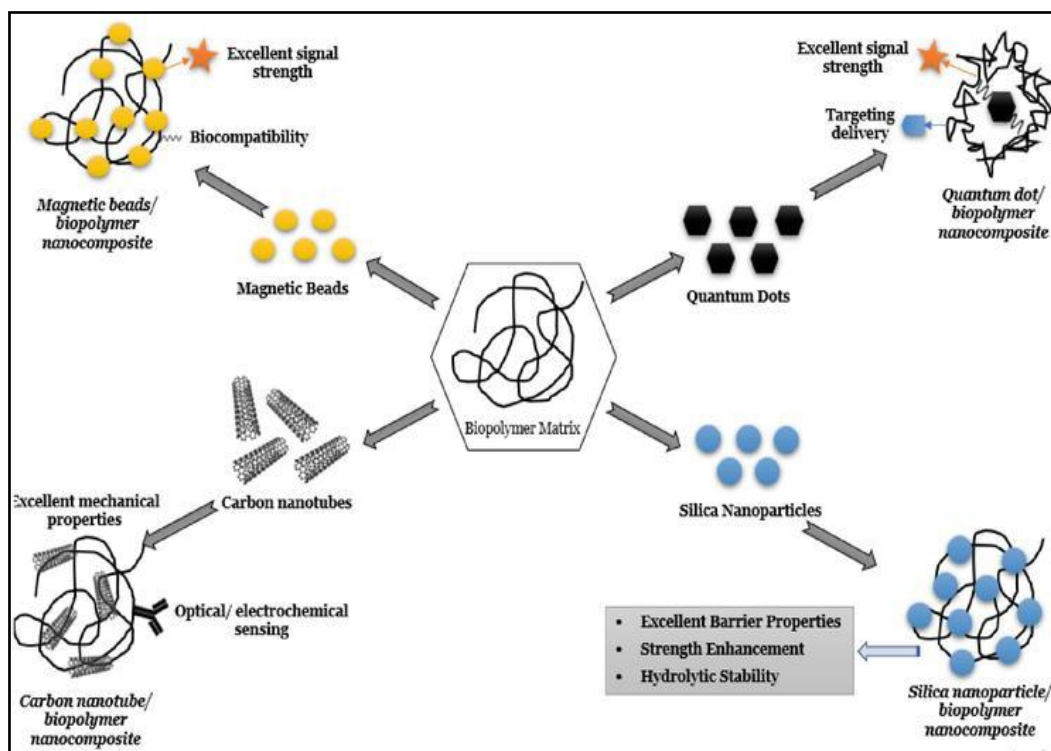
- AlphaFold is an AI-powered protein structure prediction tool.
- It is built on the concept of a computer system known as deep neural networks.
- Based on the brain of the human neural networks utilize an enormous amount of input information and provide the desired output precisely the human brain.
- The actual work is carried out by the black box that is located between the input and layers of output, referred to as the hidden networks.
- AlphaFold is fed by proteins as input. When protein sequences pass through one end, the expected three-dimensional structures are released through the other.
- It's like making a rabbit appear out of an pot. What is AlphaFold operate? AlphaFold is an AI-powered protein structure prediction tool.
- It relied on processes that are built on "training learning, the process of learning, retraining, and relearning" to predict the structure of the of the 214 million distinct protein sequences stored within the Universal Protein Resource (UniProt) database.
- What is the significance of this new development? Proteins are the primary business goal of biology. This means that proteins perform all the tasks within a living cell.
- Thus, understanding the structure and function is crucial in understanding human diseases.
- Scientists can predict the structure of proteins by using x-ray crystallography, Nuclear magnetic resonance spectroscopy and cryogenic electron microscopy.
- These methods aren't only laborious, they usually require years of effort and are mostly based on trial and error techniques.
- The invention of AlphaFold alters all that.
- It is a major development in science and in structural biology, specifically.
- What does this have to do with India?
- The Indian group of structural biology must benefit from AlphaFold. AlphaFold

database and learn to utilize the structure to create better drugs and vaccines.

- Are AlphaFold an exceptional tool for predicting protein structure? Though it's a feat in the field of structural biology, as every other method, it isn't flawless, nor is it the only AI-powered tool for predicting protein structure.
- RoseTTaFold created by David Baker at the University of Washington in Seattle, U.S., is a different tool.
- While less precise than AlphaFold but it is able to determine the protein complex's structure.

Topic 122. NEWLY DEVELOPED BIOPOLYMER NANO COMPOSITE

Important for subject: Science and Technology



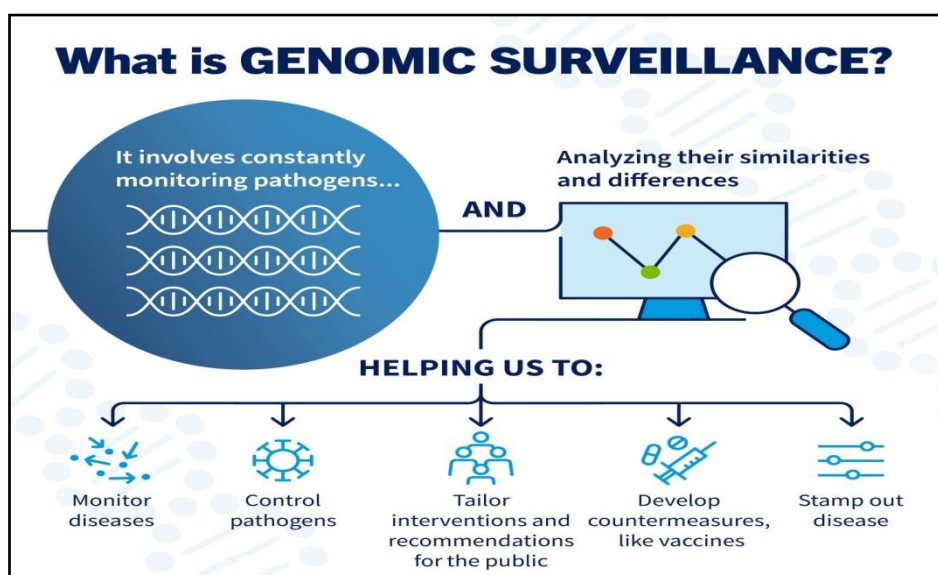
Biopolymer that is biodegradable. Nano composite was developed by scientists at the Institute of Advanced Study in Science and Technology (IASST)

- Biopolymers are polymers made by or are derived from living organisms like microbes and plants instead of petroleum, the primary source of polymers.
- Biopolymers originate from biomaterials that are the renewable sources.
- A biodegradable biopolymer nanocomposite has been developed by scientists of IASST. Institute of Advanced Study in Science and Technology (IASST) they have developed a biodegradable nanocomposite that can detect the relative humidity.

- In this case, two different biopolymers were used, Guar Gum (a variety of beans that is derived from plants) in addition to Alginate (obtained by brown algae) was blended together with carbon dots (nanomaterial) to form an ultra-thin film. It was successfully used to determine the relative humidity.
- The nanocomposite film that was fabricated is a fantastic sensor that was smart based on "on-off" mechanisms of fluorescence against humidity.
- The nanocomposite film exhibits a changes in fluorescence when exposed to of high levels of light. Therefore the nanocomposite film could be used to measure the freshness of the food packed using only an ultraviolet light source.
- A smart and efficient packaging can allow consumers to choose an item that is fresh without breaking the package.
- These innovative packaging designs boost sales and also reduces the time in identifying the freshness of food items.
- It detects relative humidity could be used as smart packaging materials, specifically for food processing as perishable foods can be susceptible to damage by changes the relative humidity.
- It is a non-toxic and biodegradable material that can be used for packaging materials to substitute petroleum-based plastics such as plastics.

Topic 123. WHY STRENGTHENING GENOMIC SURVEILLANCE IS AN IMPERATIVE

Important for subject: Science and Technology



A recent study showed an increase in the number of genetic modifications of the Monkeypox virus were much higher than anticipated.

- Since the first time it was reported to humans in the year 1970, monkeypox virus-related infections were largely limited to countries in Central as well as Eastern Africa until recently.
- In the wake of a rapid increase in cases after a rapid increase in cases, it was the World Health Organization (WHO) on the 23rd of July, 2022, declared the 2022 monkeypox epidemic as an Public Health Emergency of International Concern (PHEIC).
- Genome sequences the rapid deployment of genomics as an instrument to identify outbreaks in the past decade has left a lasting impression in the ongoing COVID-19 pandemic and has resulted in a larger implementation of sequencing infrastructures across the globe.
- The surveillance of pathogens' genomes can give unique insight into the nature of the outbreak, as well as track how pathogens spread, and give a lot of possibilities to public health policy-making and for epidemiology.
- Researchers from around the globe have made more than 650 complete genome sequences of monkeypox strains up to date in databases that are public domain, including GISAID as well as GenBank.
- This includes more than 600 genomes sequenced this year only from more than 35 different countries, which includes genomes from two strains of India that were collected from Kerala.
- Rapid evolution of the monkeypox virus is a genome of approximately 2,00,000 base pairs, approximately six times the size of SARS-CoV-2.
- As a DNA-based virus the monkeypox virus, like other poxviruses was thought to have a low percentage of genetic modifications when compared with viruses with
- RNA genome , similar to SARS-CoV-2 that have an increased rate of mutations. For poxviruses, this number is believed to be less than one or two genetic mutations each year. However, a recent study found that the observed rates of genetic changes within the virus was much higher than anticipated -- an approximately 50 genetic mutations.
- APOBEC3 protein. The study suggests that a variety of mutations identified in the newly discovered versions of monkeypox viruses could be the result of interactions

between the genome of the virus and a significant family of proteins encoded in the genome of humans, known as Apolipoprotein B Editing Complex (or APOBEC3).

- They protect against certain viral infections through editing DNA sequences of viruses as it reproduces within the cell.
- Monkeypox virus may be transmitted to a variety of hosts which include non-human primates, as well as rodents that could serve as natural reservoirs.
- Infections within the reservoir may allow for continued transmission and the accumulation of mutations, before the virus spreads to lead to human infections.
- Some studies also indicated that the virus is evolving in a continuous manner virus, which includes deletions in genes that are found in a handful of genomes of the current outbreak, which may suggest different ways that the virus evolves through sustained human-to human transmission.
- Monkeypox lineages. Genomes with shared and common mutations, and common origins are known as a lineage or a clade.
- In the beginning of 2000 in the early 2000s, two distinct types of monkeypox viruses were identified in Africa in which several patients with the illness were observed - that of the Central African (Congo Basin) Clade, along with the West African clade, of which the Congo Basin clade has been identified to be more transmittable and can cause more severe diseases.

Topic 124. INDIA AT 75: MILESTONES IN SPACE THAT MADE US A FORCE TO RECKON

Important for subject: Science and Technology

Space Technology Vikram Sarabhai formed the Indian National Committee for Space Research (INCOSPAR) in 1962.

- In collaboration with the Dr. Sarabhai leading the charge, INCOSPAR set up the Thumba Equatorial Rocket Launching Station (TERLS) in Thiruvananthapuram for research on upper atmospheric conditions.
- Fun fact: the Dr. A. P. J. Abdul Kalam, who later became President of India was part of the first group of rocket engineers that formed the INCOSPAR.
- INCOSPAR was then expanded and eventually became it's current name, the Indian Space Research Organisation (ISRO) on August 15th, 1969.

- It was a ideal day, as India celebrated its own 22nd Independence Day.
- It is gradually becoming one of the top six space agencies in the world.
- India is home to among the world's largest satellite fleets of communication (INSAT) as well as remote sensing (IRS) satellites.
- In the midst of India's celebrations for its 75th Independence Day round the corner we can look back into time and look at the most important discoveries that placed India on the map for space travel.
- Aryabhata named after the famous Indian Astronomer Aryabhata. Aryabhata was the first Indian satellite launch on the 19th of April 1975, from Kapustin Yar, a Soviet rocket launch site and development facility located in the Astrakhan Oblast using a Kosmos-3M launch vehicle.
- It was constructed by the ISRO and was began operation in the Soviet Union as a part of the Soviet Interkosmos program.
- It was a significant moment throughout the historical history of India. In actual fact, to commemorate the event, the image of the satellite could be seen on the back of Indian two rupee banknotes from 1996 and 1997.
- SLV-3 is the Satellite Launch Vehicle-3 (SLV-3) was India's very first experiment in satellite launch vehicle. It was a four-stage vehicle.
- It was capable of putting 40kg class payloads into the Low Earth Orbit (LEO). Launched on the 18th of July the 18th of July, 1980.
- According to ISRO's official website SLV-3 placed Rohini in orbit which was able to make India sixth member in an elite group of space-flying nations.
- Rohini was a set of spacecrafts created by Indian Space Research organization.
- The Rohini series comprised four satellites, all of which was launched by SLV and three succeeded in orbit.
- The series consisted of mostly satellites that were used for experiments.
- The success of the SLV-3 program paved the way for more advanced launch vehicle development projects, such as that of Augmented Satellite Launch Vehicle (ASLV), Polar Satellite Launch Vehicle (PSLV) as well as the Geosynchronous satellite Launch Vehicle (GSLV).
- PSLV PSLV Polar Satellite Launch Vehicle (PSLV) is India's third generation launch vehicle and one of the very first launches vehicles manufactured by India that comes

with liquid stages.

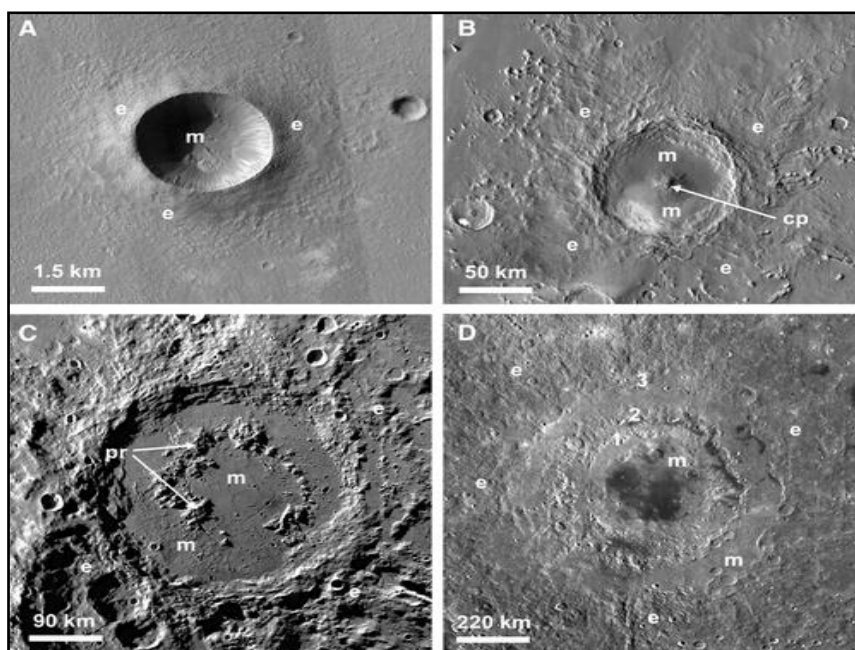
- PSLV was launched in the month of October 1994. It has since become an effective launch vehicle, with the capability of completing 39 missions up to June 2017.
- According to the ISRO's website, the vehicle successfully launched 48 Indian satellites as well as 209 satellites for customers outside the country between 1994 and 2017.
- It is important to remember that this vehicle was able to launch two spacecrafts: Chandrayaan-1 in 2008 as well as Mars Orbiter Spacecraft in 2013.
- Chandrayaan-I Chandrayaan-1 was India's first moon mission.
- It was the first non-manned lunar probe that was part of the Chandrayaan programme , and was launched in October of 2008 by ISRO.
- The spacecraft was comprised of lunar orbiters along with an impactor.
- The collection also included instruments made in countries outside of Germany, the USA, UK, Germany, Sweden, and Bulgaria.
- The spacecraft made more than 3,400 moon orbits.
- While the mission ended following the loss of communication to the spacecraft on August 29 2009, it was able to give India's space program an enormous boost.
- Mars Orbiter Mission the Mars Orbiter Mission (MOM) was India's first interplanetary mission.
- India was the 4th space organization to be able to access Mars orbit, following Roscosmos, NASA, and the European Space Agency.
- It also helped make India the first country to be able to access the Martian orbit on its initial attempt.
- Mangalyaan, the spacecraft Mangalyaan was launched on November 5 2013, 2013 and entered Mars its orbit on September 24, 2014.
- GSLV Another innovative product developed by ISRO can be described as its Geosynchronous satellite Launch Vehicle (GSLV).
- GSLV also is an space launch vehicle that is specifically designed to launch satellites as well as other objects in space to Geosynchronous Transfer Orbits.
- A three-stage launcher that has motors that strap on GSLV is able to place a larger payload into orbit than PSLV.
- The GSLV-D5 flight was the inaugural flight that was successful for GSLV with its

own cryogenic engine.

- The D5 was introduced on the 5th of January, 2014.
- Mission Shakti In a first-of-its-kind attempt in the history of space, Mission Shakti was the first time that Defence Research and Development Organisation succeeded in neutralising an orbiting satellite using the Anti-Satellite (ASAT) rocket on the 27th of March, 2019.
- It was among the most significant and complicated missions carried out through the DRDO and was named the Mission Shakti.
- Based on the title, Mission Shakti demonstrated the group's ability to defend India's assets including in the space! Rakesh Sharma's Sare Jahan Achcha Achcha In all the new developments and outstanding space tech How can we forget the name that was India's best-known name in the field of space-related achievements?
- The only Rakesh Sharma is the very first Indian to orbit the earth!
- Sharma was a former Indian Air Force pilot, was chosen to be Cosmonaut and enter the space in a joint program with both the Indian Air Force and the Soviet Interkosmos space program.
- He took off on the Soyuz T-11 on the 3rd of April 1984.

Topic 125. NEW RESEARCH: GIANT METEORITE IMPACTS CREATED CONTINENTS

Important for subject: Science and Technology

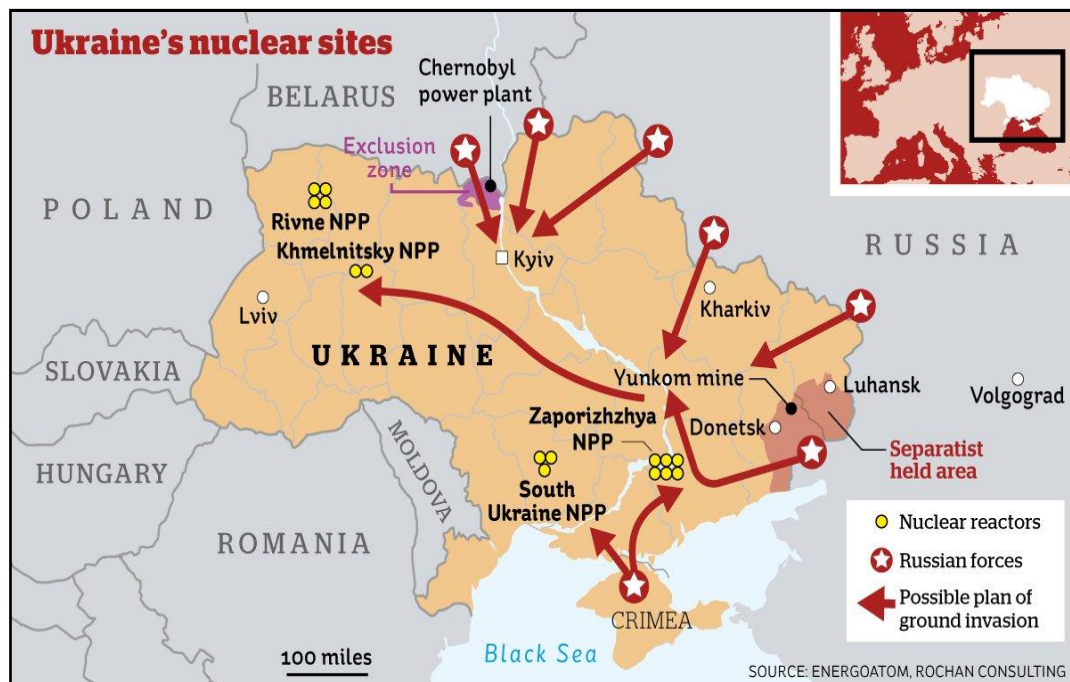


A brand-new Curtin University study has found the strongest evidence concluding that Earth's continents were created by meteorite giant impact.

- This paper, entitled 'Giant Impacts and the evolution and origin of continents' was released in Nature on the 10th of August.
- Through the examination of tiny zircon crystals in the rocks of The Pilbara Craton in Western Australia which is Earth's most well-preserved remains of the crust's early days We found evidence of massive meteorite impacts.
- Analyzing the composition of oxygen isotopes found in zircon crystals showed a 'top-down process that begins with melting of rocks close to the surface before moving deeper, in line with the geological effects of massive meteorite impact.
- The University's research offers the first evidence-based proof that the processes that eventually created the continents started with massive meteorite impacts
- **What is the difference between the terms Meteoroid or the term "Meteor" Meteor or a Meteorite?**
- Meteoroids are cosmic objects that vary in dimensions from dust grains all the way to small asteroids.
- Many are pieces of larger body parts that were damaged or destroyed.
- These come from comets asteroids, planets, and the Moon.
- When meteoroids penetrate Earth's atmosphere (or the atmosphere of another planet like Mars) with speed of light and begin to burn up, fireworks or "shooting star formations" are known as meteors.
- If a meteoroid is able to survive its flight through the air and lands on its ground surface, it's referred to as meteorite.

Topic 126. FIGHTING IN UKRAINE ENDANGERS BIG NUCLEAR PLANT

Important for subject: Science & Technology



It is located in the Zaporizhzhia plant is located in the southern part of Ukraine close to the city of Enerhodar located on the banks the Dnieper River.

- It is among the largest nuclear power reactors in the world.
- It was constructed in the Soviet period, it houses six reactors that have the capacity 5700 megawatts.
- Three reactors are operating.
- Russia both Ukraine have been accused of each other of attacking Europe's largest nuclear power plant, which is stoking fears around the world of a nuclear disaster across the continent.
- Prior to the war, the nuclear plant was responsible for around half the electricity produced through the nuclear energy in Ukraine.
- The country is home to 15 nuclear reactors in four operating reactors, as well as being home to the now decommissioned Chernobyl plant, which was the scene of the nuclear catastrophe of 1986.
- Rafael Mariano Grossi, director-general of the United Nations' nuclear watchdog The International Atomic Energy Agency, stated to The Associated Press last week that the situation at Zaporizhzhia's nuclear plant Zaporizhzhia plant "is totally out of

control," and he issued an urgent appeal at Russia as well as Ukraine to let experts visit the plant to stabilize issues and avoid an accident with nuclear fuel.

- He also said that the IAEA must also conduct crucial inspections to make sure that nuclear materials are protected.
- International Atomic Energy Agency Widely acknowledged by its title of the most prestigious "Atoms for Development and Peace" agency in the United Nations family, the IAEA is the world's central point for nuclear cooperation. field.
- The IAEA was established in 1957 to address the fears and hopes caused by the discovery and numerous uses of nuclear technology. Its headquarters are located situated in Vienna, Austria.
- Reports are submitted to each of the United Nations General Assembly and Security Council.
- Goal It is the Agency collaborates alongside the Agency's Member States and multiple partners all over the world to encourage peaceful, secure, and safe utilization of nuclear technologies.
- In 2005, the organization was given in 2005 the Nobel Peace Prize for their work to ensure an environment that is safe and peaceful.
- Programs:
 1. Program of Action for Cancer Therapy (PACT).
 2. Human Health Program.
 3. The Water Availability Improvement Project.
 4. International Project on Innovative Nuclear Reactors and Fuel Cycles, 2000.

Topic 127. WHAT IS LANGYA, THE NEW ZOONOTIC VIRUS THAT HAS INFECTED 35 PEOPLE IN CHINA?

Important for subject: Science and Technology

Nearly three years after the first coronavirus was first discovered in China in 2013, an entirely new zoonotic infection was discovered in China's two provinces of the eastern region, with 35 cases identified to date.

- This Henipavirus variant is also known as Langya Henipavirus or the LayV.
- Henipaviruses have been classified as biosafety levels 4 (BSL4) agents.
- They can trigger severe illnesses for both animals and humans and at present there

aren't any licensed medicines or vaccines designed for humans.

- What exactly is Langya virus?
- The newly discovered virus is a "phylogenetically distinct Henipavirus", according to a recent study -- A Zoonotic Henipavirus in Febrile Patients in China -- published in The New England Journal of Medicine.
- The kinds of Henipaviruses that were identified prior to this time included Hendra, Nipah, Cedar, Mojiang and the Ghanaian bat virus.
- In accordance with the US CDC, the Cedar virus, Ghanaian bat virus, and Mojiang virus are not believed to cause human diseases.
- However, Hendra and Nipah are both human-infected and can cause fatal illnesses.
- Langya In addition, it is known to trigger fever as well, and fever, with NEJM research calling for further investigation into the illnesses in humans.
- The study states that the Langya genome's structure is "identical to the Henipaviruses other than" and is closely related to "Mojiang Henipavirus that was first discovered in the southern part of China".
- What are the signs and symptoms that are the signs Langya virus?
- The study examined 26 patients suffering from LayV infection to determine the symptoms that were associated with it.
- In the 26 who were sick 54% of them complained of fatigue, while 50% reported cough and 38 percent reported nausea.
- In addition 35% of the total 26 reported vomiting and headaches.
- The study showed that 35% of patients had impaired the function of their livers, while 8 percent of them affected kidney function.
- The patients were also afflicted with anomalies of "thrombocytopenia (35 percent) and leukopenia (54 percent) as well as impairment in liver (35 percent) as well as kidney (8 percent) function" The study found.
- A thrombocytopenia diagnosis is a decrease in platelet count, whereas leukopenia is a decrease in white blood cell count, which can reduce the body's ability to fight off disease.
- Where did Langya virus originated? Most likely, the new virus has made its way from an animal to human.
- The LayV virusRNA is mainly discovered in shrews, which could be their natural

hosts.

- The study focused on shrews, after conducting serosurveys of domestic as well as wild animals.
- In domestic pets, seropositivity has been observed in dogs and goats.
- What is the human-to-human transmission?
- There aren't definitive answers at this time.
- The researchers behind the study have stated that the amount of their research is not sufficient to establish the human-to-human transmission.
- They also note that, among the 35 people who were infected with LayV There was "no near contact nor frequent exposure experience" suggesting that the "infection among the population of humans might be intermittent"

Topic 128. WHAT WENT WRONG WITH THE ISRO LAUNCH OF SSLV?

Important for subject: Science and Technology



On the 7th of August, ISRO got ready for the first test flight of the mission SSLVD1/EOS-2.

- Launch took place at the Satish Dhawan Space Centre located in Sriharikota.
- It was the Small Satellite Launch Vehicle (SSLV) D1/EOS-2 mission carried two satellites that of the Earth Observation Satellite-2 (EOS-2) that weighed around 135 kg and AzadiSAT which weighed eight kilograms.

- The mission was designed to put the EOS2 in an orbit that was circular in low-Earth orbit that was at an altitude of around 350 kilometers higher than the Equator and tilted to 37 degrees.
- The beginning of the story was successful with the launch vehicle running smoothly.
- But, the mission was not able to position these satellites in their orbits as required, as well as the satellites because they were already separated from launch vehicles were destroyed.
- **Why should we create an SSLV when we have already used PSLV as well as GSLV?**
- The PSLV (Polar Satellite Launch Vehicle) and GSLV (Geosynchronous Satellite Launch Vehicle) are extremely powerful and are able to carry massive loads.
- In order to place the Earth Orbiting Satellite in a low Earth orbit, it does not require such powerful engines.
- The SSLV is able to carry medium-sized to small weights ranging from 10 up to 500 kg.
- It's also less expensive.
- The fact that the three stages are powered with solid fuel also has a benefit.
- Solid fuel is much easier to handle, while dealing with liquid propellants in both the PSLV and the GSLV is more complicated.
- **The difference in circular orbits is what makes them different from an elliptical orbit?**
- The majority of objects like spacecrafts and satellites are put in circular orbits for only a few minutes.
- They then are either moved into circular orbits of greater height or their acceleration is raised until the trajectory changes from an ellipse into a hyperbola.
- The spacecraft then escapes the gravity of Earth in an effort to go further into space, for instance towards space to the Moon or Mars or farther away.
- Satellites orbiting the Earth are usually put in circles.
- The reason for this is that when a satellite is being used to photograph the Earth it is simpler to work with an established distance from Earth.
- If the distance changes in a circular orbit, or in an elliptical orbit keeping the cameras focused could be difficult.

Topic 129. ISRO'S FIRST FLIGHT OF SSLV ROCKET DASHES HOPES; A LOOK AT SPACE BODY'S SOME OF THE FAILED MISSIONS

Important for subject: Science and Technology

In the initial SSLV mission it carried Earth Observation Satellite EOS-2, as well as Azaadi SAT, a student satellite that was co-passenger with In a further setback to the space agency of India on its launches as well, they Indian Space Research Organisation (ISRO) announced on Sunday that the satellites aboard its first Small Satellite Launch Vehicle "are not in use anymore" following the SSLVD1's placement of the satellites in an elliptical orbit, instead of a circular orbit in the low orbits of Earth.

- Another failed mission of the ISRO First major failure of a satellite to the ISRO was on the 10th of August in 1979, when the first test flight of SLV-3 with Rohini Technology Payload could not put the satellite in its desired orbit. The SROSS-1, a 150kg satellite with science instruments was launched by the very first ASLV (Augmented Satellite Launch Vehicle) test flight on March 24, 1987.
- It was unable to make it to Earth's orbit Dubbed as one of the ISRO's most reliable workhorses, the PSLV failed to achieve success in its initial flight.
- After its successful launch in the year following it became an efficient and flexible launch vehicle for ISRO's space agency.
- Launch vehicle GSLV F02, that was the first attempt at launching a large communication satellite however, also failed.
- The PSLV-C39 was intended to launch IRNSS-1H was unsuccessful in the 41st attempt.
- Even though it had normal lift-off the satellites were split within their heat shields, which resulted in failure to complete the mission.
- The second mission of ISRO's on the moon Chandrayaan-2 orbiter, launched in the year 2019.
- The mission, however, was unsuccessful when the lander smashed onto the moon's surface instead of landing.
- The rover and the lander were both destroyed. The launch of the earth observations satellite aboard GSLV Mk 2 rocket GISAT-1 was unsuccessful just 350 seconds after the launch at India's Spaceport.
- The initial analysis by ISRO identified "a technical issue in the cryogenic phase" as

the cause of the failure.

- Small Satellite Launch Vehicle The SSLV (Small Satellite Launch Vehicle) will cater to the market for small satellites to launch into low orbits of Earth that has been developed in recent times to meet the needs of developing nations as well as universities with small satellites, as well as private companies.
- The SSLV is the lightest satellite launch vehicle with a weight of just 110-tonne. It will take just 72 hours to be integrated as opposed to the typical 70 days needed to build a launch vehicle.
- It can transport satellites of up to 500kg in a low Earth orbit, while the proven and true Polar Satellite Launch Vehicle (PSLV) can launch satellites with a weight in the 1000-kilogram range.
- SSLV is able to launch up to 500kg of satellites into 500 km of Low Earth Orbit (LEO) and 300 kg into Sun Synchronous Orbit (SSO).
- It is a three-stage launch Vehicle equipped with three solid Propulsion Stages and a liquid propulsion-based Velocity Trimming Module (VTM) to serve as a final stage.
- It is ideal for launches of multiple microsatellites simultaneously at a time, and can accommodate numerous orbital drops.
- The main advantages of SSLV are its low price and a quick turn-around and the flexibility in accepting multiple satellites at once, launch-on-demand capability, minimum requirements for launch infrastructure etc.
- One of the main responsibilities of the newly created ISRO commercial division, New Space India Limited (NSIL) is to manufacture and mass-produce the SSLV and larger and more powerful PSLV in collaboration together with private companies in India through technology transfer.

Topic 130. HOW PHASE-CHANGING MATERIALS CAN BUILD GREEN STRUCTURES

Important for subject: Science and Technology

The phrase "70 percent of all the structures India will be able to build in 2030 are still to be constructed is repeated so many times that it's become a cliché.

- It is believed that the International Energy Agency has determined that carbon dioxide emissions from old as well as new constructions could rise to 194 million tons in the

year 2020 to two million tonnes in 2040.

- "Phase-Changing Materials" or PCMs materials that alter their phases in the process of absorbing energy or releasing it.
- Vapour ice forming from water is a great example of these 'phase-changing materials' PCMs, also known as phase-changing materials.
- PCMs can be integrated into building materials through macro the encapsulation process (hollows in walls, slabs or bricks that contain PCMs) or micro Encapsulation (PCMs are powdered and mixed into building materials).
- Benefits A new study by AAridi from the University of Angers, France, and A Yehya of Harvard University says that PCMs could reduce energy consumption by five to fourteen times the energy in a unit than conventional storage materials (water or masonry rock).
- PCMs can be used to store a substantial amount of energy from thermal sources in the building when it is not in peak load to ensure that the building is in balance with the peak demand environment, according to.
- In addition Latent heat devices are superior to sensible ones because they are able to store a huge amount of heat, with minor to zero temperature difference.
- The term "latent heat" refers to that is required to make the phase change, without altering the temperature.
- The study has looked into the different benefits of various kinds of PCMs used in building sand concluded that coconut oil will be the most effective.
- Different types of PCMs PCMs are derived from a variety of sources: raw oil (paraffin wax) and compounds (salt and hydrates) or even plants (palm soya, coconut or oil).
- Four kinds of PCMs were examined including magnesium nitrate Hexahydrate salt hydrates, and octadecane for Paraffins and coconut oils and coconut oil that is produced using biofertilisers.
- Octadecane is the most expensive at about \$8 per kg which was then coconut oil (\$2 per kg) magnesium nitrate, Hexahydrate (\$0.3 per kilogram).
- Octadecane, which is derived from crude oil has the most environmental impact of the four PCMs.
- However, it is the most efficient in storing and releasing the greatest amount of

energy due to its large latent heat.

- This makes it ideal for spaces with limited space.
- The coconut oil PCM that uses bio fertilisers is green transparent, non-toxic, and non-toxic and has outstanding thermo-physical and chemical properties to be used for TES (thermal energy storage).
- In addition coconut oil, it is inexpensive and easily accessible as renewable and biodegradable, in contrast to paraffin, which takes many years to be completely decomposed.
- The production of coconut oil positively affects the economies of the agricultural communities that make it, in spite of some problems associated to low-cost and child labour.
- Waste to PCM the study reveals that there are additional bio-based PCMs which can be used in combination, for example beef tallow paired in combination with coconut oil palm kernel oil and soyabean oil in addition to other options.
- PCMs are made from waste or by products such as fish oils, animal fats waste, pork lard, the fat of chickens, beef tallow plastics, and carbon PCM (CPCM).

Topic 131. A TOOTHY SOLUTION TO STEM CELL HARVESTING

Important for subject: Science and Technology

The bone marrow is until recently been the most widespread sources of stem cells.

- But, other sources such as the umbilical cord, or the adipose tissues are being investigated as well.
- New research on regenerative also known as stem cells therapy, regardless to the patient's age stem cells from the gum or gingival tissue can help to regenerate nerve cells or neuronal cells that are also known as nerve cells.
- This research could help to treat disorders affecting nerves such as Alzheimer's or Parkinson's.
- **What is gingiva?**
- It's very difficult to take cells out of the bone marrow.
- They are derived directly from the knee cap belonging to a person that may not be in good health and is likely suffering from arthritis or other disease that is related to bones.

- The recovery time following the removal of bone marrow is higher than in gingival tissue.
- The extraction of bone tissue is the procedure that is invasive.
- Gingiva has no complications.
- Anyone can give gingival tissue the healing process can take 7 to 10 days.
- As time passes stem cells are prone to grow into tumors over time.
- The same was not the case in the lab, however, growth was derived by gingival tissue.
- The limitation was that when the stem cells were stimulated to create osteoblasts, bone cells or adipose tissue their ability waned as the growing old age of donors.
- In the case of renewal of neuronal cells stem cells that were derived from gingival tissue were consistently effective, regardless of age.
- The use of stem cells in Regenerative therapies stem cells are the primary cells that are used to create other cells.
- They may be stem cells or specialized cells with specific purposes, like nerve cells, blood bones, cells, or cardiac muscle cells.
- For treating cancer the infusion of stem cells either from either a donor or oneself has proven promising.
- Cancer is a condition which kills a lot of cells within an extremely short time.
- To counteract the effects on cancer stem cells fulfill crucial functions of creating healthful cells to replace damaged ones.
- Stem cells were first used in the year 1958 in the work of French cancerologist Georges Mathe, who performed the first bone marrow transplant to assist in saving six Yugoslavian nuclear scientists who had been accidentally exposed to radiation.
- Stem cells can be useful not only in the treatment of cancer but as a means of understanding how diseases develop and impact the body and testing new medicines as per to the Mayo Clinic website.
- Stem cells can come from bone marrow embryos, embryos or fat tissue, as well as the perinatal fluids like umbilical blood.
- Autologous stem cell therapy is the method of treatment that uses your own stem cells for neurodegenerative disorders that are age-related like Parkinson's and Alzheimer's is a great option.

- This will reduce the risk rejection of cells as well as other problems.
- Allogeneic therapy is the utilization of stem cells donated by donors.
- There is a chance of rejection of cells and other complications are present in Covid-19 treatments.
- Interestingly the team has expanded the study to examine whether stem cell-mediated regeneration could help to reverse the damage caused by lung caused to Covid-19-related lung damage.
- The researchers measured improvements in lung health across eight variables, including the presence of blood clots, fibroids as well as an infiltration of immune cells to lung.

Topic 132. IMPROVING RICE YIELD WITH AN ADDITIONAL GENE

Important for subject: Science and Technology

The Green Revolution of the 1960s resulted in a significant increase in the yield of agriculture crops like wheat and rice.

- OsDREB1C gene New Research report points out that providing a Chinese rice cultivar an additional copy of one of its genes has improved the yield of up to 40 percent.
- If a second copy of one gene (called OsDREB1C) is added to rice, it enhances the nitrogen and photosynthesis, increases flowering speed and absorbs nitrogen in a more efficient manner which results in greater and more plentiful grains.
- Gene modulation one of the most important aspects is that researchers have used the same gene in a second time but not a other gene from outside.
- This is described best by the term genetic modification.
- This is not an alteration in genetics (GM) and is not its result transgenic one, with elements from a different donor.
- GM crop Regulation in India has excluded crops with specific types of genetic modification from the previous restrictions on commercialization of all genetically modified crops.
- For instance, BT cotton involves the transfer of the gene from the bacterium known as *Bacillus thuringiensis* (BT) to be transferred to normal cotton.
- In India, the Agriculture Ministry has pointed out in the year 2019 that they have

permitted the transfer of this gene to normal cotton to produce the BT cotton and then it is manufactured and sold in India and overseas.

- Rice is a primary diet for the majority of the people living in India.
- It is a kharif-type crop that needs high temperatures (above 25 degrees Celsius) along with high humidity.
- It also requires annual rainfall exceeding 100cm.
- In areas that have little rainfall, it can be cultivated with irrigation.
- In the southern states as well as West Bengal, the climatic conditions allow for the cultivation of three or two varieties of rice during an entire year of agriculture.
- The West Bengal farmers grow three varieties of rice, namely "aus", "aman" and "boro".
- A quarter of the total surface of the land that is cropped across India is under the cultivation of rice.
- Leading producer states: West Bengal, Uttar Pradesh, and Punjab. High Yielding States: Punjab, Tamil Nadu, Haryana, Andhra Pradesh, Telangana, West Bengal and Kerala.
- India is the second largest rice producer, second only to China.
- India is the largest rice exporter.
- It shipped 18.75 million tons to more than 150 countries in 2021-22, making \$6.11 billion.
- The Genetic Engineering Appraisal Committee (GEAC) operates under the Ministry of Environment, Forest and Climate Change (MoEF&CC).
- It is accountable for the evaluation of all activities that involve the use of large-scale quantities of dangerous microorganisms, recombinants and other recombinants in as well as industrial production from an environmental perspective.
- It is accountable to evaluate proposals related to releases genes engineered (GE) organisms and their products in the environment, including experiments and field tests.
- GEAC is headed by the Secretary Special/Additional of MoEF&CC and is co-chaired by an official who is from the Department of Biotechnology (DBT).

Topic 133. WHICH OILS TO USE AND HOW MUCH: DO'S AND DON'TS OF CONSUMING FATS

Important for subject: science and technology

The excess fat in our diet will destroy our heart and liver in the near future, due to our lack of exercise and a diet that is not controlled.

- In terms of quantity, there's more or less agreement: around 3-4 teaspoons of sugar should be consumed every day, which includes the cooking oils used.
- A diet that is completely oil-free can be harmful over the long haul because essential fatty acids found in oils are required by your body.
- Good fat Monounsaturated Fat (oleic acid) Research has shown that one of the fats monounsaturated fat (oleic acid) is consumed in lieu or in addition to other types of fats is highly efficient at lowering blood fats as well as treatment for diabetic patients.
- Source - Although this kind of fat is plentiful in canola oil and olive oil but the people of India have been using an oil similar to mustard, for a long time.
- Other good sources of monounsaturated fat include walnuts, avocados, pistachios and almonds. Sesame is also a good source.
- Polyunsaturated fat The other kind of fat that is considered to be good is polyunsaturated fat. an example of this of this is the omega-3 fats of which fish is an abundant source.
- There aren't any vegetarian options for these healthy fats - walnuts as well as mustard oil, soybean sesame, peanuts flaxseeds and flaxseed oil.
- Chia seeds are a small source of quantities of omega-3 fatty acids.
- Bad Fat: Saturated Fat consumption of saturated fats can carry the risk of coronary artery clogging and heart attacks although recent studies suggest a different view.
- One of the most harmful components that is found in saturated fats can be palmitic acid that are the main component in the dairy products ghee and palm oils that, in addition to raising the likelihood of developing heart disease, can also contribute to the proliferation of cancerous cells.
- All saturated fats are deposited in the liver, which causes the liver to shrink (fibrosis as well as cirrhosis) Sources: Ghee coconut oil, palm oil. Dairy ghee is rich of saturated fats (60%-80 percent) along with palmitic acid.
- Coconut oil, popular in the southern states, is also abundant in saturated fats as well as

palmitic acids.

- It was found to increase the bad cholesterol in blood (LDL) which is the primary cause of blockages in arteries, in six of the seven studies that have been conducted to the present.
- Bhujias and chips that are accessible in India are produced using saturated fat-laden palm oils.
- Fat Trans fats The first of the saturated fats that are responsible to increase liver and heart risk are trans fatty acids.
- The high levels of trans fats (which comprise 30% to 40 percent of certain oils) are extremely harmful to the liver, the heart pancreas, pancreas and blood vessels.
- In fact, this is the most destructive part of oil.
- Research has shown that when we cook food at extreme temperatures with any type of oil the concentrations of trans-fatty acids increase by 100-200 percent.
- These cooking techniques are widespread in Indian households and are commonly used by street sellers and the majority of restaurants.
- Source - Ghee from vegetables-- vanaspati and other similar oils.
- (Vanaspati Ghee is a partially hydrogenated vegetable oil derived from plant sources. It differs from dairy Ghee.) Margarine , bakery products, and in fried, baked, and baked food items.
- Initiatives to cut down on their consumption: FSSAI launched a "Trans Fat Free" logo to promote the voluntary labelling of products to advertise products that are TFA-free.
- The label can be utilized for bakeries and local grocery stores as well as shops selling products that contain TFA in excess of 2 grams per 100 grams/ml.
- FSSAI announced a new mass-media campaign "Heart Attack Rewind" to remove trans fats produced by industrial processes in food in 2022.
- "Heart Attack Rewind" is an extension to an earlier campaign "Eat Right", which was launched in July 2018.
- Edible oil companies have made a commitment to cut down on sugar, salt and trans fats by two percent by 2022 from present levels of 5percent. Swasth Bharat Yatra, an initiative that was launched as part of the "Eat Right" campaign is a Pan-India Cyclothon to bring people together on the issue of food safety, fighting food adulteration, and promote healthy eating.

- World: WHO launched a REPLACE campaign in 2018 to promote the global elimination of trans-fats from edible oils produced by industrial processes until 2023.

Topic 134. DID ASTEROIDS CARRY THE WATER TO EARTH? RESULTS IN THE HAYABUSA-2 PROBE AND ITS EXPLANATION

Important for subject: Science and Technology

How did the Earth was thought to be covered by bubbles of magma millions of years back transform into the "blue planet and then become covered with water?

- In an article by the scientific journal Nature Astronomy on Monday (August 15) researchers from Japan believe that organic matter and water could have come to Earth from far reaches of our solar system.
- The researchers came up with this theory by studying samples taken from the asteroid, Ryugu.
- That were collected by the Japanese Aerospace Exploration Agency's (JAXA) Hayabusa-2 probe, which taken 5.4 grams of dust and rocks from the spacecraft to Earth in the month of December.

What did Hayabusa-2's mission entail?

- It was the Hayabusa-2 mission was initiated in December of 2014 when the spacecraft set off to the moon for six years to examine Ryugu's asteroid.
- According to the report of Deutsche Welle from 2020, the spacecraft, roughly as big as a fridge has traveled over 5 billion kilometers in its trip.
- The spacecraft reached the asteroid in the middle of 2018, and then positioned two rovers as well as a tiny lander on the surface.
- In the year 2019 the spacecraft fired an impactor onto the surface of the asteroid to create a circular crater that measured about 10 meters, which enabled it to gather samples.
- In the month of December, 2020 Hayabusa-2 launched a tiny capsule that contained dust and rock samples as it was at a distance of 220,000 km away from Earth's atmosphere it safely crashed into the South Australian outback.
- Hayabasu2, the predecessor of Hayabusa, Hayabusa mission, returned samples from the Asteroid Itokawa in the year 2010.

What is an Asteroid?

- Asteroids are rocks which orbit around the Sun and are significantly smaller than planets.
- They are also known as minor planets.
- According to NASA they have 994,383 known asteroids. They are the leftovers of the formation of our solar system 4.6 billion years ago.
- Asteroids are classified into three types.
- The first is the principal asteroid belt that lies between Mars and Jupiter that is thought to contain in the range of 1.1-1.9 millions of asteroids.
- The second category is made up of trojans which are asteroids which have an orbit that is shared with the larger planet.
- NASA mentions the existence trojans in the orbits of Jupiter, Neptune and Mars trojans.
- The year 2011 was the last time they also reported an Earth trojan too.
- The third category includes Near-Earth Asteroids (NEA), with orbits that are very close to Earth.
- The ones that cross Earth's orbit are known as Earth-crossers.
- More than 10,000 asteroids have been identified, of which more than 1400 have been classified as potential dangerous asteroids (PHAs).
- Ryugu has also been classified a PHA and was first discovered in 1999, and named from the Minor Planet Center in 2015.
- It's located at 300 million kilometers away from Earth and took Hayabusa-2 42 months to arrive at it.

Why do scientists study asteroids?

- Asteroids are among the most ancient celestial bodies of the Solar System, scientists study them to discover information about the origins and the history of the sun and planets.
- Another reason for keeping track of asteroids is to search for asteroids that might hit Earth and lead to possibly dangerous consequences.
- NASA's OSIRIS-REX spacecraft has taken samples of the Asteroid Bennu in October of 2020, that will be returned to Earth in 2023.

- Scientists are fascinated by studying asteroids like Bennu since it hasn't experienced any drastic modifications since its formation thousands of years, and thus, it has chemical compounds and rocks that date to prior to the beginning of our solar system.
- It's also near to that of the Earth.

Topic 135. ALTERNATIVE FUEL TECHNOLOGY

Important for subject: Science and Technology

Alternative fuels are gaseous ones like natural gas, hydrogen and propane.

- They also include alcohols, such as ethanol, methanol and butanol, vegetable and waste-derived oils, and electricity.
- They can be utilized in a specific system that uses a single fuel or in a mix system with other fuels, such as traditional diesel or gasoline, for instance as in hybrid vehicles or those that use flexible fuels.
- Certain vehicles and engines are engineered for alternative fuels, according to the manufacturer.
- Some are modified to run on alternative fuel by altering the control of the engine and the fueling system to match the initial design.
- Fuel engines that are flexible (flexible fuel vehicles, or FFVs are equipped with internal combustion engines and can operate with gasoline or any mix of ethanol and gasoline).

Topic 136. VIGYAN PRAGATI

Important for subject: Science and Technology

CSIR's National Institute of Science Communication Research and Policy (CSIRNIScPR), New Delhi hosted the launch of the Special issue their Popular Science Hindi magazine "Vigyan Pragati" on the 23rd of August 2022.

- In 2022, the popular magazine from NIScPR will have completed its glorious 70 years of spreading the science to the general people.
- The first issue was released in August 1952. This edition (August 2022) of "Vigyan Pragati" is a compilation of India's top organizations engaged in science public relations.
- Both voluntary and government-funded organizations have been included in this

issue.

- Vigyan Prasar (VP) is an autonomous organisation under the Department of Science and Technology (DST), Government of India.
- The primary goal that VP has VP is to assist the Indian science and technology agenda.
- This is achieved by using a variety of strategic two-way specific strategies for stakeholder communication about the fundamentals and application of science and technology, and impacts on the quality of life and development.
- Science popularization serves as a solid knowledge-driven instrument to achieve three goals of public policy that are mutually strengthening.

Topic 137. WHAT YOU NEED TO KNOW ABOUT IMMUNITY DEBT AND HOW MAY IT AFFECT KIDS

Important for subject: Science and Technology

As if the normalization of life was just around the corner Parents are now being warned of a fresh danger to their children's health.

- Doctors have expressed concerns about a rise in common illnesses, like respiratory syncytial viruses (RSV) as well as seasonal flu--may be just around the corner.
- This is because of what's known as "an "immunity debt," a result of the non-pharmaceutical strategies taken to fight COVID-19.
- Doctors worry that once COVID-19 restrictions are lifted as well, the temporary suppression of ailments like RSV chickenpox, strep throat flu, and others and could trigger more outbreaks in the future.
- "Immunity debt "Immunity debt" refers to the inability to stimulate the immune system due to the lower exposure to germs, viruses and bacteria due to the implementation of COVID-19's security and locking measures.
- "Immunity Debt "immunity debt" occurs because of measures like lockdowns hygiene, social isolation, and masks. They aren't just efficient in reducing Covid-19, but also reduce spreading of diseases that transmit in the same manner, such as common cold, flu and others.
- Respiratory Syncytial Viral (RSV) is an extremely common respiratory infection that typically causes mild cold-like symptoms. Signs of the virus: Runny nose, decrease in

appetite, coughing, Fever, Sneezing

- The signs usually manifest within 4-6 weeks after becoming affected and can manifest in phases.
- The recovery process is usually a short one. Most people recover within a couple of weeks, however, it could be a serious issue for infants and older adults.
- Treatment is not available. While there is no treatment specific to RSV infection, taking non-prescription medications to reduce fever and pain drinking enough fluids in order to prevent dehydration can help alleviate the symptoms.

Topic 138. WOMEN IN SCIENCE

Important for subject: Science and Technology

Department of Science and Technology (DST) has launched an exclusive scheme called Women in Engineering and Science-KIRAN (WISE-KIRAN) which will ensure female participation in the area of Science and Technology (S&T) by implementing various gender-friendly programmes.

- "Women Scientists Scheme (WOS) is a part of WISE-KIRAN. It offers a variety of opportunities for women technologist and scientists, particularly those who have had a break in their careers in order to conduct research.
- In this program, female scientists are encouraged to conduct research in the frontiers of engineering and science, with societal implications, and also to undertake an S&T-related work, which is that are followed by self-employment
- The initiative is primarily focused on giving women technologist and scientists between the age of 27 and 57 years, who experienced an interruption in their careers and were not employed regularly and to consider the possibilities of returning to the field.
- There are three types of fellowships that include Research grants are offered to India citizens:
 - Women Scientist Scheme-A(WOS-A): Research in Basic/Applied Science
 - Women Scientist Scheme B (WOS-B): S&T interventions to improve Societal
 - Benefit Women Scientist Scheme-C (WOS-C): Internship in Intellectual Property
 - Rights (IPRs) for the Self-Employment. Furthermore, Indo-US Fellowship for Women in STEMM (Science Technology Engineering, Mathematics and Medicine)

supports women technologists and scientists to participate in international research collaborations in the top research institutions in USA.

- In addition to fellowship programs, DST also provides support in the development of research infrastructures and the establishment of cutting-edge research laboratories under "Consolidation of University Research through Innovation and Excellence (CURIE) Program for women's institutions to boost women's involvement in the S&T field.
- DST has also launched the new program "Vigyan Jyoti" for meritorious girls from Class 9-12 in order to inspire students to pursue a careers within science and tech especially in areas in which women are not represented.
- Gender Advancement for Transforming Institutions (GATI) is a movement to change institutions to be more gender-sensitive approach and inclusion with the aim to increase gender equality in S&T.
- "SERB-POWER (Promoting Opportunities for Women in Exploratory Research)" scheme of the Science and Engineering Research Board of DST seeks to reduce the scientific participation by women in research and to reduce gender inequality within engineering and science.
- Additionally, the Department of Biotechnology (DBT) is also implementing the Biotechnology Career Advancement and Re-orientation Program (BioCARE) to boost the involvement by Women Scientists in Biotechnology research and also to establish Janaki Ammal the National Women Bioscientist Awards to honor the work of women who are senior or young researchers in the country working in the field in Biology as well as Biotechnology.
- Further, the Council of Scientific & Industrial Research (CSIR) is giving 5 years' relaxation in upper age limit to women candidates to be eligible for award of Fellowships/Associate ships to pursue doctoral and postdoctoral research to promote women in science & technology.
- Additionally, Ministry of Earth Sciences has also introduced a new award known as "National Award for Woman Scientist" from the year 2018, and is given to a single female scientist every year.

Topic 139. SULFURIC ACID: THE NEXT RESOURCE CRISIS THAT COULD STIFLE GREEN TECH AND THREATEN FOOD SECURITY

Important for subject: Science and Technology

Without sulfur, in the form of industry would be unable to make the fertilizers containing phosphorus that increase yields on farms or extract vital metals that are used in anything from solar cells to automobile batteries.

- But a problem is still looming, that is largely ignored.
- Over 80 per cent of the world's sulfur supply comes from waste products made from fossil fuels such as natural gas and oil (which typically contain between one and three to 3 percent sulfur in weight) to lower sulfur dioxide emissions which is the gas responsible for acid rain.
- The price of sulfuric acid could rise and increase competition, which could lead to green technology companies that are more profitable will likely outbid producers of fertiliser.
- This could increase the price of production of food and food more costly for consumers, especially in countries with poorer economies in which farmers are least capable of paying for the more expensive costs.
- A vital industrial chemical Sulfur is present in a variety of items, including tires, sulfur fertiliser paper, soap and detergent.
- However, its main use lies in industrial chemical. It is used to decompose many different substances.
- The rapid growth of low-carbon technology like high-performance batteries, lighter-weight motors for cars and solar panels will dramatically increase the mines of minerals. especially laterite ores , which are becoming significant sources of cobalt and nickel.
- The majority of them are extracted with large amounts of sulfuric acid.
- It is estimated by the US Geological Survey estimates that there is an almost endless amount of sulfate minerals within Evaporites (rocks that are formed by the natural evaporation of the shallow lakes, salty oceans, or salty waters) and huge resources of iron sulfides as well as elemental sulfur found in volcanic deposits however, accessing them requires expanding mining and processing of minerals.
- Converting sulfur from sulfates using the current techniques consumes much energy

and produces a large amount of carbon.

- Sulfur mining and sulfide processing can cause pollution to soil, air and water, as well as acidifying the surface of aquifers and surface pools, as well as emitting toxic gases such as arsenic, mercury and thallium.
- There are also human rights concerns that are a part of mining operations in the intensive range.

Topic 140. GEOGRAPHICAL INDICATION

Important for subject: Science and Technology



The inaugural versions of India GI Fair, Khilona-India Toys & Games Fair Maa Shishu and STEM Confex taking place simultaneously between the 26th and 28th of August 2022 in the

India Expo Centre & Mart

What is a Geographical Indication?

- It's a sign that it comes from a certain geographic area.
- The term is employed to denote either natural or agricultural products
- It is a symbol for products with a distinct geographic origin and an evolution over decades with respect to its distinctive qualities or well-known characteristics.
- It's a symbol of authenticity. It ensures that authorized registered users or at a minimum, those living within the geographical area are able to use most well-known product names.
- The GI tag used in India is subject to the Geographical Indications of Goods (Registration and Security) Act, 1999.
- This is issued by Geographical Indications Registry (Chennai).

What are the benefits of the registration for geographical designations?

- It provides the legal right to Geographical Indications in India Prevents illegal use of the Registered Geographical Indication by others.
- It encourages the prosperity of the producers of goods within a geographic area.

What indications aren't registered?

- In order to be registered, the indications must fall within the meaning of Section 2 (1) E of the GI Act, 1999.
- In this regard, it is required to comply with the requirements in section 9 that forbids the registration of a Geographical Indication.
- This is likely to mislead or cause confusion.
- The application of which would be in contradiction with any law at the time in force, or
- It contains shocking matter this includes any issue that could harm at the moment of its inception or affect the religious susceptibilities of any kind or segment of Indian citizens
- That could otherwise be disposed of for protection in the court of law; or
- They are deemed to be general names, or signs of products and are consequently, no longer from being protected by the country of origin or are in decline in the country in which they originated;
- This is true to the region of the territory or location from which the goods are sourced,

do not convey to people they are claiming to originate from an alternative region, territory or locale, as the case may be.

How long does the Registration of Geographical Indication is valid?

- A registration for a geographic designation is valid for a duration of 10 years
- It is possible to renew it periodically for another 10 years per year.

Topic 141. 5G CELLS TO PIGGYBACK ON POLES AND HOARDINGS

Important for subject: Science and Technology

In order to speed up the introduction of 5G, the telecom companies across the country will utilize street furniture like poles, advertising hoardings, and bus shelters to deploy low-power base stations referred to as Small Cells. These will assist in bringing the network closer to users.

- Smart Cells 5G tiny cell are bases that serve only a tiny portion of a macro website.
- They are generally located in urban areas with dense populations like stadiums, downtown malls, train stations and other areas that have large data capacity and coverage.
- Small Cells are essential for 5G deployment as opposed to earlier versions such as 4G, due to they have a higher frequency.
- The greater the frequency, the shorter the wavelength, which implies that their distance is shorter.
- Small cells will have an important part in the 5G's development as they are required to take advantage of the features of 5G like high delay (minimal delays) as well as ultra-high speeds and massive connections.
- For higher frequencies within that range 3.3-3.6 GHz, which are likely to be used for providing 5G services, the signals will be able to travel between 100 and 150 metres.
- At time of writing, telecom towers that are around 30 meters tall they are situated within a distance of around 5 km.
- Macro base stations can have issues with penetration indoors, especially in the case of metallic structures that block signal transmissions to the network.
- Therefore, the requirement for coverage indoors as well as in stadiums and large venues is very common, especially in stadiums where capacity is a problem. That's why small cell technology is the most effective solution.

- In the 5G Small Cell category, there are the following types of cells Femtocells 0.001-0.25 (W) output power and 0.010-0.1 (km) cells radius Picocells -- 0.25-1 (W) output power and 0.1-0.2 (km) radius Microcells 1- 10 (W) output power and 0.2-2.0 (km) radius of the cell Macrocells - 10 to 50 (W) output power, and between 8-30 (km) cells radius Right of Way Rules
- The Department of Telecom last week also issued an updated Right of Way (RoW) Rules that pave the way to deploy 5G Small Cells to existing street infrastructure. The department anticipates that these changes will enable the introduction of 5G services across the country by October 2022.
- The amendments will allow for rationalisation of the charges, introduction of an all-window clearance system and getting rid from the need to obtain approval from a government agency to install infrastructure on private property.
- In order to speed up the rollout of 5G, RoW application procedures for Small Cells are now simplified. Telecom licensees can make use of the street infrastructure to install telecom equipment for a price of just Rs150 per year in rural areas, and the equivalent of Rs300/annum for urban locations.
- In accordance with the revised rules, telecom licensees may sign agreements to private owners of property, and do not require authorization from any government agency for the installation of telecom infrastructure like towers, poles or optical fiber.
- Furthermore, no administrative fee will be imposed from government officials of the Central Government for installation of poles in land controlled by it.
- For State/UTs, this cost will be restricted to Rs1, 000 per pole.
- The cost for the installation of optical fibers in the ground will be set at Rs1,000 per km.
- Telecom Regulatory Authority of India (TRAI) The Telecom Regulatory Authority of India (TRAI) was established on the 20th of February 1997, by the Telecom Regulatory Authority of India Act 1997.
- The mission of TRAI is to foster and create conditions for development of telecommunications across the country.
- TRAI regulates telecom services, including changes to tariffs and fixation of services that were previously at the disposal of the Central Government.
- It also seeks to create an equitable and transparent policy environment that promotes

an equal playing field and encourages fair competition.

Comprising of TRAI

- The TRAI is comprised of the Chairperson, two full-time members, and two part-time members
- All of them have been elected through the Government of India.
- The Chairperson and the other members will hold office for a period of 3 years or until they reach the age limit of 65 or until they reach the age of 65 years, whichever comes first.
- The Chairperson has the authority of general supervision.
- The person in charge of the sessions at the TRAI.
- The Central Government may appoint one of the members of the Authority as Vice-Chairperson for TRAI.
- The vice-chairperson is responsible for and exercises the duties and powers of the Chairperson during his/her absence.
- The Chairperson is in charge to organize the meetings at time.
- The person who is in charge of the meetings.
- The votes in meetings are made by a majority vote of those present.
- If there is an equal number of votes In the event of an equal number of votes, chairperson (or the member who is in charge of the meeting) offers an additional vote or casting.
- Its recommendations to the TRAI do not have any binding effect on Central Government. Central Government.

Topic 142. UNSUNG TRIBAL FREEDOM FIGHTERS

Important for subject: History

Ministry of Culture has released the third Comic book based on stories from the 20 Tribal Freedom Fighters on 2 August, during the Tiranga Utsav festival located in New Delhi.

- Tilka Majhi revolted against the inhumane practices that were committed by The British East India Company. He rallied the tribe of Pahadia that he was part of and robbed the Company Treasury. He was executed.
- ThalakkalChanthu belonging to ThalakkalChanthu of the Kurichiyar tribe was a crucial part of Pazhassi Raja's battle with the East India Company. He was hanged.

- Budhu Bhagat of the Oraon tribe was killed in one of his many encounters with British together with his brother seven sons, and 150 members of his tribe.
- Tirot Singh Tirot Singh, one of the Khasi chief, realized the shadiness that was the British and fought against the British. He was snatched and tortured, and later was incarcerated. He was killed in prison.
- Iv RaghojiBhangre belonged to the Mahadeo Koli tribe.
- He rebelled against the British and fought on even after his mother was in prison. He was rounded up and hanged.
- Sidhu as well as KanhuMurmu members of Sidhu and KanhuMurmu from the Santhal community, who resisted those who were British and their supporters.
- They were the leaders of in the Santhal during the Hul revolt. They both were betrayed, snatched and executed.
- RendoManjhi as well as Chakra Bisoi from the Khond tribe protested against the British interference in their customs.
- Rendo was arrested and hanged, while Chakra Bisoi fled and later died in hiding.
- It was the time that an Indian Uprising in Meerut had started. Nilambar and Pitamber belonging to the Bhogta clan of the Kharwar tribe were motivated to protest and led their tribe to revolt to fight British oppression. Both were arrested and executed.
- Ramji Gond of the Gond tribe rebelled to protest the system of feudalism through which rich landlords oppressed the people in need with the help by the British. He was convicted and hanged,
- Telanga Kharia of the Kharia tribe was adamant against their tax structure of British and their system of governance.
- He demanded that they adhere to their old method of self-government and organized raids on Treasury. He was snubbed and killed.
- Tantiya Bhil also often referred to as Robin Hood of the Central Provinces stole trains that carried British wealth, and then distributed the money among his tribal group, the Bhils.
- He was held and hanged.
- Major PaonaBrajabasi of Manipur was a soldier fighting for the Kingdom of Manipur. He was the Hero of the war between Manipur and England.
- He fought as an lion, but was defeated and killed.

- Birsa Munda from the Munda tribe became a legend during his struggle against the British. He was the leader of the Mundas in several battles against them.
- He was snatched and imprisoned and, according to British reports, died from the disease cholera. He was aged 25 when he passed away.
- MatmurJamoh, a member of the Adi tribe from Arunachal Pradesh, revolted at the arrogance and rudeness of the British.
- He and his comrades gave up their lives to the British when their homes were being burned. They were taken into the Cellular Jail and died there.
- Tana Bhagat, a member of The Oraon tribe was prompted by a divine vision to speak to his people to make them aware of the oppression of their British superiors.
- He was snatched and tortured to death. He was released and was a broken man and then died.
- Malati Mem, a member of the community of Tea-garden was inspired to take part in Mahatma Gandhi's Satyagraha movement.
- She stood up against the British Opium monopoly and educated her citizens regarding the hazards of addiction to opium.
- In the course of an encounter with police she was killed by police.
- Laxman Naik, a member of the Bhuyan tribe was impressed by Gandhi and worked tirelessly for tribes to be part of the movement for freedom.
- The British were able to frame him for the murder of a close friend and then he was hung to death.
- Helen Lepcha of the Lepcha tribe was a fervent adherent to Mahatma Gandhi. Her influence on her tribe led to the British anxious.
- She was attacked, imprisoned and chased, however she never lost her courage.
- In 1941, she helped Netaji Subhas Chandra Bose escape from house arrest, and then travel to Germany.
- She was presented with her the Tamra Patra for her invaluable contribution to the struggle for freedom.
- Pulimaya Devi Podar listened to Gandhi while she was at school, and she wanted to fight for freedom as soon as she could.
- Despite being admonished by her family, she was a part of the movement following her studies. She also encouraged other women to join in.

- She was imprisoned due to her role in protests.
- After her return to independence, she continued to help her people and was given the title of "Swatantra Sainani".

Topic 143. PINGALI VENKAYYA

Important for subject: History

PM, Shri Narendra Modi paid tribute on behalf of Pingali Venkayya on his birth anniversary.

- PingaliVenkayya was born on the 2nd August 1876 in the Bhatlapenumarru village in Andhra Pradesh.
- PingaliVenkayya was an agriculturist as well as an educator who established an educational institute in Machilipatnam.
- In the course of his time within South Africa at the time of the Anglo Boer war, Venkaya served as an Anglo Boer war soldier. British soldiers in the army.
- Venkayya was extremely dedicated and loyal to Gandhi and was a staunch believer of Gandhian beliefs.
- He released an informational booklet about flags. The book was called "A National Flag for India."
- It had 24 design of flags. In 1921, when he was meeting Gandhi in Vijayawada the city, he handed the publication to him.
- Gandhi was thrilled to see the design . He also recognized the necessity of a national flag and demanded Venkayya to design a new one for the National Congress Meeting, held in 1921.
- Initially, PingaliVenkayya-designed the flag featured saffron and green colours only (called the swaraj flag) ; however, later, it was redesigned, and the third colour, white, was introduced along with a spinning wheel (Dharma Chakra) at the centre.
- After several modifications after which after undergoing several changes, the Tricolour became the flag of our nation during an Congress Committee meeting in Karachi in 1931.

The Indian flag was adopted in its current shape at a session in the Constituent Assembly held on July 22nd in 1947. The Indian was stricken with poverty

Topic 144. DID VEER SAVARKAR 'PROPOSE' TWO-NATION THEORY? HOW ISLAMISTS AND CONGRESS HAVE LIED ABOUT THE IDEA THAT IS INHERENT IN ISLAMIC THEOLOGY

Important for subject: History

Modern History The theory of two nations was first formulated in the year 1876, in the work of Syed Ahmad Khan, the creator of the Aligarh Muslim University, and not by Savarkar in 1937.

- Syed Ahmad Khan said in 1876 "I am convinced now that Hindus and Muslims could never become one nation as their religion and way of life was quite distinct from each other."
- 14 August 2020, it is the 2nd Partition Horrors Remembrance day, that was announced by the premier Narendra Modi last year to pay tribute to the sufferings and the victims of the people who were victims of the Partition of India.
- In the course of partitioning India that split British India into three parts into two nations that comprised India and Pakistan millions of Indians were forced to relocate and suffered in the process, and estimates of deaths caused by the partition can range from 20,000 to 20,00,000.
- Annie Besant spoke of the massacre in her book , 'The India's Future'.
- The timeline of the Partition of India The partition of Bengal was the first action of the British to break Hindu Muslim unity.
- In 1909, the introduction of Morley Minto reforms in 1909 proved to be a crucial moment in the fight against the colonial dominance in India.
- Reforms were introduced that created a process under that separate electoral districts were constituted in which the only Muslims were able to vote Muslim candidates in the constituencies that were that were specifically designated for them.
- The Montagu Chelmsford reforms, also known as The Montagu Chelmsford reforms or Government of India Act 1919 along with reservations of seats to Muslims included clauses for reservation of positions in Provincial and Imperial parliaments to Sikhs, Anglo-Indians, Indian Christians and the domicile Europeans.
- Following World War 1, the Muslims in India were shocked by the reality they were told that Caliph of Turkey was no longer able to retain his authority over Muslim sacred sites.

- The Caliph was seen by Muslims as the spiritual leader and was entrusted with the responsibility to protect the sacred places.
- When Gandhi Ji along with the other Congress leaders were working on their Non-Cooperation protest in the year 1920 In 1920, the Muslims joined them to voice their displeasure over the mentioned issue.
- During the time that the movement continued it was a time of remarkable Hindu Muslim unity in terms of their involvement in it.
- In the wake of the Chauri Chaura incident in which a group of British police officers were killed as a result of an initiative by the participants from the Non-Cooperation movement, the protest was ended through Gandhiji the Muslim officials felt vindicated as their protest against the demise of the Caliphate went in limbo due to the call off of the movement.
- Following the year 1930, the demands for a distinct Muslim Nation following the declaration of independence was first articulated.
- Sir Muhammad Iqbal became the leader of the Muslim League in 1930 . In that year, the Muslim League at first, he articulated the need for a separate Muslim state.
- The strategy that was followed by the British to rule and divide was illustrated in the Communal Award of 1932.
- This policy also made it easier to separate electorates.
- In 1940, Jinnah made it clear during an Muslim League conference held at Lahore, "Hindus and the Muslims are two distinct religious philosophies, religions, social practices and literature.
- The Cripps Mission in 1942 suggested that India be granted Dominion status in the British empire.
- The Mission refused to accept the request for Pakistan but did allow the provinces to separate of the Indian Union.
- The Cabinet Mission plan of 1946 started by advocating for the transfer of power to a single India with some autonomy granted to Muslims in areas of Muslim dominance.
- A temporary government was established in September 1946, but it had only members from the Congress since it was the Muslim League was not willing to accept any less than an autonomous Pakistan The 16th of August 1946 Jinnah declared Direct Action Day and the Muslim League raised the demand for an independent

Pakistan.

- The idea to divide British India into two states was announced on June 3rd, 1947.

Topic 145. IT'S ALL ABOUT MONEY -THE EVOLUTION OF BANKING SECTOR IN INDIA

Important for subject: History

Contemporary India Robert Clive could have not achieved his goals, were it not for the bank belonging to Jagat Seths. Jagat Seths.

- One of the major reasons Delhi ultimately fell in 1858, one year before that First War of Independence, was the support that the British received from Hindu financiers from Chandni Chowk
- In Chennai In Chennai, the Nagarathars as well as the Arya Vysyas and the Gujaratis and the Marwaris are remembered forever in the region known as Sowcarpet.
- This is where Sahukars also known as loan lenders helped the trade of the Company.
- The Chola economy prospered through trade and conquer and the profits from one were used for financing another. In the 12th century starting from Periya Puranam, we find that banking and money lending were well established.
- The tale of Thirugnanasambandar in this epic work refers to merchants from Vaippur who was able to lend money
- In the 16th century's book Amuktamalyada the tale of Andal The King Krishnadeva Raya describes the business community of Madurai
- The Indian Overseas Bank was promoted by the Sir MCtMuthiahChettiar family in 1937.
- However, this didn't suggest it meant that British banks were in decline.
- They served their only British clients who were British.
- The three Presidency were each banking independently. The three Presidency they fought over the matter until 1921, when it was the time that the Imperial Bank of India was created by their amalgamation.
- In 1935, India was given its own financial regulator called The Reserve Bank of India.
- Independence brought numerous changes, among them the nationalization of the Imperial Bank in 1952, and the change of the name of its bank to State Bank of India.
- It was also required to alter its methods - to fit an entirely new system of government

with fresh objectives.

- However, the basic principles of banking have remained the same throughout the years.

Topic 146. INDIA @75: FREEDOM SONGS THAT CATALYSED STRUGGLES AGAINST COLONIALISM

Important for subject: History

Poets such as Rabindranath Tagore Aurobindo Ghosh Subramania Bharati Vallathol Narayana Menon, Sarojini Naidu, Mahadevi Verma and others in India have rejected the notion of territorial racialisation of nationalists during the war for freedom and tied it to the bigger causes of humanity and the cosmopolitan patriotism.

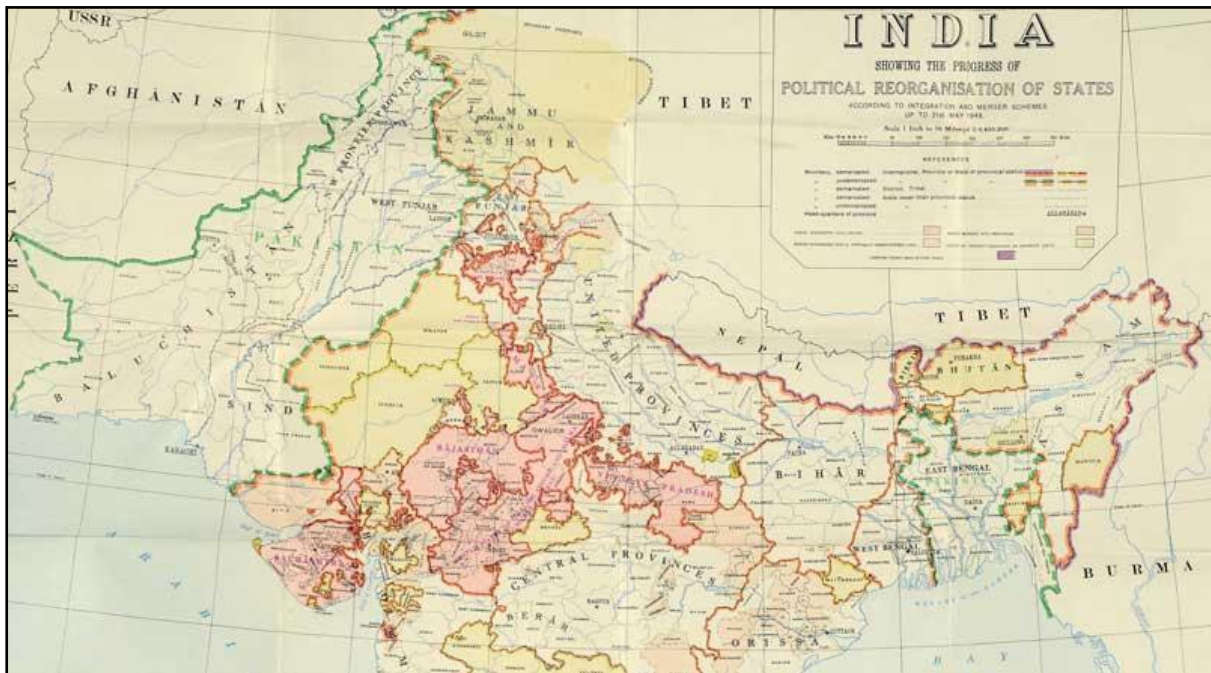
- Aurobindo demanded independence for India in the larger interest of the world.
- Therefore, while Westerners considered homogeneity the key for the development of a state-like nation, Indian poets saw nationalism as the source for moral energy and spiritual enthusiasm towards the nation.
- He wrote poetry such as "Bride Of The Fire Life", "The Golden Light", "The Dreamboat". "Life and Death", "Who", "O Coil, Coil".
- Rabindranath Tagore famously stated, "I will never allow patriotism (read nationalism) to triumph over humanity as long as I live", also composed India's national anthem Jana Gana Mana, which is our obligation as a sacred duty to celebrate freedom.
- If Tagore declared the freedom of provincials in his poetry, like Banglar Maati Banglar Jol (Earth of Bengal, Water of Bengal)
- He also broadened the concept of nationalism by crossing the boundaries of small boundaries of ethnic and geographical preconceptions, such as "Where the mind is without fear and the head is held high."
- Bankim Chandra Chatterjee's Vande Mataram (I Praise Thee Mother!) was written originally in Bengali at first, portrayed India as a goddess of motherhood and love for one's nation was believed to be the most sacred action.
- It was also given the status of a national song within the context of India's struggle for independence.
- It was performed in the political context at first through Rabindra Nath Tagore in the

session in 1896 of the Indian National Congress.

- Sarojini Naidu, better known for her work as Bharatiya Kokila (The Nightingale of India) was a poet who offered a more nationalist view of nationalism in her poetry such as "To India".
- However, Subramania Bharati, the Tamil poet referred to as Mahakavi Bharathi expressed the plight of oppressed and inspired them to stand up against the British yoke. He also spoke of his belief in pantheistic philosophy in crystal clear detail.
- Three of his most acclaimed works , namely KuyilPattu, PanchaliSapatham and Kannan Pattu were written in 1912.
- Savitribai Phule is regarded as the first radical, modern Marathi poet, addressed issues of gender and caste in her writing and speaking, as well as by direct interventions.
- In her poetry collection "Kavya Phule", she wrote about breaking the chains of caste and called for an urgent appeal to the caste with lower rungs.
- We are in the midst of celebrating the campaign 'Har GharTiranga as one of the 75th Independence Day celebrations (Azadi ka Amrit Mahotsav)
- It's a good time to remember that the song of the flag (ZandaGeet) was composed by the poet Shyamlal Gupta.
- The song was declared the national song during Haripur Congress in 1934. Haripur Congress of 1934.
- Subhadra Kumari Chauhan, a well-known writer from India's Hindi heartland, further widened the nationalism sphere by paying a dazzling tribute to the bravery of Rani of Jhansi with her timeless lines:"Khoob marudaani ladi Jhansi"waliRanithi." Poetry in the hands of poets such as Ramdhari Singh Dinkar, who is hailed by the media as being an Rashtrakavi (national poet) the patriotic poetry discovered an influx of enthusiasm for Veer rasa, as well as poetry of resistance.
- There are chilling lines from the poem Singhasan Khaali Karo Ke Janata Oaati Hai ('Vacate the seat of power because there are people going to come').
- Similarly, Ram Prasad Bismil, one of the founding members of Hindustan Republican Association,galvanised millions of youths with his revolutionary poem "Sarfroshi ki tamanna" during the freedom struggle.
- The poem of Faiz Ahmad Faiz's Subh-e Azad will bring back painful memories of the struggle for freedom and partition.

Topic 147. WHY 1947 BOUNDARY COMMISSION AWARDS FOR PUNJAB AND BENGAL IRKED INDIA

Important for subject: History



On the 17th of August 1947, two days post Independence the awarding to the Boundary Commissions for the partition of Punjab and Bengal was announced.

- **What was the purpose of those two Boundary Commissions?**
- In June 1947 Sir Cyril John Radcliffe, a British lawyer, was appointed the chairman of the two border commissions from Punjab as well as Bengal and was given the responsibility to define the boundaries of India along with Pakistan.
- He was granted a period of five weeks in which to complete this job and was in India in July 1947.
- The boundary commissions for Punjab and Bengal included two nominees from both the Indian National Congress and Muslim League respectively.
- The Boundary Commissions award was announced on the 17th of August 1947. which was later referred to by The Radcliffe Line.
- The Radcliffe line split India as well as Pakistan into two separate countries.
- Radcliffe broke up India into three sections the India, West Pakistan and East Pakistan(present the day Bangladesh) as well as India

Topic 148. SHRI AUROBINDO***Important for subject: History***

In celebration of the 150th anniversary of Maharshi Aurobindo and the 75th year of Independence The Ministry of Culture is commemorating the life and work of Shri Aurobindo through the implementation of Spiritual Programs within 75 of the prisons throughout the country between the 12th through 15th August, 2022.

- It was an Indian spiritual and political philosopher, yoga guru maharishi writer, leader of the revolution, and Indian nationalist ideologist.
- The journalist was also his name, writing newspapers like Bande Mataram.
- Aurobindo was a student in his studies for Indian Civil Service at King's College, Cambridge, England.
- After his return to India he was able to perform various civil service positions with the Maharajas of the princely State of Baroda and began to become more involved in nationalist politics within the Indian National Congress and the developing revolution in Bengal along with an organization called the Anushilan Samiti.
- The year was 1892. He was in various posts as an administrator within Baroda (Vadodara) as well as Calcutta (Kolkata).
- He was arrested in aftereffects of a series of attacks linked to his group in a public trial , where the defendant was charged with being a traitor for the Alipore Conspiracy.
- While in jail He experienced spiritual and mystical experiences following which he relocated to Pondicherry and left politics to pursue religious work.
- At Pondicherry, Sri Aurobindo developed a spiritual practice he called Integral Yoga.
- His belief was in spiritual realization that not only freed but also changed the human condition, opening up an enlightened life on earth.
- In 1926, with the assistance of his spiritual partner, Mirra Alfassa (referred in the book as "The Mother"), Sri Aurobindo Ashram was established.
- His major literary works include The Life Divine, which is a philosophical study that is Integral Yoga; Synthesis of Yoga and Synthesis of Yoga, which focuses on the basic principles and techniques for Integral Yoga; Savitri: A Legend and A Symbol, a epic poem. Bhagavad Gita and its message

- It is the Future Evolution of Man Rebirth and Karma Hour of God

Topic 149. ALL INDIA RADIO

Important for subject: History



Memories and magical moments with All India Radio since Independence All India Radio to broadcast every day starting on August 15th in its prime-time News Bulletins

- All India Radio All India Radio is among the biggest broadcasting organizations worldwide, with broadcasts across 179 languages in 23 different dialects on 479 stations spread across the country.
- It covers close to 92 percent of the total population. 99.19 percent of the population.
- The motto of the organization is 'Bahujan Hitaya: Bahujan Sukhaya', meaning 'for the happiness of many, and for the well-being for many'.
- All India Radio (AIR) was established in 1957 and is now officially known under the name Akashvani (literary that means "Voice from the Sky") is the nation's public radio station of India and is an affiliate of Prasar Bharati.
- It was first established in 1936. The home service of AIR comprises more than 420 stations all over the United States, covering more than ninety-two percent of nation's region and 99.19 percent of the total number of people.
- Broadcasting was first broadcast in June 1923 under the British Raj with programs by the Bombay Presidency Radio Club and other radio clubs.
- The company was liquidated on March 1, 1930.
- The government took over broadcasting services and started with the Indian State Broadcasting Service (ISBS) 1 April 1930, on an experimental basis for two years. It was then extended officially in May 1932, it was later transformed into All India

Radio on 8 June 1936.

- Clone Congress Radio Congress Radio, that was established on August 22, 1942. It was put to combat the in august 1942., Mahatma Gandhi launches the Quit India Movement during the Bombay session of the All-India Congress Committee.
- In response to the call Responding to his call, a student aged 22 from Wilson College, Usha Mehta creates an undercover radio station in order to fight the propagandists who are broadcast through All India Radio, the British government's official mouthpiece.
- On the 14th of August 1942 Usha together with some closest associates launched an operation called the Secret Congress Radio, a secret radio station.
- It aired on 27 August.
- Secret Congress Radio also kept those in charge of the movement for freedom in contact with the people.
- The undercover Congress Radio brings messages from Gandhi and other leaders to the masses. It and reports on the 'unofficial' side of events, and combats propaganda for three months, until the detention and arrest for its members during November that same year.
- Congress Radio, which began operations in August 1942 was created to fight the British-controlled AIR and is often referred to as "anti-India Radio.".
- Usha Mehta Usha Mehta (25 March 1920 11 August, 2000) was one of the Gandhian activist and freedom fighter from India.
- She was brave and compassionate Prof. Usha Mehta (Ushaben), one of the few women in the group. She is a major figure.
- Born on March 25, 1920 in Saras Village in Surat district in Gujarat and grew up to be a bright and enlightened student in Bombay.
- In 1928, eight year old Usha took part in a demonstration marches to protest Simon Commission. Simon Commission She used to mobilise her friends and create Prabhatpheris together with them, all dressed in the national tricolour.
- They also were able to picket the liquor stores.
- She was introduced to Mahatma Gandhi when she was young girls and made vows to wear khadi for the rest of her life. She also started studying law. She ceased the course in 1942 in order to join in the Quit India Movement.

- The Chittagong Bomb Raid, Jamshedpur strike, and the running of government in parallel states like Bihar as well as Maharashtra were just some of the major events that were the result of the underground Radio transmitted to public.
- The police stumbled upon them on November 12, 1942, and detained the organizers, which included Usha Mehta.
- All were later imprisoned in Yeravda Jail in Pune. In March 1946 she was released. She was the first political prisoner released in Bombay under the direction from Morarji Desai, who was at the time the home minister of the government in interim.
- She continued to promote the Gandhian ideals and was honored by the prestigious Padma Vibhushan in 1998.

Topic 150. TAMILS & THE MANY WARS OF INDEPENDENCE: PRE-1857

Important for subject: History

The speech he delivered on Independence Day speech, Tamil Nadu Chief Minister M K Stalin chronicled the life of more than a dozen Tamil liberation fighters all of whom fought those of the British in their respective Dravidian territories before 1857 the year generally regarded as the year of the beginning of the Indian freedom fight.

- Puli Thevar Stalin started with the tale of PuliThevar who was the ruler of Nerkattumseval close to Tenkasi in the southern part of Tamil Nadu, and who in 1755, told his East India Company that "not even a grain can be paid as tax".
- "Maaveeran (Great Warrior)' Marudhanayagam Another historical figure Stalin mentioned was called 'Maaveeran (Great Warrior)' Marudhanayagam a warrior from the 17th century who was the commander of sepoys in the British and served as the "governor" in Madurai as well as fought Hyder Ali in a battle.
- It was 1764 when Marudhanayagam of Panaiyur close to Sivagangai took on Sivagangai, fought the British in a battle that was a lively one which ended in his death when Marudhanayagam was unable to surrender.
- Kattabomman Kattabomman, an 18th-century king of Panchalankurichi in Tamil Nadu, is a well-known name in the state. A person who's brave resistance to the East India Company is often mentioned to incite Tamil pride.
- On 1799, Kattabomman was executed to death for leading a war in the name of the British. In his address, Stalin had quoted Kattabomman famously saying, "Ask me to

donate to charity, and I'll.

- I'm not going to ask you to pay taxes, but I'm not going to." He was a participant in the 1 Poligar conflict against British in 1799.
- Sundaralingam as well as Vadivu Sundaralingam the captain of the Kattabomman's Army, as well as his cousin Vadivu who was the one who carried out an attack of suicide at the British.
- VeluNachiyar VeluNachiyar was the first Indian queen to battle against British She led the women of a battalion to take Sivagangai against the British.
- Kuyili VeluNachiyar's commander in the army, who burned herself to death and then jumped into the arms that belonged to the East India company -- and is often referred to "the "first woman martyr" in Indian history.
- ChinnaMarudhu and PeriyaMarudhu brothers who fought British cannons using the valaris (a traditional weapon that was deadly and designed to look like an oversized boomerang).
- DheeranChinnamalai as well as Pollan DheeranChinnamalai, who was taken to the Gallows in 1805 and his spy and captain, Pollan, who was killed in 1805 by the British.
- Chinnamalai was one of the commanders of Chinnamalai was one of the commanders in Polygar Wars, notably during the Second Polygar War that took between 1801 and 1802. Vellore Mutiny Vellore Mutiny predated the Indian Revolt in 1857 by approximately 50 years.
- The eruption occurred on July 10, 1806 in Vellore which is now Tamil Nadu, and lasted just a few hours, however it was brutal and shaken the British East India Company.
- The first significant revolt by the Indian sepoys of the East India Company.
- The primary causes for the mutiny centered around anger over changes in the dress code for sepoys, which was introduced in November 1805.
- Hindus were forbidden from wearing mark of their religion on their foreheads during duty and Muslims were obliged to cut their beards off and reduce their moustaches.

Topic 151. CULTURAL AND HISTORICAL CONNECTION AMONG INDIA AND THAILAND

Important for subject: History

India and the Southeast Asia region share a long tradition of commercial and cultural relations.

- Devasthan in the course of his trip to Thailand to attend the 9th India-Thailand joint commission meeting, the Minister of External Affairs S.
- Jaishankar Thursday visited the Devasthan in Bangkok. Devasthan Devasthan can be described as being located in the Royal Brahmin Office of the Thai Royal Court and is the official center in Hinduism within Thailand.
- There are many languages spoken in the region, like Thai, Malay, and Javanese are based on words of Sanskrit, Pali and Dravidian source in large amounts.
- It is believed that the Thai dialect is written with script, which is derived from the Southern Indian Pallava alphabet.
- The classic Sanskrit as well as Pali texts of India contain references to the region, using different names like Kathakosha, Suvarnabhumi (the land of gods) and Suvarnadvipa (the Golden Island).
- India's links to religion to Thailand The most significant contribution from India in Southeast Asia was in the realm of religion and the ways in which Shivaism, Vaishnavism, Theravada Buddhism, Mahayana Buddhism and later Sinhalese Buddhism came to be used throughout the region.
- The stories that comprise Ramayana along with Mahabharata are frequently used in plays and puppet events.
- Architecturally monuments such as the Borobodur Stupa, in Java and or the Angkor Vat temple in Cambodia, My Son temple in Vietnam are among the finest instances of Indian influence throughout the region.
- Thailand is currently an Buddhist majority nation, and there are numerous temples throughout the country, where Buddhist and Brahmanical Gods are revered together.
- Alongside the popular Brahmanical gods of Ganesha, Brahma, Vishnu and Shiva, those mostly absent from the Indian social-religious settings including Indra are also revered in Thailand.
- The Ramayana is popular as in Thailand in Thailand as Ramakriti (the splendor of

Rama) or Ramakien (the story of Rama) It has given a platform for culture within Thailand to both wealthy and commoner.

- Trade Link Trade Link Tamil text found in Takua-pa demonstrates the trade connections to and the Pallava region in South India and southern Thailand.
- A mercantile company that was part of South Indians called Manikarramam had set up a base here and had its own tank and temple, and operated as a self-contained colony.

Topic 152. THE THE LORD CURZON GATE TMC STATUE-POLITICS RILES OPPN EXPERTS, EXPERTS

Important for subject: History

Lord Curzon became famous because of his decision to divide Bengal in 1905.

- It is an 119-year-old building dedicated to Lord Curzon who was viceroy of India for six years beginning in 1899 located in Bardhaman situated in West Bengal is at the heart of a political squabble.
- Maharaja of Bardhaman Bijay Chand Mahatab constructed the gates in 1903 during the time Curzon went to the city. Curzon, Lord Curzon 1899-1905 Appointment of the Police Commission (1902) under Sir Andrew Frazer to review police administration.
- Nomination by the Universities Commission (1902) and adoption of the Indian Universities Act (1904).
- Establishment of Department of Commerce and Industry.
- Calcutta Corporation Act (1899). Ancient Monuments Preservation Act (1904). Partition of Bengal (1905).
- Curzon-Kitchener controversy. Younghusband's Mission to Tibet (1904).
- In 1904 The Co-operative Credit Societies Act was approved to inspire the citizens to establish organizations to hold lending and deposits.
- In 1900 The Punjab Land Alienation Act was adopted, which prohibited the transfer of lands belonging to farmers to money-lenders in case that they fail to pay their dues.
- In 1899 it was the year that the British Currency was declared to be legal to be used in India and the pound was declared equal to rupees 15.

- In 1901, the MacDonnell Commission 1901 was the commission to deal with the famine created by the Lord Curzon.

Topic 153. WOMEN ARE THE HEROINES OF INDIA'S STRUGGLE FOR FREEDOM, NAMED BY THE PRIME MINISTER IN HIS I-DAY SPEECH.

Important for subject: History

The ninth Independence Day address to the nation from the walls of the Red Fort, Prime Minister Narendra Modi exclaimed "nari shakti", and asked the people to take a pledge to not engage in anything that diminishes women's dignity, which is also a fundamental obligation in our constitution, article 51A(e).

- The Prime Minister also made a tribute to women who fought for freedom and for demonstrating to that the entire world what is the real meaning behind the Indian concept of "nari shakti".
- The women he mentioned as part of his remarks: laxmibai queen of the state of princely Jhansi
- The queen of Jhansi, Rani Laxmibai, is well-known for her participation in the First War of Indian Independence which took place in the year 1857.
- Her birth name was ManikarnikaTambe on 18th March,1835 she got married to the King of Jhansi.
- The couple had a son before the death of the king, which was a matter that the British East India Company refused to acknowledge as the legal heir, and determined to add Jhansi.
- Jhalkari Bai, a soldier in the women's Army of Rani Laxmibai Durga Dal She was elevated to becoming one of most trusted advisors to the queen.
- She is famous for putting her personal life in danger to ensure that the queen is out from danger.
- To this day, the tale of her courage is often recalled from the residents of Bundelkhand and she is often portrayed as a symbol of the Bundeli identity.
- Durga Bhabhi Durgawati Devi, who was more popularly referred to by the name Durga Bhabhi, was a revolutionary who took part in the struggle for independence from the colonial regime.
- A member of Naujawan Bharat Sabha, she assisted Bhagat Singh escape disguised

from Lahore following the murder in 1928 of British police officer John P Saunders.

- During the train trip that ensued, Durgawati and Bhagat Singh appeared as a couple as well as Rajguru was their main servant.
- As a retribution to the execution of Bhagat Singh, Rajguru, and Sukhdev Durgawati made a failed attempt to take down Lord Hailey, the previous Punjab Governor Lord Hailey.
- The girl was born at Allahabad in 1907 and later married to Hindustan Socialist Republican Association (HSRA) member Bhagwati Charan Vohra. Durgawati together with other revolutionary leaders, also operated the bomb plant in Delhi.
- Rani Gaidinliu Born in 1915 in the present day Manipur, Rani Gaidinliu was a Naga political and spiritual leader who was a fighter against the British.
- She was a part of in the Heraka religious movement, which eventually evolved into an effort to expel the British.
- She resisted the Imperial government and was unable to pay taxes, and urged the people to take the same action.
- The British initiated a manhunt however, she was able to escape arrest, shifting through villages to village.
- Gaidinliu was finally detained in 1932, at just 16 years old, and was later sentenced to life imprisonment. Gaidinliu was freed in 1947.
- The prime minister Jawaharlal Nehru according to the Amrit Mahotsav website Gaidinliu was described as the "daughter of the hills" and gave her the title 'Rani for her courage.
- Rani Chennamma The queen of Kittur, Rani Chennamma, was one of those who were the very first monarchs to start an armed revolt in the face of British rule.
- Kittur was a state of princely status that is now Karnataka.
- She fought back against an attempts to take control of her power in 1824 following the death of her infant son. Her husband had died, Raja Mallasarja, in 1816.
- She is regarded as one of the few rulers of the day who understood the colonial aims that were imposed by the British.
- Rani Chennamma defeated the British in her first uprising but was taken prisoner and imprisoned in the second attack from the East India Company.
- Begum Hazrat Mahal after the death of her husband Nawab from Awadh Wajid Ali

Shah was banished following the 1857 rebellion, Begum Hazrat Mahal, along with her comrades, began to fight the British and seized the control of Lucknow.

- Then she was forced to retreat when the colonial rulers reclaimed the territory.
- VeluNachiyar was a long time before the 1857 revolt, VeluNachiyar waged a war against the British and won.
- The girl was born at Ramanathapuram on 17th December 1780. In 1780 she got married to the King of Sivagangai.
- After her husband's death in battle against the East India Company, she joined the war and was able to win with the help of the kings of neighboring kingdoms.
- "She went on to produce the first human bomb as well as establish the first army of trained women soldiers in the late 1700s," is on the Amrit Mahotsav site.
- She was her army's chief Kuyili is thought to be the one who set her on fire and then entered a British ammunition factory.
- Her successor was the daughter of her in 1790 and then died a couple of years after in 1796.

Topic 154. WHO IS PANDURANG KHANKHOJE? GHADARITE REVOLUTIONARY AND HERO FROM MEXICO?

Important for subject: History

Lok Sabha Speaker Om Birla present at Canada in preparation for the 65th Commonwealth Parliamentary Conference, will visit Mexico in the coming days to reveal statues honoring Swami Vivekananda as well as Maharashtra's freedom fighter and agriculturalist Pandurang Khankhoje (1883-1967).

- Khankhoje was a close associate to Mexico as a country which was a refugee because of his affiliation with the pro-Indian independence radical Ghadar Party.

Who was Pandurang Khankhoje?

- Born in Wardha, Maharashtra, in the late 19th century.
- Pandurang Khankhoje was in contact with other revolutionary leaders early in the.
- In close proximity and his mentor, the Hindu Reformer Swami Dayanand and his Arya Samaj movement which advocated for an attitude of reform and social transformation and became the hero of an aspiring student group that was led by Khankhoje.

- Khankhoje joined the Mount Tamalpais Military Academy in California to fulfill his initial goal of departing India
- What was his connection to the Indian freedom movement?
- Khankhoje was among the founders of the Ghadar Party, established by Indians who were living abroad in 1914, most of whom belonged to Punjab.
- The goal of the Ghadar Party was the lead of a revolution to defeat British troops British and British in India.
- Together with Indian workers, a militant campaign was scheduled with Khankhoje India however the advent of the First World War halted these
- They then contacted Bhikaji Cama, who was in Paris and also was able to meet alongside Vladimir Lenin in Russia among other leaders to seek help to Indian cause.
- However, because the possibility of deportation was looming, he fled from Europe and was not able to go to India He sought refuge in Mexico.
- In the near future, due to his past acquaintance with Mexican revolutionaries and revolutionaries, he was made as a professor in the National School of Agriculture in Chapingo close to Mexico City.
- He studied wheat, corn pulses, rubber and corn creating drought-resistant and frost-resistant varieties.
- He also was involved in efforts to bring an era of Green Revolution in Mexico.
- Then the American agriculturalist Dr Norman Borlaug, called the "father" of the Green Revolution in India, introduced his Mexican grain variety of wheat into Punjab.
- Pre-Ghadr revolutionary activity as early as 1907, Ram nath Puri, a political exile on the west coast issued a circular-e-azadi(circular of liberty) in which he also pressed support to the swadeshi movement; Tarak Nath Das in Vancouver started the Free Hindustan and adopted a very militant nationalist tone; D.Kumar set up a Swadesh Sevak Home in Vancouver on the lines of the India house in London and also began to bring out a Gurumukhi paper called Swadesh Sewak which advocated social reform and also asked Indian troops to rise in revolt against the British.
- In 1910 TarakNath Das as well as G.D. Kumar, now exiled from Vancouver established an unison India House in Seattle and the U.S.A.
- It was the Ghadar Party: the Ghadar Movement was founded in 1913 by expatriates

Punjabis who resided in their native United States with shared leadership from Sikhs, Hindus, and Muslims.

- The purpose of the group was to aid in the overthrow of British oppression in India.
- The publicity this group received to the United States was used as another reason to justify discrimination against Asians and suspicion.
- The group was founded and was headed by Har Dayal, a Punjabi Hindu, Har Dayal who was studying in Stanford University.
- The initial leaders of the group comprised two Sikhs as well as one Muslim as well as the masthead of their publication was adorned with its names "Ram, Allah, and Nanak."
- Sohan Singh, Kartar Singh, Abdul Mohamed Barakatullah, TarknathDas and Rashbehari Bose were among the notable leaders who laid the foundation for the creation of an Indian political group that was based in both Canada and the United States and Canada.
- Ghadar Party - Activities The Ghadrprogramme sought to arrange assassinations of government officials, release anti-imperialist and revolutionary literature and collaborate with Indian soldiers stationed overseas to obtain arms, and incite a massive uprising across every one of the British colonies.
- In it became clear that the First World War broke out in 1914, a few participants of the Ghadar Party arrived in Punjab to incite an insurrection armed to gain India's independence.
- They also had success in smuggling weapons into the country and encouraging a mutiny among Indian soldiers of the British Army.
- The subsequent revolt, now called The Ghadar Mutiny, was brutally crushed by the British who executed 42 mutineers in the wake of the Lahore Conspiracy Case trial.
- However, Ghadar Party members Ghadar Party fought against colonialism between 1914 and 1917 with the help by Imperial Germany and the Ottoman Empire as both had Central Powers opposed to the British.
- The Ghadar Party was based around the weekly paper The Ghadar, which featured the masthead's caption Angrezi Raj K Dushman (an adversary to British ruling).
- "Wanted brave soldiers to stir up rebellion in India," the Ghadar declared. In the aftermath of the Komagata Maru Incident in 1914 that was a direct assault on

Canadian anti-Indian immigration laws hundreds of Indians who resided in the United States sold their businesses and homes to force Indians and the British from India which boosted the members of the Ghadar Party.

- Between 1914 and 1917, Ghadarites carried out anti-colonial activities underground with the backing from Germany in addition to Ottoman Turkey and Ottoman Turkey, a group known by the name of the "Hindu-German Conspiracy that culminated in a sensational court trial held at San Francisco in 1917.
- While its efforts to overthrow the British Raj were unsuccessful, the revolutionary ideals of the Ghadar Party influenced members of the Indian Independence Movement opposed to Gandhian non-violence.

Topic 155. EXPLAINED: WHAT IS MANDALA IN ART?

Important for subject: History

A stunning "Mandala" artwork, larger than football pitches, covers a park that is open to the public located in Liverpool within the United Kingdom.

- It was unveiled on August 12, the work of art on land named The Knowsley Mandala was unveiled on August 12. It is composed from natural elements and is expected to last for a month, after which it will slowly disappear.
- The creator behind the work of the Halewood Park Triangle is Yorkshire-based James Brunt, who is famous for his use of natural materials that are found in parks, forests and even on beaches to create intricate art pieces which he photographs and documents the process of their decay.
- The art is a form Mandala patterns are patterns that date back centuries and are used to illustrate the universe.
- They've been modified by artists all over the world and each artist have added their own unique ideas to the designs.
- Literally, meaning literally meaning "circle" or the "centre" in Sanskrit Mandala is defined as an geometric pattern that typically encompasses the circular shape into a shape or.
- Although it is also made in the shape of the shape of a square, a mendala pattern is in essence interconnected.
- Mandala is a symbol of Hinduism as well as Buddhism. Mandala imagery first was discovered throughout the Vedas (c. 1500-500 BC) and Buddhist missionaries

traveling through the Silk Road are believed to have spread it to other regions that were not part of India.

- In the 6th century, mandalas had been recorded throughout China, Korea, Japan, Indonesia and T Separately the native American people are believed to use the mandalas as a an image of gods or the cosmic order, as well as a form of worship. Its significance
- There is a belief that, by getting into the mandala, and then moving towards its center it is possible to experience an energizing process that transforms the universe, and shifting from feelings of pain to the joy of feeling.
- In Hindu philosophical traditions the mandala, also known as yantra typically takes the form of a square, with the center of the circle.
- Traditional Buddhist mandala is circle-shaped painting intended to assist its creators to discover their own inner self.
- There are a variety of elements in the mandala, each of that has its own significance. For example the eight spokes of the wheel (the Dharmachakra) represent the eightfold path of Buddhism that leads to freedom from the cycle of death and birth.
- The lotus flower symbolizes balance, while the sun is the symbol of the universe. When facing upwards, triangles symbolize energy and action, while when they are facing down, they symbolize imagination and understanding.
- Mandala in contemporary Indian art, and it continues to be featured as a motif in Buddhist Thangka paintings, it is a prominent part of the work of mainstream artists that are part of the tantric and neo-tantric spiritual movement.
- In deciding to move away from the more abstract depictions of the earlier generation of Indian artists, Sohan Qadri and Prafulla Mohanty, during the 1960s, received wide recognition for their work that were infused with tantric symbols, such as mandalas. They are also utilized to perform rituals for tantric induction.
- Mandalas as therapy components as component of the art therapy, patients are encouraged to design and color mandalas. Also, studies have been conducted to determine how mandalas may help in reducing stress.
- Swiss psychoanalyst and psychiatrist Carl Jung explored the psychological effects of mandalas. He also used it in psychotherapy.

Topic 156. GO TO RED FORT AND RELIVE THE MUGHAL ERA THROUGH AUGMENTED REALITY

Important for subject: History

A little over four years ago, that the Dalmia Bharat Group bagged the maintenance contract for the historical Red Fort in Delhi, becoming one of the initial corporate partners to join the government's "adopt an existing monument" initiative and unveiled an interactive visitor center that showcases the rich history of the Mughal fort in a way that is immersive.

- "Adopt a Heritage: Apni Dharohar, Apni Pehchaan" It is a joint effort of both the Ministry of Tourism, Ministry of Culture and Archaeological Survey of India (ASI), States and the UTs governments.
- The objective is to build tourist facilities at heritage sites or natural tourist destinations located across India to make them tourist-friendly, in a planned and gradual method.
- The monuments/sites are chosen according to the level of traffic and visibility.
- They can be used by both public and private sector businesses and individuals also known as Monument Mitras -- for the initial five years.
- The Monument Mitras were selected by the 'oversight & vision committee, co-chaired the Tourism Secretary as well as the Culture Secretary on the basis the bidder's "vision" to develop the entire infrastructure of the historic site.
- There isn't a financial bid in the process.
- The business sectors is expected make use of CSR funds to support the site. Responsibility (CSR) money to fund the ongoing maintenance of the website.
- Mughal Architecture:
 - This is a style of building that was popular in the northern and central regions of India through the authority of Mughal Emperors from the mid-16 until the end of 17 century.
 - The Mughal period witnessed a dramatic return to Islamic architecture in the northern region of India.
 - Under the patronage and guidance of the Mughal Emperors, Persian, Indian, and various styles of provincial origin were merged to create work of exceptional quality and sophistication.
 - It was so common in northern India that it are further seen in the Indo-Saracenic colonial architectural style.

Important Features:

- **Mixed Architecture** The style was a mix with Indian, Persian, and Turkish architectural styles.
- **Diverse:** Different kinds of structures, like magnificent gates (entrances) mausoleums, forts, mosques, palaces, sarais and more. The building material was mostly white marble and red sandstone were utilized.
- **Particularities:** Special aspects like pietra-dura works and the foreshortening technique, the Charbagh style of mausoleums with their distinctive bulbs, slim turrets on the corners, wide gates, gorgeous calligraphy geometric, and arabesque patterns on walls and pillars, and palace halls anchored by the pillars.
- The arches, chhatris and various designs of domes were extremely popular during the Indo-Islamic period and were further refined during the Mughals.
- Akbar popularized "Tudor arch" and Akbar popularized "Tudor arch" (four centered arch with four centered).

Some Examples:

- **Agra Fort**
- The Fort is fortified situated in Agra.
- It was among the first structures constructed under Akbar's reign.
- The majority of the structures inside the fort were built under Shah Jahan's rule.
- These are some of the most notable structures found that are located in the area:
- **Moti Masjid** by Shah Jahan.
- **Diwan-i-aam** (Hall of Public Audience) and **Diwan-i-khas** (Hall of Private Audience) by Shah Jahan.
- **The Jahangiri Mahal.**
- **Sheesh Mahal** (Turkish Bath).
- **Fatehpur Sikri**
- The creation of a brand Capital city that was rebuilt by Akbar from Fatehpur Sikri is one of the greatest achievements of Indo-Islamic architecture.
- The structures in this area exhibit an unique blend in Hindu and Persian architecture. They are described as an "frozen moment in history."
- **Buland Darwaza** the 40-meter red sandstone tower that was constructed in 1576 AD in celebration of the victory of Akbar over Gujarat It is among the city's most

recognizable buildings.

- It is the highest doorway.
- The Tomb of Salim Chishti was erected in 1581 AD.
- It is adorned with beautiful white marble Jaali workmanship with arabesque patterns across the walls and the inscriptions of Quranic text.
- Buland Darwaza as well as Jama Masjid are also part of the imperial complex.
- In 1606 AD Jahangir embellished the palace further.
- Panch Mahal Panch Mahal is a five-storey structure made of columns. It is inspired by the Persian badgir concept (wind-catcher).
- The insides of Jodha Bai's Palace is also known as Mariam-uz Zamani's Palace (Mary of the Old Age) is decorated with Hindu bells and floral designs.

Ibadat Khana:

- This is the place where Akbar would sit down with religious authorities to discuss issues.
- Pachisi Court, where Akbar is believed to have played Chess inside the court.
- HiranMinar HiranMinar was named for Akbar's favorite elephant, Hiran.
- It also functioned as a lighthouse for travelers.
- It's an original style with spikes shaped like tusks on the exterior wall.
- Then, in Vrindavan, Akbar also constructed Vrindavan, Akbar also constructed a Govind Dev Shrine.

Taj Mahal:

- The building was constructed in 1632 by Shah Jahan between 1632 and 1653 in memory of his wife Mumtaz Mahal.
- UNESCO acknowledged The Taj Mahal as a World Heritage Site in 1983.
- It is situated in Agra.
- Taj Mahal has several distinctive aspects:
- The jaali work of Taj Mahal is lace-like and extremely beautiful.
- The marble carvings were of low relief.

Itmad-ud-daulah's tomb:

- During Jahangir and his spouse Noor Jahan also conducted some major construction projects, among them of them being The Tomb of Itmad-ud Daulah (Noor Jahan's father).

- At this point the white marble began to replace red sandstone for the primary construction material. Itmad-ud Daulah's tomb was among the first Mughal structure constructed solely of white stone.

- It also includes some of the finest works in pietra dura.

Red Fort:

- It was built for Shah Jahan in 1618 when Shah Jahan decided to relocate to the capital of Agra and move it to Delhi. It was the home for the Mughal rulers.
- UNESCO declared it a World Heritage Site in 2007.

Jama Masjid:

- Built by Shah Jahan in Delhi.
- The construction was finished in 1656.

Badshahi Mosque:

- It was built in the time of Aurangzeb.
- When it was completed in 1673 it was the biggest mosque in the world.
- It is situated in Lahore which is the capital city of the Pakistani province of Punjab.

Bibi-ka-Maqbara:

- Aurangzeb on the other hand, ordered for the building of Bibi-kaMaqbara to honor the wife of his, Begum Rabia-ud-Daurani.
- It is situated at Aurangabad and is believed as a poor imitation from the Taj Mahal.

Topic 157. GOVERNORS AS CHANCELLORS: THE POINTS OF CONFLICT

Important for subject: History

The present day India In the early years of our Republic There were not any conflicts between governors , chancellors or state governments.

- The Congress was in charge at both the state and national levels.
- The President, who is bound by the Prime Minister's instructions and advice, appointed people who were closely tied to the political party as governors.
- Colonial Time the Bengal Council of Education championed the creation of a university with the ability to award degrees in science, arts medicine, law, and engineering civil.
- The council recommended an idea that government models the school on similar to that of the University of London, an exam and degree-granting institution.

- Nine years later, the government of India agreed to this idea with some minor modifications.
- The "Despatch of 1854 regarding the General Education in India" popularly referred to as Wood's Despatch suggested the establishment of schools in India.
- It was recommended that universities should be governed by three vice-chancellors, a chancellor and fellows. They could form a Senate.
- It further said that office of vice-chancellor and chancellor are normally filled by those of a high rank, who have demonstrated an passion for education'.
- In response to this suggestion the Governor General took the decision to make him the chancellor of the University in Calcutta and that the governors of Bombay and Madras will be the chancellors of the two universities in the towns of the presidency.
- The three universities were set in the year 1857 in Calcutta, Bombay, Madras through separate laws passed through the Legislative Council of India.
- After the declaration of Independence a committee led by the Dr Sarvepalli Radhakrishnan remarked that the custom of the governor becoming a chancellor was successful in states that had only one university.
- Commission left it up to the states to decide if they wanted their governor to become the chancellor, particularly if the state had several universities.
- States have opted to remain with the status quo and when they enacted legislation for their universities and making the chancellor their governor.
- In 2010 in 2010, the Punchi commission (Centre-state relations) declared that when governors serve as chancellors, they open their offices to scandals or public critics.
- This year in the year 2000, earlier this year, the West Bengal Legislature passed a law that makes chief minister the chancellor for thirty-one state university.
- Wood's Despatch on Education in 1854 It laid the groundwork for the system of education that has evolved since then.
- Education-related issues in India were among the major issues for the British government in 1853.
- Recommendations For the very first time Wood's Despatch suggested the creation of the establishment of a Department of Public Instruction in all five provinces in Bengal: Bombay, Madras, Punjab and the provinces of North-Western.
- The development of public education was another of the major recommendations

from the Despatch.

- As it was realized that the majority of people did not have access to education, much focus was put on increasing amount of primary schools, middle, and high schools.
- The establishment of three universities in the Presidency cities comprising Calcutta, Bombay, and Madras was suggested by the newspaper Despatch.
- The universities were planned to be modeled on London's University of London.
- departments of Arabic, Sanskrit, and Persian and civil engineering and law, were planned to be set up at the universities.
- Wood's Despatch called for the creation of a grant-in-aid program for Indian education.
- The Wood's Despatch stressed that it is important to teach English while also highlighting how important it is to teach Indian languages.
- The Despatch suggested that the government support women's education. It also recommended that women's education be supported. Wood's Despatch recommended that teacher education schools be created in every province.
- Engineering, medical, and law instructors are all required to be trained through special education schools. In the Wood's Despatch advocated for the creation of a nationwide network of school grades.
- Governor's appointment, the powers and all things associated with the office of Governor were debated under Article 152-162 of the Indian Constitution. Article 162 in the Indian Constitution.
- The powers and appointment of the government can be traced from the Part VI of the Indian constitution.
- Article 153 provides that there must be a Governor for every State.
- A single person may be appointed Governor of up to two States.
- Governors act in "Dual Capacity", as the Constitutional head of the state, and as a representative.
- He is part of the Indian law.
- He is part of the federal structure Indian political system and acts to act as an intermediary between federal and states' governments.
- Article the 157th article and Article 1558 of the Constitution of India specify eligibility requirements for the post governor.

These are:

1. Governors must
2. You can become an Indian citizen..
3. Must be at minimum 35 years old.
4. You cannot be a member of either the house of state legislature or of legislative bodies of state.
5. No one holds any office for gain.
 - The term of the governor's office is typically 5 years. However, it is possible to be terminated earlier if:
 - The president has dismissed the president upon the recommendation from the council of ministers which is headed by the premier Minister of the nation.
 - Governors who are dismissed without justification is not permissible. It is however the responsibility for the President to depose governors whose actions are recognized by courts as unlawful and malafide.
 - Resignation of the governor.

Constitutional laws

- The article 163 speaks about the discretionary powers of the governor.
- The power to exercise the executive authority of the Union will extend to giving of any directions to a State that might be considered by an Government of India to be essential for the goal.
- Article 257: Executive power conferred by the Union is also extended to the granting of directives to a state regarding the maintenance and construction of communications devices that are declared by the direction to be of military or national significance
- Article 355 confers the responsibility to Union to defend the States from "external aggression" and "internal disturbance" to ensure that the governance of each State is in line with the Constitutional provisions.
- Article 356: If it is found that a state's government is incapable of functioning in accordance with Constitutional provisions The Central government may assume direct control over State machinery.
- The governor of the state issues the proclamation after getting the approval from the Indian President. India.
- Article 357 is about the exercise of legislative power under Proclamation issued

pursuant to Article 356 issued by the government of central.

Topic 158. WORKING TOWARDS ANIMAL HEALTH

Important for subject: Government Scheme

Physiography On the 29th of June, the Earth completed one full rotation -- or a day - -that was 1.59 milliseconds lower than the time it takes to complete its normal 24 hour cycle.

- Also, the Earth is moving fast. What's new? Even though the Earth is completing its rotations at a faster pace in recent times in comparison to an extended period of time, the planet actually is spinning slower.
- Every century is when the Earth will take just a few milliseconds more time to complete one full rotation in the average, the days are becoming longer.
- Thus, 1.4 billion years ago a single day would have lasted just 19 or less hours. The Guardian reported in 2018 quoting an academic paper that was published the same year.
- The study attributed the greater tendency of Earth's slow rotation mostly due to the gravitational pull exerted by the Moon which creates friction in the tidal zone and slows the Earth's spin.
- Why are the days becoming shorter? The hypothesis is that climate change-related surface changes, which affect the way the Earth spins and spins, could be the reason.
- These changes in the surface include melting glaciers that are found in Greenland and Antarctica and changes in the ocean circulation.
- Experts believe that the reason is internal and is rooted in the core's movement.
- among the numerous factors that influence speeds of Earth are the movements of the core of the planet's inner molten core as well as the activity of seismic waves, winds speed and atmospheric gases shifting.
- The actions that push mass towards the center of the Earth will accelerate the Earth's rotation. On the other hand, anything that pushes mass away will slow the spin.
- There are some experts who claim that the shorter length of the day may be due to the "Chandler wobble," an event that is the tiny deviation in geocentric poles of Earth.
- The usual intensity of the Chandler wobble is three or four metres on the surface of the Earth, however from 2017 until 2020, it vanished
- The turning Earth is influenced by a variety of elements, such as variations in the way

that winds blow, or currents within the ocean.

- Certain of these elements can boost the speed of the planet as well as bring it down.
- What could happen if Earth continues to accelerate on a regular basis?
- To make sure that the time displayed on clocks corresponds to the speed of Earth's rotation, the system of leap seconds has been in use from the 1970s.
- They require one-second adjustment for Coordinated Universal Time (UTC) which is the standard for time employed to synchronize clocks throughout the globe.
- In response to the slowing of the earth's rotation due to the slowing of the planet's spin, 27 leap seconds have been added to UTC.
- But, if it is the case that Earth continues to rotate faster and the days are subsequently shorter, scientists could need to develop the first ever negative leap second' that is a subtraction of seconds from the clock

Topic 159. OPERATION AAHT

Important for subject: Government Scheme

A month long special campaign against Human Trafficking through the rails was announced in July 2022.

- The Railway Protection Force, as an intervention mechanism to complement those efforts by Anti Human Trafficking Units (AHTUs) of the police, recently launched an operation to stop Human Trafficking called "Operation AAHT".
- As part of Operation AAHT, the infrastructure and the intelligence network of the force can be used to gather, collate and analyze clues about victims, sources, routes and destination, the most popular trains used by suspects, identity of the kingpins/carriers/agents/carriers etc. and then provided to other law enforcement agencies.
- In this scenario situation, the RPF could be able to function as a bridge across Statesto help local police with their task to stop the crime.
- RPF has established more than 750 AHTUs across the nation which will work in conjunction in conjunction with Police RPF is negotiating an MoU NGOe.
- Association of Voluntary Action (AVA) is also is known as Bachpan Bachao Andolan which will assist RPF by providing training. It will also provide information on Human Trafficking to RPF.

- The campaign provided a platform for all stake holders to join together in a joint effort in the fight against Human Trafficking through rail.
- A month long special campaign against Human Trafficking via rail was announced in July 2022.

Topic 160. QUALITY CONTROL OF AYUSH DRUGS

Important for subject: Government Schemes

Health-related steps taken: Drugs and Cosmetics Act 1940: It implements the legal provisions and provides regulations for the issuance of a drug license for Ayurveda, Siddha, Unani and Homoeopathic medicines.

- The authority to issue licenses is the responsibility of the State Drug Controllers or State Licensing Authorities who are appointed by the responsible State Government or Union Territory Government.
- Pharmacopoeia Commission for Indian Medicine & Homoeopathy (PCIM&H): It is a subsidiary office within the Ministry of Ayush lays down Standards for Pharmacopoeia as well as Formulary guidelines regarding Ayurveda, Siddha, Unani and Homoeopathy (ASU&H) substances that fall within the scope of the Drugs and Cosmetics Act 1940, that serve as an official documents for assuring the quality of the medicines contained in it.
- It also has an appellate drugs testing lab which accepts samples from government agencies.
- AYUSH Oushadhi Gunvatta Utpadan Samvardhan Yojana (AOGUSY) This program was implemented by the Ministry of Ayush (Central Sector Scheme) to improve India's capabilities in manufacturing and exports, and to facilitate technological and infrastructure up-gradation.
- It improves the regulatory frameworks that allow for efficient monitoring of quality and Pharmacovigilance of ASU&H drugs through checking for misleading advertising of Ayush medicines and develop standards for accreditation and certification of Ayush's products and materials at BIS, QCI and other R&D centers.
- AYUSH-- AYUSH is an acronym that stands for Ayurveda, Yoga and Naturopathy, Unani, Siddha and Homeopathy and comprise the six Indian medical systems that are widely used and used in India as well as some of the neighbouring Asian countries

with only a only a few exceptions in the advanced countries.

Topic 161. PROMOTION OF RENEWABLE ENERGY

Important for subject: Government Schemes

An investigation was carried out by the Central Electricity Authority, Ministry of Power with the intention to estimate what would be the Optimal Generation Capacity mix for 2029-30.

- The results of which were released in January of 2020.
- In the report the estimated electricity generation by the renewable sources of energy was calculated as 39% of total electricity generation in 2029-30.
- The government has taken numerous measures to encourage renewable energy in the country to meet the target to have 500 gigawatts of renewable energy capacity in 2030.
- Allowing Foreign Direct Investment (FDI) up to 100 percent through an automatic process.
- Exemption from Inter State Transmission System (ISTS) fees for interstate sale of wind and solar energy for projects that are to be put into operation in June 2025.
- Declaration of the trajectory of the Renewable Purchase Obligation (RPO) through 2030.
- Establishment the first of Ultra Mega Renewable Energy Parks to provide transmission and land in exchange for RE developers on an "plug and play" basis.
- Schemes such as Pradhan Mantri Kisan Urja Suraksha evam Utthaan Mahabhiyan (PM-KUSUM), Solar Rooftop Phase II, 12000 MW CPSU Scheme Phase II, etc,
- The construction for new transmission lines as well as the creation of new sub-station capacity as part of the Green Energy Corridor Scheme for extraction of renewable energy.
- Establishment of Project Development Cell for attracting and facilitating investment.
- Standards Bidding guidelines for a tariff basis competitive bidding procedure for the purchase of power generated by Grid Connected solar PV as well as Wind Projects.
- The government has issued an order that power will be dispersed to Letter of Credit (LC) or advance payment in order to ensure timely payment of distribution licensees RE generators.
- in 1963.

Topic 162. NATIONAL INTELLECTUAL PROPERTY AWARENESS MISSION (NIPAM)

Important for subject: Government schemes

National Intellectual Property Awareness Mission (NIPAM) has reached its goal of providing Intellectual Property (IP) awareness and basic education to 1 million students.

- NIPAM is a renowned program designed to teach IP awareness and training in the basics it was officially launched on the 8th of December 2021 as part of the "Azadi Ka Amrit Mahotsav" celebrations.
- The program is implemented in the Intellectual Property Office, the Office of Controller General of Patents, Designs and Trade Marks (CGPDTM), Ministry of Commerce and Industry.
- The pan-India ambitious initiative is to raise awareness about intellectual property rights and their legal rights for 1 million schoolchildren.
- Its goal is to teach the spirit of innovation and creativity to students attending higher education (classes 8-12) and to inspire and excite the students of universities and colleges to invent and safeguard their work.

Topic 163. MULYA PRAVAH

Important for subject: Government Schemes

The University Grant Commission has approved the updated guidelines for "Mulya Pravah"

- Mulya Pravah: University Grants Commission (UGC) has unveiled a policy framework
- Mulya Pravah Guidelines for the inculcation of human values and Ethics in Professional Practice in higher Educational Institutions

Topic 164. SUPREME COURT HEARS PLEA TO KEEP TABS ON DRUG PRICES

Important for subject: Government Scheme

Supreme Court on Thursday took seriously the plea to provide transparency to the monitoring and pricing of drugs in addition to the recent allegations against the producer of Dolo-650 tablet of engaging into "unethical practices".

- The NGO that submitted the petition claimed that it was the Central Board of Direct

Taxes (CBDT) has been accusing the pharmaceutical company that makes Dolo-650 of providing gratuitous gifts to the amount of Rs1,000 million to physicians and other medical experts to market the product.

- The petitioner claimed that the prices that was being charged for Dolo that was up to 500 milligrams was subject to the regulation. Anything over 500 mg isn't subject to the regulation.
- National Pharmaceutical Pricing Authority (NPPA) NPPA was constituted by the Government of India in 1997 as an office attached to the Department of Pharmaceuticals (DoP), Ministry of Chemicals & Fertilizers as an independent Regulator to determine the price of medicines and to make sure that there is accessibility and availability of drugs at reasonable costs.
- It was established to modify or adjust the prices of controlled bulk and prescription drugs and to ensure the availability and price of medicines across the country, as per the Drugs (Prices Control) Order 1995-2013 (DPCO).
- A bulk drug often referred to as Active Pharmaceutical Ingredient (API) is the chemical molecule found in the medicine that gives the product its claims of therapeutic benefits.
- Mandates to enforce and implement the requirements in the Drugs (Prices Control) Order in accordance with the authority conferred to it.
- To handle any legal issues that arise from any decisions made by the NPPA.
- To track the supply of pharmaceuticals, to identify any shortages and to adopt remedial measures.
- To keep track of production of imports and exports market share of specific companies, and profitability of businesses and so on.
- For bulk pharmaceuticals and formulations, and to conduct or fund relevant studies on the price of pharmaceuticals or drugs.
- The Drug Pricing Regulator Mechanism (DPRM) all medications included in the NLEM are subject to price regulation.
- The NLEM contains medicines which are used to treat infection, fever hypertension, heart disease as well as anaemia.
- It also includes common medicines such as azithromycin, paracetamol and so on.
- It is the Health Ministry prepares a list of medicines that are eligible for price

regulation.

- Following this, the Department of Pharmaceuticals incorporates them into Schedule 1 of the DPCO.
- This is where the Standing Committee on Affordable Medicines and Health Products (SCAMHP) will give advice to the price regulator, the National Pharmaceutical Pricing Authority (NPPA) on the review of the list.
- The NPPA is then able to fix the price of the drugs on the Schedule. In accordance with the Drugs (Prices) Control Order 2013, Scheduled drugs, around 15 percent of market, are permitted an increase from the government as in the WPI (Wholesale Price Index) and the remaining 85percent are given an automatic rise of 10% each year.
- The annual increase in the price of the scheduled drugs is monitored and seldom exceeds the threshold of 5%. According to the Drugs and Cosmetics Act 1940 the drugs are listed in Schedules, and rules are enacted for their display, storage sales dispensing, leveling, prescribing, etc.
- The pharma lobby is seeking at least a 10% increase in the price of scheduled drugs, instead of following the WPI.
- Over the last couple of years, the cost of inputs have risen.
- One reason for this is that 60%-80% of China's needs for medicine depend on China.

Topic 165. SAFAIMITRA SURAKSHIT SHEHAR

Important for Subject: Government Scheme

More than 500 towns across India are claiming themselves "SafaiMitra-Surakshit Shehar."

- As a major achievement to put the ending to the manual cleansing of septic tanks and sewers the cities of 500 throughout India declare themselves to be "Safai Mitra Surakshit Shehar" by meeting safety standards of all sanitation workers involved in these activities.
- The cities have adopted mechanized cleaning of sewers, and when a sanitation worker has to go into a manhole, they are equipped with protection equipment.
- This way they have proved that their cities are capable to attain adequacy in terms of capacity in terms of manpower, equipment and manpower in accordance with MoHUA and provide secure working conditions for SafaiMitras.

- The 'SafaiMitra surakshit Shehar declaration signed by 500 cities is in line with the Swachh Bharat Mission-Urban's long-standing aim of encouraging sustainable sanitation practices and serving as a catalyst to the transformation of every 'manhole in to a machine hole'.
- The program was created with the aim of ensuring that there are no fatalities during sanitation-related work'.
- The scheme was launched on World Toilet Day in 2019 the ministry of urban affairs was able to launch the "Safai-Mitra Suraksha Challenge", through which it identified 100 cities with lighthouses which were well-equipped with sanitation facilities and infrastructure.
- States have established Responsible Sanitation Authorities (RSAs) as well as Emergency Response Sanitation Units (ESRUs) at district level.
- They they are now focusing on the training and development for Safai Mitras.

Topic 166. NATIONAL LABOUR CONFERENCE

Important for subject: Government Schemes

With a view to revitalizing the huge workforce of the country The Union Labour Ministry is about to begin discussions with the State Ministers of Labour about ways to ensure more women to participate and the new demands of the gig and digital economy, and also on the transition to jobs that are not suited for people with no experience.

- The issue is going to be on the agenda during the upcoming National Labour Conference of Labour Ministers as well as Secretaries of States and UTs that will take place between in August between twenty-five and 26 in Tirupati.
- The Labour Ministry will also conduct three surveys on an associate degree, on an all-India basis.

Topic 167. AYUSHMAN BHARAT DIGITAL HEALTH MISSION

Important for subject: Government Schemes

The National Health Authority (NHA) released hardware-related tips across States as well as Union Territories for tending establishments like hospitals, clinics , welfare and health centres to bring digitalisation to hospitals.

- The theme is scheduled to be announced in order to leverage technology to increase

the efficiency, effectiveness, and transparency of the supply chain health care across the Asian nations.

- Additionally, it aims to establish a national health infrastructure, based on Health IDs unique Identifiers for health care facilities and doctors as well as telemedicine and e-pharmacy Personal Health Records etc.
- The patients will be able to save, access and permission to share their medical records with physicians as well as they choose their health care providers.
- Unique Digital Health ID could include all the health information of any person.
- It is created by using details like Aadhar or mobile phone number to create a unique ID for them.

A national digital health system

- In this plan the national electronic health system will be built through the provision of an array of information, data and infrastructure services, and using open and interoperable standards-based digital technologies.
- It will also ensure privacy, security and confidentiality of any personal information relating to health.

Topic 168. SMART INDIA HACKATHON (SIH)

Important for subject: Government Schemes

Smart India Hackathon (SIH) began in 2017. SIH is a statewide initiative designed to give students an opportunity to address the urgent problems facing society, businesses as well as the government.

- It is aimed at instilling the spirit of innovation in products thinking, problem-solving and innovative thinking in students.
- The rising popularity of SIH can be seen in the amount of teams that have registered with SIH is experiencing a quadruple increase from about 7500 in the initial edition to around 29,600 in the current fifth edition.
- In this year's edition, Smart India Hackathon - Junior was also introduced as a model for school students to help them build the culture of creativity and to develop an attitude of problem solving at the school at the school level.

Topic 169. PRADHANMANTRI BHARTIYA JANURVARAK PARIYOJNA***Important for subject: Government schemes***

The Ministry of Chemicals and Fertilisers announced that it will implement One Nation One Fertiliser by the introduction of a "Single Brand for Fertilisers and Logo" under the scheme for subsidizing fertilisers dubbed "Pradhanmantri Bhartiya Janurvarak Pariyojna" (PMBJP).

- In the framework of the scheme, companies can show their brand name, logo or logo, as well as other pertinent details about their products only on a third space on their bags.
- For the remaining 2/3 of the area in the middle, it is the "Bharat" brand and Pradhanmantri Bharatiya Jan Urvarak Pariyojana logo must be displayed.
- The brand name that is used for UREA Di-Ammonium Phosphate DAP, Muriate of potash (MOP) and Nitrogen Phosphorus Potassium NPK and so on. could include BHARAT UREA, BHARAT DAP, BHARAT MOP and BHARAT NPK, etc. and for all Fertiliser companies, State Trading Entities (STEs) and Fertiliser Marketing Entities (FMEs).
- The scheme is applicable to both private and public sector firms. It will result in the same fertiliser brands across the nation.

Why?

- The need to be aware about the fiscal burden placed on the government to provide cheaper fertilisers accessible to the farmers.
- Lower the subsidy cost.
- Reduce the diverting of urea for non-agricultural purposes.

Fertiliser sector:

- The price at which consumers can purchase the urea product is set by the government. This pays companies for the increased costs of production or imports they incur.
- The MRPs of fertilizers that do not contain urea are not controlled. However, companies are not eligible for subsidy if they are selling at MRPs greater than those stated by government officials.
- The government also determines the places they are able to sell their products through this order. Fertiliser (Movement) Control Order 1973.
- In this regard the department of fertilisers, it creates a monthly supply schedule for all subsidised fertilisers after collaboration with importers and manufacturers.

- This supply plan is published on the 25th day of every month for the month following the department is also continuously monitoring changes to ensure availability of fertiliser according to the requirements, which includes remote areas.

Topic 170. SWACHH SAGAR, SURAKSHIT SAGAR CAMPAIGN

Important for subject: Government Schemes

Union Minister of Environment, Forest and Climate Change Participates in Swachh Sagar, Surakshit Sagar Campaign at Puducherry

- It is the longest-running clean-up campaign for the coast around the globe, with the most participants and will conclude in "International Coastal Clean-up Day" (17th September 2022).
- Worldwide, "International Coastal Clean up Day" is observed every third Saturday in September each year.
- Its goal is to increase public awareness of the accumulation and negative impact of litter in the oceans as well as on shorelines and beaches.
- A mobile application "Eco Mitram" has been created to raise awareness about the campaign as well as to encourage all people to take part in an open registration to the beach cleanup activity.
- Objectives:
 1. A clean-up campaign is being conducted all along the Indian coastline.
 2. To reduce marine litter.
 3. Reduce your use of plastics.
 4. Promoting the segregation of waste at its source as well as waste management.

Topic 171. ASSOCIATION OF RENEWABLE ENERGY AGENCIES OF STATES (AREAS)

Important for subject: Government Schemes

Association of Renewable Energy Agencies of States (AREAS)'s 8th Foundation Day celebration held today in Kochi.

- Shri Bhagwanth Khuba the Minister of State responsible for New and Renewable Energy inaugurated the event.
- MNRE has taken the initiative in this direction in consultation with SNAs as well as Association of Renewable Energy Agencies of States (abbreviated as "AREAS") was

formed and was registered as a society on the 27th of August, 2014 under the Society Registration Act 1860.

- All State Nodal Agencies for Renewable Energy are members of AREAS.
- Hon'ble Union Minister in-charge of New & Renewable Energy is the Ex-Officio Patron of the Association and Secretary, MNRE is the ex-officio President of the Association.
- Each SNA is a member of the Association. Business of the AREAS will be conducted via the Executive Committee (EC) which is headed by President AREAS.
- AREAS was granted registration on the 25th of July, 2016 as a General Public Utility Trust/Society of the Income Tax act, 1961, which allows for its tax exemption.
- It also received the approval under The Income Tax Act, 1961 on July 25, 2016 to permit a specified tax benefits to donors.
- These benefits/exemptions are effective beginning Annual Year 2016-17 onwards.
- Vice President to be chosen by the members, and Joint Secretary MNRE to serve as the ex-officio members of EC.
- Additionally, the Executive Director and two SNAs in each of the zones (North, South, East, West and North-East, and UTs) are as well members of the Executive Committee.
- Under AREAS the three Standing Committees listed below are created the following Standing Committees: Standing Committee of Technology and Resource Assessment Standing Committee on Policy and Finance Standing Committee on IT & IMS

Topic 172. PRADHAN MANTRI JAN DHAN YOJANA (PMJDY)

Important for subject: Government Scheme

Pradhan Mantri Jan Dhan Yojana (PMJDY) PMJDY - National Mission for Financial Inclusion is now in its eighth year of implementation that has been successful

- Pradhan Mantri Jan Dhan Yojana (PMJDY) is the National Mission for Financial Inclusion to provide access to financial services including Banking/ Savings & Deposit Accounts as well as Credit, Remittance pension, insurance at a reasonable cost.
- PMJDY has been announced by the Prime Minister during the Prime Minister's Independence Day address on 15th August 2014.

- When the program was launched on August 28th,
- Objectives:**
1. Provide access to financial services and products with a reasonable cost.
 2. Use of technology to reduce costs and increase reach.
 3. Basic fundamentals of the scheme those who aren't banked
- Opening of a basic savings deposit (BSBD) account that has no paperwork, a relaxed KYC, the e-KYC process opening the account using camp mode no balance and zero charges. the account from unauthorized
 - Issue of Indigenous Debit cards for cash payment and withdrawals at locations of merchants, with no accident insurance coverage of 2 lakh rupees. 2 lakh. Funding the unfunded
 - Other financial products such as micro-insurance, overdrafts in consumption, micro-pension, and micro-credit. Six pillars of micro-credit Access to all services in banking Basic savings bank accounts with an overdraft facility of 10,000/- to 10,000/- for each adult who is eligible
 - Financial Literacy Programme Development of credit Guarantee Fund Insurance: Accident insurance of up to Rs. 1,00,000 and life insurance of Rs. 30,00 on accounts that were opened from 15 Aug 2014 and 31 January 2015, the pension scheme for the unorganized sector.

Topic 173. TAIWAN DOMINATES THE WORLD'S SUPPLY OF COMPUTER CHIPS - NO WONDER THE US IS WORRIED

Important for subject: International Relations

- One aspect of Nancy Pelosi's visit to Taiwan that's been ignored was her encounter in Taiwan with Mark Lui, chairman of the Taiwan Semiconductor Manufacturing Corporation (TSMC).
- Pelosi's trip was in line with US efforts to persuade TSMC -the world's biggest chip maker, that it is US has a significant dependenceto create an manufacturing facility within the US and stop producing high-tech chip for Chinese companies.
- **What is the reason Taiwan is important for the US?**
- Taiwan's autonomy has been an important issue in the geopolitics of the US due to the island's supremacy in the semiconductor manufacturing industry.
- Super-fast, transformational 5G internet created is creating a new universe that is

connected to devices all type (the "Internet of things") as well as a brand new generation of weapons that are networked.

- US semiconductor design firms like Intel were heavily dependent on Asian supply chains to make of their products.
- Particularly, Taiwan's place in the field of semiconductor manufacturing is similar to Saudi Arabia's standing in OPEC.
- TSMC holds five-year market position of 53% in the global market for foundries (factories contracting to produce chips that are designed in different countries).
- Other Taiwan-based companies claim an additional 10% market share.
- The United States is heavily dependent on a single firm --- TSMC in order to manufacture the most cutting-edge chips.
- It is the fact that just TSMC or Samsung (South Korean) can produce the most modern semiconductors (known as five nanometers) put at risk the capability to meet the future and current [USnational security and crucial infrastructure requirements.
- In 2020 in 2020, the Trump administration imposed a string of harsh sanctions on Chinese technology giant Huawei which were intended to isolate the company from TSMC and TSMC, which was dependent for the production of premium semiconductors required to run its 5G infrastructure.
- It's all part of a wider "tech conflict" in between US and China and China, where the US is seeking to restrict China's technological advancement and stop it from taking on the role of a global tech leader.

Topic 174. INDIA OBSERVES CHABAHAR DAY WITH EMPHASIS ON LINKAGE WITH CENTRAL ASIA

Important for subject: International Relation



The Ministry of Port, Shipping and Waterways (MoPSW) on Sunday observed the 'Chabahar Day' in Mumbai to celebrate the Chabahar Link to the The International North-South Transport Corridor (INSTC)-Connecting Central Asian Markets.

- Chabahar is strategically located in the Makran Coast in Gulf of Oman at the southern end of the Persian Gulf and Iran's closest and easiest gateway to Indian Ocean.
- It's a long way from Iran's main port, Bandar Abbas that currently handles the majority of its transshipments but is limited because of capacity and inability to accommodate large vessels.
- Contrarily, Chabahar is an oceanic port, and is capable of handling larger vessels.
- Utilizing it to its full potential is of Iranian interests as it will cut down on the distance.
- If it is connected to its Iranian rail network, this port can link the port to all of Iran.
- The Chabahar-Zahedan railway line and the development of it has offered the chance for Iran to begin development activities in this region as it has been granted exemptions from the latest round of sanctions by the US.
- sanctions were imposed through Indian tension and pressure to pressure from the USA due to it being the preferred transit point for the import of goods to Afghanistan

to provide humanitarian aid and relief to the Afghan people. Afghanistan.

- The impetus to the development of the port came in May 2016 when India, Iran and Afghanistan signed a key trilateral deal, known as the Chabahar Agreement, to establish a strategic India-Iran-Afghanistan Trilateral Agreement on Transport and Transit Corridors to facilitate trade with Afghanistan, Central Asia, Russia and Europe for utilizing Chabahar port as a hub, giving a boost to Indian access to Afghanistan and creating the International North-South Transport Corridor (INSTC).
- It is INSTC is a crucial trade corridor initiative, in which India is working with 12 other countries to create the economic corridor.
- 7,200-km multi-mode transportation (Rail road, sea Road) project to transport cargo between India, Iran, Afghanistan, Armenia, Azerbaijan, Russia, Central Asia and Europe.
- The aim is to enhance connectivity in trade between major cities, such as Mumbai, Moscow, Tehran, Baku, Bandar Abbas, Astrakhan, Bandar Anzali and many more.
- Dry runs on two routes were run in 2014. The first one was Mumbai through Baku by Bandar Abbas and the second was Mumbai to Astrakhan via Bandar Abbas, Tehran and Bandar Anzali.

Topic 175. KALAPANI, LIMPIYADHURA AND LIPULEKH

Important for subject: International Relations



The former Nepalese pm KP Sharma Oli stated that his removal from office in the year 2000 after his government issued a updated map of Nepal which comprised Kalapani, Limpiyadhura and Lipulekha is territories.

- It is located in the Lipulekh pass is located at a westerly point in Kalapani the border zone in between Nepal in the region of India.
- Both India as well as Nepal Both countries claim Kalapani as an integral part of their territories. Lipulekh is an Himalayan pass.
- The pass is located near the Chinese trading city located in Taklakot (Purang) located in Tibet and was used from ancient times by mendicants, traders and pilgrims who travel across India as well as Tibet.
- This road connects the Byans valley in Uttarakhand, India with the Tibet Autonomous Region of China and is the final territorial line in Indian territory.
- It is the Kailash Mansarovar Yatra, a Hinduism pilgrimage to Mount Kailash and Lake Manasarovar is a route that traverses the pass.
- At present, Lipulekh Pass is open to trade cross-border between June and September.
- It's also known as Lipu-Lekh pass/Qiangla or Tri-Corner is a mountain pass at high altitude located within the Himalayas of western Asia at a an elevation of 5,334 meters or 17,500 feet.
- The pass serves as an International mountain pass that connects India, China and Nepal.
- Nepalese claims Nepalese rights to south of the pass also known as Kalapani territory are based on the 1816 Sagauli Treaty between British East India Company and Nepal.
- The treaty established the boundaries along the Kali River (also called the Sharda River and Mahakali River).
- India states that the river's origin is the Kalapani village, as that is the place where all its tributaries meet.
- However, Nepal claims it is beginning with an elevation of Lipulekh Pass.
- The history of the area reveals that around 1865 in the year 1865, the British moved the border close to Kalapani towards the river's watershed Kalapani river, instead from the actual river, taking over the land now known as Kalapani territory. Kalapani territory.
- This is in accordance with the British belief which states that the Kali River begins

only from the Kalapani springs, which means that the Sugauli agreement was not applicable to the region that was above the springs.

- Kali River It is also called Sharda River or Kali Ganga in Uttarakhand.
- It connects to Ghagra River in Uttar Pradesh, which is an tributary of Ganga.
- Projects for the River: Tanakpur hydro-electric project, Chameliya hydro-electric project Sharda Barrage.

Topic 176. IMF SURVEILLANCE

Important for subject: International Relations

IMF assistance in Sri Lanka and Bangladesh Surveillance is one of the three primary actions that are part of the International Monetary Fund (IMF) along with technical and lending assistance.

- Through its surveillance Through surveillance, the IMF monitors the international financial system and its policies for all its member countries in order to improve global stability in the economy and finance.
- It is done at the national, regional as well as at the global level.
- At the national level At the country level, the IMF provides bilateral supervision through the "Article IV Consultation" which is named after Article IV of the IMF's Articles of Agreement.
- The consultations are a regular IMF staff trip to every member country in which they talk about with government officials as well as other parties, the country's overall economic health as well as its policies on fiscal and monetary policy, and any economic risks that they perceive.
- The IMF creates the staff report, which includes an evaluation and suggestions, the opinions from members of the IMF Executive Board as well as an overview press release, and sometimes an executive Director who represents the country.
- Together, they form together the Article IV report. The policy advice contained provided in Article IV reports is not legally binding, however it is required for all of the 189 IMF members to undergo bilateral surveillance.
- Article IV Scanner the Article IV Scanner was created to allow researchers, civil society organizations as well as officials to find important words and phrases within more than 2 000 IMF Article IV reports since 2000, all in one location.

- This allows IMF's bilateral oversight that is more open, transparent and accessible to civil society participation.

Topic 177. CHINA TAIWAN ISSUE: ONE CHINA POLICY

Important for subject: International Relations



House Speaker Nancy Pelosi arrived in Taiwan and brushed aside advice from the Biden administration over the possibility that her high-profile visit could spark a new conflict in Asia and prompting a swift action from Chinese government.

What is the China policy?

- The One China policy is a important pillar of Sino-US relations.
- It's a diplomatic acknowledgment of China's belief in that only there's one Chinese government.
- In accordance with the policy that was adopted, the US recognizes and has formal relations with China as opposed to an island called Taiwan that China considers a separate province.
- China insists that Taiwan as an integral part of China.
- Thus, any nation which wants friendship with mainland China must end official relationships with Taipei.
- Since the US established diplomatic ties in 1979 with Beijing around 1979. the US was required to break the ties with Taiwan and close its Taipei Embassy.
- The result is Taiwan's diplomatic isolation from international community.

- China and Taiwan dispute (Background): China and Taiwan were divided during the conflict in 1949. China believes Taiwan as part of its territory and can be controlled with force if needed.
- However, Taiwan's leadership says the Taiwan can be considered a sovereign country.
- After decades of wary intentions and a savage rhetoric, relationships among China and Taiwan began to improve in the early 1980s.
- China proposed a formula called "one country two systems" that states that Taiwan could be granted substantial autonomy if it accepts Chinese unification.
- In Taiwan the proposal was turned down, but the Chinese government did relax the restrictions on visits to and investments in China.
- There were also limited talks between the two sides' unofficial representatives, though Beijing's insistence that Taiwan's Republic of China (ROC) government is illegitimate prevented government-to-government contact.
- The Chinese government's decision to implement an act of national security within Hong Kong in 2020 was widely viewed as another indicator the fact that Beijing was becoming increasingly aggressive in the region.
- China's concerns one China Policy Rejected: This means that countries who seek diplomatic relations with People's Republic of China (PRC, Mainland China) must end official relations with the Republic of China (ROC, Taiwan) and reverse.
- Taiwan, the ROC, Taiwan has diplomatic relations with 15 nations and substantial ties with many more including Australia, Canada, EU nations, Japan and New Zealand.
- Additionally, Taiwan has full membership of 38 intergovernmental organizations as well as their affiliated bodies, such as those of the World Trade Organization, Asia-Pacific Economic Cooperation, Asian Development Bank and Central American Bank for Economic Integration.
- Exercises and Agreements to Counter China The formation of AUKUS (Australia, UK, USA) to fight China.
- Malabar Exercise (US, Japan, India and Australia) is a significant step in the direction of an Indo-Pacific that is sustainable.
- Strategic and Defense Support to Taiwan from the US: Taiwan has sought to strengthen its defenses through purchasing US weapons, such as upgraded F-16 fighter drones, jets with armed weapons, rocket systems, as well as Harpoon missiles.

- India's position on the issue In 1949 India is a signatory to its "One China" policy that recognizes Taiwan as well as Tibet as being part of China.
- Although India has not mentioned its commitment to the One China policy in joint statements and official documents as of 2010 its interaction with Taiwan remains limited because of the structure of relations with China. India Taiwan and India Taiwan don't have official diplomatic relations, however in the past, both countries have established representatives in their respective capital cities that serve as embassies in fact.

Topic 178. THE GULF COOPERATION COUNCIL (GCC), EURASIAN ECONOMIC UNION (EAEU) AND EUROPEAN FREE TRADE ASSOCIATION (EFTA) WANT TO NEGOTIATE TRADE PACT

Important for subject: International relations

GCC GCC Gulf Cooperation Council (GCC) is a economic and political alliance made up of six nations in the Arabian Peninsula: Bahrain, Kuwait, Oman, Qatar, Saudi Arabia and the United Arab Emirates.

- The GCC was established in 1981 in 1981, the GCC encourages security, economic and cultural co-operation between the six countries and annually holds a summit to discuss regional and cooperation issues.
- Eurasian Economic Union (EAEU) The Eurasian Economic Union is an international organisation for regional economic integration.
- It is a legal entity with international recognition and was established under the Treaty on the Eurasian Economic Union.
- The EAEU allows for the an open transportation of services, goods, capital , and labor. is committed to a coordinated, uniform and a single policy in the areas governed in the Treaty and international agreements within the Union.
- The Member-States of the Eurasian Economic Union are the Republic of Armenia, the Republic of Belarus, the Republic of Kazakhstan, the Kyrgyz Republic and the Russian Federation.
- The Union is being established to upgrade and improve the efficiency of and collaboration between national economies as well as to encourage stable growth in order to improve the standard of living for the people of those Member States.
- European Free Trade Association (EFTA) The European Free Trade Association

(EFTA) is the intergovernmental association comprising Iceland, Liechtenstein, Norway and Switzerland.

- It was founded in 1960 by the at the time seven Member States for the promotion of economic integration and free trade among its members.

Topic 179. RUSSIA SUSPENDS START INSPECTIONS OF ARMS IN PROTEST OF US TRAVEL RESTRICTIONS.

Important for subject: International Relations

START TREATY, an international body this is a deal with the United States of America and the Russian Federation on measures for the further reduction and restriction of the use of strategic offensive weapons.

- The treaty came into force on February 5th 2011.
- New START has replaced the 1991 START I treaty that expires in December 2009, and has superseded that of 2002.
- Strategic Offensive Reductions Treaty (SORT) that came to an end when New START entered into force.
- It's a follow-up to the START framework that was signed in 1991 (at the close of Cold War) that limited each side in the range of 1,600 delivery systems for strategic purposes as well as the 6,000 warheads.
- It will continue the bipartisan effort to reduce the USA and Russian nuclear arsenals with strategic significance by restricting each side by 700 launchers for strategic purposes as well as 1 550 warheads that are operational.
- The agreement will expire in February 2021 unless it is extended for five years.

Topic 180. PIRACY ISSUES

Important for subject: International Relations

The oceans that lie off the oil-rich coast of West Africa are currently the most risky worldwide for shipping as per to an updated report.

- One Earth Future, which publishes annually a State of Maritime Piracy, states that although attacks have decreased significantly in certain regions around the globe but for West Africa they've been on the rise and are more frequent than elsewhere.
- In 2018 there were 112 similar incidents reported in West African waters.

- This isn't just the large tankers that export gas and oil out of Nigeria and Ghana which are targeted.
- At a recent gathering in London the president of Ghana, Faure Gnassingbe from Togo which is a country that lies between the two giants of the region expressed his concerns about the increase in attacks on shipping vessels in the region.
- The coast off Nigeria witnessed the highest number of attacks in the year 2018.
- This is due in part to "petro-piracy", targeting tankers from Nigeria's gas and oil fields.
- In the past, Horn of Africa used to have a huge piracy issue however, it's been less.
- It's now much less a problem.
- Horn of Africa denotes the region that includes the countries that include Djibouti, Eritrea, Ethiopia and Somalia.
- Ships are targeted across the Caribbean and along the coast in Latin American have, however been increasing.
- Venezuela is in particular is now a hotspot of pirates.

Topic 181. TREATY ON GLOBAL PANDEMIC

Important for subject: International Relations

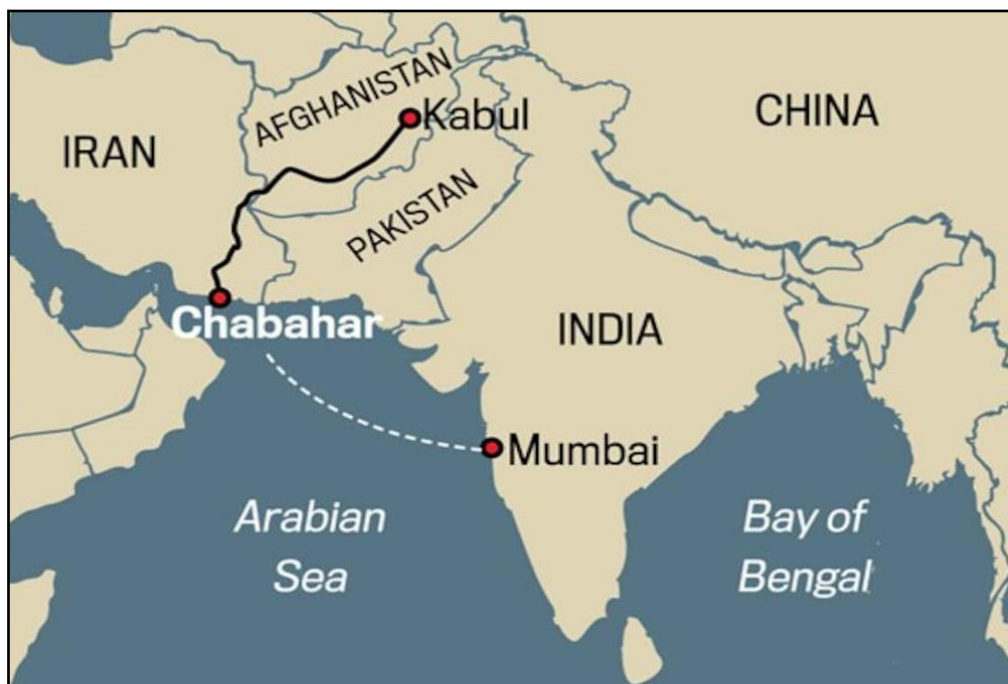
A draft of an international pandemic treaty that governs preparation, prevention and response to future pandemics is expected to be in negotiation within 18 months, according to Soumya Swaminathan Chief Scientist for the World Health Organization (WHO).

- The origins of the treaty was triggered by the second session of World Health Assembly (WHA) that was held in the month of December 2021 that officially began the process of developing of the previous global agreement.
- It will aid in addressing the global health issues that are prominent by the ongoing COVID-19 epidemic.
- These include fair distribution of health services between and within countries as well as sharing of knowledge and data as well as ensuring the responsibility of the various economies on a basis of capability.
- WHA has established the International Negotiating Body (INB) to develop a WHO convention, agreement, or other international instrument' to allow the entire world to

unisonly to respond to as well as recover from health crises in the coming years.

Topic 182. INDIA AND IRAN SIGN AN MOU TO ENSURE THE SMOOTH FLOW OF SEAFARERS BETWEEN THE TWO COUNTRIES

Important for subject: International relations



In order to ease the flow of seafarers between these two nations, India and Iran on Monday signed a Memorandum of Understanding (MoU) regarding the recognition of certificates of Competency in Unlimited Voyages in order to aid seafarers from both nations in accordance with the provisions of the International Convention on Standards of Training, Certification and Watch-Keeping for Seafarers (1978).

- International Convention on Standardization for Education, Training and Certification as well as Watch Keeping for Seafarers (1978)
- It defines requirements for masters, officers, and watchmen on sea-going commercial vessels.
- STCW was adopted in 1978 at a gathering of the International Maritime Organization (IMO) in London and was put into effect in the year 1984.
- The Convention of 1978 STCW Convention was the first to establish the basic requirements for training and certification, as well as watch keeping for seafarers on a global scale.

- The Convention establishes minimum standards related to certification, training and watch keeping for seafarers, which all nations are required to meet or surpass.
- The most important aspect in this Convention is the fact that it is applicable to ships from non-party States while visiting ports belonging to States that are parties to the Convention.
- The Manila modifications for the STCW Convention and Code were approved on June 25, 2010 which marked a major update of STCW Convention and Code.

Topic 183. IRAN HAS DROPPED SOME DEMANDS FOR NUCLEAR DEAL -U.S. OFFICIAL

Important for subject: International relations

News from around the world Iran has withdrawn some of its principal demands regarding reviving a agreement to limit Tehran's nuclear programme, including the demand that international inspectors end certain investigation into the nuclear program, which could bring the possibility of a deal closer an official from the U.S. official told Reuters on Monday.

- Iran Nuclear Deal The deal was referred to by the name of Joint Comprehensive Plan of Action (JCPOA) and is referred to in general usage, it is referred to it is known as Iran Nuclear Deal.
- The year 2015 saw Iran along with P5+1, the grouping of global powers including which includes the USA, UK, France, China, Russia, and Germany reached an agreement for the long-term future of the nuclear program of Iran.
- The deal was known in the form of Joint Comprehensive Plan of Action (JCPOA) and is referred to in general usage, it is referred to it was referred to as Iran Nuclear Deal.
- As part of the agreement, Iran agreed to curb its nuclear program in exchange for removal of sanctions and access to trade in the world.
- The agreement permitted Iran to collect small quantities of uranium to conduct research, but it prohibited the enrichment process of uranium that is used to create nuclear weapons and reactor fuel.
- Iran had to design the heavy-water reactor that was being constructed and whose fuel that was used could be contaminated with plutonium that is suitable for use in a bomb, and also to let international inspectors.
- In May of 2018 in May 2018, the USA rejected the agreement, describing it for being

flawed, but reaffirmed and strengthened its sanctions.

- Since the sanctions were increased, Iran has been steadily breaching its obligations to press its remaining signatories to alleviate sanctions.

Topic 184. FOR FIRST TIME- INDIA VOTES AGAINST RUSSIA IN UNSC DURING PROCEDURAL VOTE ON UKRAINE

Important for subject: International relations

India has for the first time, on Wednesday, the first time on Wednesday voted against Russia during a vote procedural in the United Nations Security Council on Ukraine in which the 15-member, powerful UN body called for Ukrainian Ukraine's President Volodymyr Zelenskyy, to address an audience via video conference.

- India is currently an unpermanent member of the UNSC for a two-year period which expires in December.
- When the meeting began as the meeting began, as the meeting began, Russian Ambassador at United Nations Vassily A. United Nations Vassily A.
- Nebenzia demanded a vote on a procedure regarding the Ukrainian president's participation in the meeting via videoconference.
- Following statements made by Zelensky and Ferit Hoxha, a native of Albania In response to statements made by them and Ferit Hoxha from Albania, the Council issued an invitation to Zelensky to join the meeting through video conference through a vote of 13 votes in favor and one against.
- Russia rejected the invitation in opposition, and China abstained.
- Zelensky claimed that Russia has put the world at risk of nuclear catastrophe , by changing Zaporizhzhia, the Zaporizhzhia reactor into an area of war.
- The reactors are spread across six sites, just one of which has exploded during the blast at Chernobyl along with Chernobyl. The International Atomic Energy Agency (IAEA) has to take full over the crisis as quickly as it is possible, he added.
- Zaporizhzhia , UNSC and IAEA already have been covered

Topic 185. CHINA PLEDGES SUPPORT TO SRI LANKA AT UNHRC SESSION***Important for subject: International relations***

Just weeks ahead of an UN Human Rights Council session in Geneva in which the resolution regarding Sri Lanka is expected to be presented, China has said it will "continue to support" Sri Lanka in international forums and slams nations "far or near" for "bullying" the island nation.

- The Ambassador Zhenhong Qi also praised his appreciation for the "successful" docking of Chinese military vessel Yuan Wang 5 at Sri Lanka's southern Hambantota Harbour following the fact that China along with Sri Lanka "altogether resisted the rude and unreasonable interference from third parties".

UN Human Rights Council

- The Human Rights Council is an inter-governmental institution within the United Nations system responsible for the advancement and protection of human rights throughout the globe.
- Creation The Council was established in 2006 by The United Nations General Assembly in the year 2006.
- It was a replacement for the previous United Nations Commission on Human Rights.
- The Office of the High Commissioner for Human Rights (OHCHR) is the Secretariat of the Human Rights Council.
- OHCHR has its headquarters located in Geneva, Switzerland.
- Members of the UN: It is comprised by members from 47 United Nations Member States which are elected by the UN General Assembly (UNGA).
- The UNGA will take into consideration the candidates States contributions to the protection and promotion of human rights in addition to their commitments and pledges in this respect.
- The Council's membership is based on an equitable geographical distribution.
- Seats are distributed in the following order: African States: 13 seats Asia-Pacific States 13 seats Latin American and Caribbean States eight seats Western European and other States Seven seven seats Eastern European States: 6 seats The members of the Council serve for a time of three years. They cannot be qualified for immediate re-election after having served two consecutive term.

Procedures and Mechanisms:

- Universal Periodic Review: UPR serves to examine the human rights situation across every United Nations Member States.
- Advisory Committee: It functions in the capacity of the Council's "think tank" providing it with expert advice and guidance on the most relevant human rights issues.
- A Complaint Procedure permits people and organisations to bring human rights abuses into the notice of Council.
- UN Special Procedures of the United Nations: They comprise by special reporters, representatives, independent experts, and working groups that study, monitor, offer advice and publish reports on specific human rights issues or situations in particular countries.
- India as well as UNHCR In 2020 India's National Human Rights Commission submitted its mid-term report for the Council as part of the third phase of the Universal Periodic Review (UPR) process.
- India is a member of the Council for a term of three years, beginning January 2019.

Topic 186. US URGES INDIA TO JOIN COALITION SEEKING PRICE CAP ON RUSSIA OIL

Important for subject: International relations

US deputy Treasury Secretary Wally Adeyemo on Friday said Washington is looking for India in the alliance trying to put a price cap for Russian oil.

- The restrictions are aimed at increasing revenue streams to Moscow and easing global energy costs.
- To limit the revenue that Russia earns from the sale of oil used to finance its six-month-old war against Ukraine, the Group of Seven (G7) largest economies, which includes the US is aiming to establish a mechanism for price capping Russian exports of oil in December, the month at the time that European Union sanctions banning seaborne imports of Russian crude enter into force. Group of Seven (G7)
- This is an inter-governmental organization which was established in the year 1975.
- The group meets every year to discuss matters of common interest such as global economic governance as well as international security, energy and policy.
- The G7 countries are: UK, Canada, France, Germany, Italy, Japan and the US.

- All G7 countries as well as India are members of the G20.
- The G7 has no official charter or secretariat.
- Presidency, that rotates between the members each year, is responsible for setting the agenda.
- Sherpas Ministers, envoys, and ministers discuss policy proposals prior to the summit.
- By 2022 G7 members comprise 10 percent of all the people in this world. 31% of the world's GDP as well as 21% of the world's carbon dioxide emission, as per the Summit website.
- China and India both of the largest countries, with the top GDP figures around the globe aren't part of the grouping.
- Oil Reserves by Country:
 - Venezuela
 - Saudi Arabia
 - Canada
 - Iran
 - Iraq
 - Kuwait
 - United Arab Emirates
 - Russia
 - Libya
 - Nigeria
- Oil Production by Country:
 - United States
 - Saudi Arabia
 - Russia
 - China
 - Canada
 - Iraq
 - Iran
 - United Arab
 - Brazil
 - Kuwait

Topic 187. THE EVERGREEN REVOLUTION: MAKING HUNGER HISTORY***Important for subject: Agriculture***

The green revolution of the 1970s and 1960s were founded on the spread of genetically modified varieties of rice, wheat, maize, and other crops which were distinguished by their capacity to use sunlight, water as well as plant nutrients effectively, and transform them into grains.

- Based on the most recent estimates the farming industry is no longer lucrative and more than 40 percent of farmers would leave if they had an alternative
- The need to prepare for Evergreen Revolution: Evergreen revolution refers to the improvement of productivity throughout the years without environmental and social harm.
- The evergreen revolution is the integration of ecological principles into the development of technology and its diffusion.
- Dr. M. S. Swaminathan coined "The Evergreen Revolution" to emphasize the path that will increase productivity and production so that the short- and long-term objectives of food production aren't incompatible.
- The concept is to make more with more land and pesticides, which means less water, and it should be an evergreen process to achieve sustainable agriculture.
- Traditional crops such as jowar, bajra and pulses as well as fodder must get a boost and be promoted as part of the Prime Minister's program to replace seeds.
- Millets are often referred to as Super food and their production can be considered as a strategy to sustainably farming and a healthy planet.
- **Millets in India:**
 - The three main millet crops that are currently being growing in India are the jowar (sorghum) as well as bajra (pearl millet) and Ragi (finger millet).
 - Additionally, India grows a rich variety of bio-genetically diverse native varieties of "small millets" like kodo Kutki, kutki and Sanwa.
 - Major producers include Rajasthan, Andhra Pradesh, Telangana, Karnataka, Tamil Nadu, Maharashtra, Gujarat and Haryana.
 - Need for Reviving Millet Cultivation:
- **Health and Nutritional Safety:** Millets are not as cost-effective and nutritionally superior than rice and wheat due to their high levels of protein fiber, vitamins, and

fibre minerals, such as iron.

- Millets are also high in magnesium and calcium.
- For instance, Ragi is known to contain the highest amount of calcium of all food grains.
- The high iron content in the diet helps fight the levels of anaemia among Indian women who are reproductive and infants.
- **Climate resilient:** These are also more robust and drought-resistant, which is due to their short growing seasons (70-100 days, compared with 120-150 days in the case of wheat/paddy) and a lower requirement for water (350-500 mm, versus 600-1,200 mm).
- **Economic Security:** Because a low investment is required for the production of millets, they could be an enduring source of income for farmers.
- They can tackle health issues.
- Millets are a great way to combat health issues and lifestyle issues like diabetes and obesity because they're gluten-free, and contain a low glycemic index (a ratio of the amount of the carbohydrates in food by their effect on your blood glucose level).
- Millets are high in antioxidants.
- The Union Agriculture Ministry, in April of 2018, declared millets "Nutri-Cereals", considering their "high nutritive value" and additionally "anti-diabetic properties".
- The year 2018 was also declared as the "National Year of the Millets".
- The government has increased the minimum support price (MSP) in Millets to provide an enormous price incentive for farmers.
- It was the United Nation General Assembly adopted an Indian-sponsored resolution to commemorate 2023 as International Year of Millets.

Topic 188. MILLETS

Important for subject: Agriculture

Union Finance and Agriculture Ministers as well as Karnataka CM address the Millets Conclave at Raichur

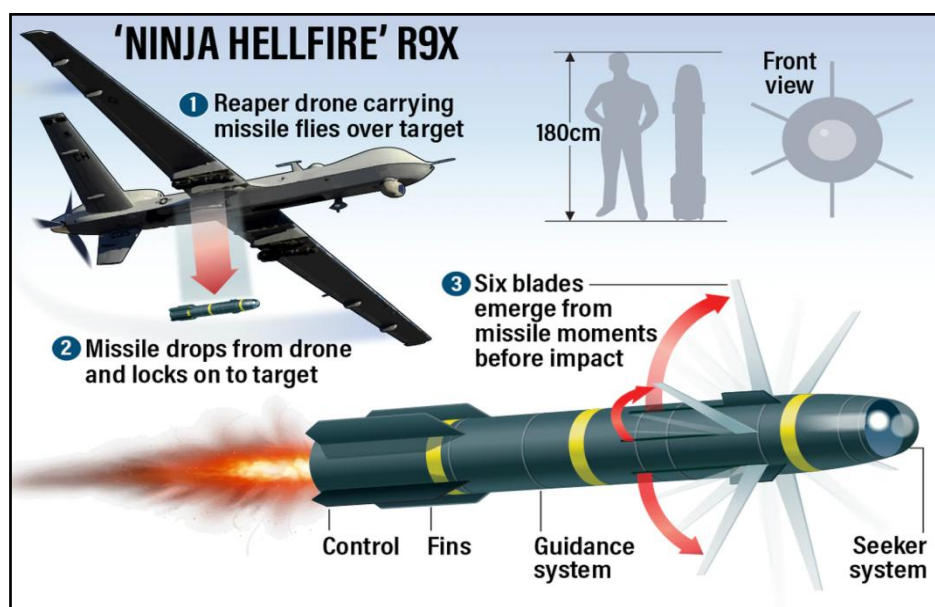
- Millets are frequently called Superfood and their production can be viewed as an option to sustainable agriculture and a healthy planet.
- They are vital climate resilient food staples grown in dryland agriculture, which

occupies 68 percent of the land that is under cultivation and provided 44 percent of the world's food needs.

- The cultivation of millets requires less water than sugarcane, rice and wheat, and can be suitable for small-scale farmers.
- India is the world's largest consumer, accounting 38 percent of the world's demand.
- The three millet majors that are being produced in India are Jowar (sorghum) and bajra (pearl millet) and the ragi (finger millet).
- In addition, India grows a rich assortment of bio-genetically diverse native varieties of "small millets" like kodo and kutki. Other major producers are Rajasthan, Andhra Pradesh, Telangana, Karnataka, Tamil Nadu, Maharashtra, Gujarat and Haryana.
- Government initiatives to encourage consumption of Millets
- The government has included cereals into the (Targeted) Public Distribution System under the sub-mission "Nutri-cereals" in millets. They are also included by the Price Support Scheme and the MSP of pearls and small millets are between Rs2,000 to Rs3,150 per quintal.
- The Union Agriculture Ministry, in April 2018, classified millets "Nutri-Cereals", considering their "high nutritive value" and as "anti-diabetic properties".
- The year 2018 was also observed as the 'National year of millets'

Topic 189. HELLFIRE R9X MISSILE: THE DRONE MISSILE WITH RAZOR-SHARP BLADES USED TO KILL AYMAN AL-ZAWAHIRI

Important for subject: Defence



The US military used their 'secret weapon' - its Hellfire R9X rocket in order to eliminate Al Qaeda head Ayman al-Zawahiri from the balcony of the safehouse in Kabul on July 31.

- **What exactly is the Hellfire R9X missile?**
- It is more popular in the military community by the name of the AGM-114 R9X the Hellfire R9X is an US origin missile which is believed to cause minimal collateral damage when it engages particular targets.
- Also known as the "Ninja Missile" The weapon is not equipped with an actual warhead, but instead uses sharp blades with razor-sharp edges at the final point of its attack.
- It is able to penetrate even the most massive steel sheets and cut through the target using the energy generated by its propulsion. It does not cause harm to anyone who are in the immediate vicinity, or the structure of the building.
- The blades break free of the missile, cutting down the intended target but without damaging the surrounding area, as is the case for a missile with the explosive warhead.
- **What year did Hellfire missile begin into active service?**
- This Hellfire missile is believed to be active since.
- But, its existence became known to the public after two years in the year 2019.
- It is a variation of the Hellfire missile family, which is utilized in its standard form with warheads.
- It is typically used by the ground, helicopters as well as small vessels as well as fast-moving vessels.
- Since a few years for a few years, for a long time, the Hellfire group of missiles which includes "Ninja Missile" are equipped by Combat Unmanned Aerial Vehicles or drones which are used by the US Military uses in offensive military operations all over the world.
- **Where is the Hellfire missile served in the past?**
- In 2017 the "Ninja Missile" was believed to have killed the former No. No. 2 figurehead of Al Qaeda, Abu Khayr Al Masri in Syria.
- It was also employed against other targets in Syria in the exact same time.
- The extent of damage to vehicles carrying the targets, especially the damaged roofs of vehicles, provided the first indications that a warhead of normal design was not

employed for the missile, and that it was equipped with sharp blades.

- It was also employed in the past against Taliban target groups in Afghanistan in the year 2020, and then again in 2022.
- **What do we know about the other Hellfire missiles?**
- Hellfire is actually an abbreviation that stands for Heliborne, Laser, Fire and Forget Missile and was created by the US initially to attack tanks that were part of Apache AH-64 attack helicopters.
- Later, the use of these missiles grew to other types of helicopters, as well as system that was based on the sea or ground, as well as drones.
- Created in collaboration with Lockheed Martin and Northrop Grumman and Northrop Grumman, the Hellfire missile is available in other variants like 'Longbow' or Romeo in addition to the "Ninja".

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