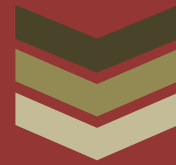


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Topic 1. DIFFICULT TO IMPLEMENT; WHAT IS THE IDEA OF CLIMATE REPARATION?

Important for subject: Environment

Facing the worst flooding disaster in its history, Pakistan has begun strict reparations, or compensation, from the developed countries that are principally accountable for inflicting global climate change.

What is “Polluter Pays” principle?

- “Polluter Pays” principle that produces the defiler accountable for paying not only for the value of remedial action, however also for compensating the victims of environmental damage caused by their actions.

What is Common but Differentiated Responsibilities?

- It is a principle that was formalized in the United Nations Framework Convention on Climate Change (UNFCCC) of Earth Summit in Rio de Janeiro, 1992.
- CBDR could be a principle that acknowledges different capabilities and differing responsibilities of individual countries in addressing global climate change.
- CBDR relies on 2 parts of responsibilities- one is that the common responsibility of all the states to cater to the considerations of environmental protection and property development and therefore the alternative is of differentiated responsibility sanctioning the states to act, for setting protection, in their national capability and as per their national priority.

What are climate reparations?

- Climate reparations ask a require cash to be paid by the world North to the world South as a way of addressing the historical contributions that the Global North has made (and continues to make) toward climate change.

What is Climate justice?

- Climate justice could be a idea that addresses the just division, truthful sharing, and equitable distribution of the advantages and burdens of global climate change and responsibilities to affect climate change.
- United Nations Office for the Coordination of Humanitarian Affairs (OCHA) OCHA is a United Nations (U.N.) body
- it was established in 1991 to strengthen the international response to complicated

emergencies and natural disasters

- It is the successor to the Office of the United Nations Disaster Relief Coordinator (UNDRO) OCHA's mandate was subsequently broadened to include coordinating humanitarian response, policy development and humanitarian advocacy OCHA organized the 2016 World Humanitarian Summit in Istanbul, Turkey.
- it's a sitting observer within the UN Development cluster.
- The headquarters relies in 2 locations (New York and Geneva)

Topic 2. ENVIRONMENT TAKES BACK SEAT: MOEFCC EXTENDS SOX COMPLIANCE DEADLINE AGAIN

Important for subject: Environment

Air Pollution Union Ministry of Environment, Forest and Climate Change (MoEf&CC) 5 September 2022, once more granted time to thermal power plants to meet the sulfur dioxide (SO_x) standards.

- Thermal power plants located at intervals of 10 km within the Delhi-National Capital Region, or cities with a population of more than a million were said to be in compliance with SO_x requirements by end of the year.
- In the event of plants that are retiring the requirement to PM as well as Roman gods is the same.
- The requirement for meeting the SO_x norms for plants that are retiring was extended to 2027 with the latest notice.
- Central Electricity Authority (CEA) which is the authority that acts as a regulator and observer for the implementation of emission norms, only communicates on SO_x standards.
- There is no information available in the property as of conformity with PM and No_x standards.
- Flue Gas Desulphurisation (FED) removal from Sulfur Dioxide is called as Flue-gas Desulphurization (FGD).
- It aims to eliminate gaseous pollutants, viz. SO from exhaust gasses that are generated by boilers, furnaces as well as other industrial processes that result from thermal treatment, processing and combustion.
- FGD systems can include dry or wet scrubs. When the wet FGD techniques, flue

gasses are in proximity to an absorbent that could be a solid or liquid made of solid materials.

- It dissolves or interacts with the absorbent, and is subsequently absorbed by it.
- For dry FGD systems the absorbent is limestone or a dry pulverized limestone after absorption has occurred and solid particles are removed through baghouse filters.
- Sulfur Dioxide Pollution In a report from Greenpeace (an environmentally-friendly Non-Governmental Organization), India is the biggest emission source for Sulphur Dioxide (SO₂) in the world. The main reason for India's large emission output is the growth of the generation of electricity from coal in the last decade.

Source:

- The biggest source of SO emissions in the atmosphere is the combustion of fossil fuels at power plants as well as other industrial facilities.
- Lesser sources for SO emissions include industrial processes, such as the extraction of metal from ore, natural sources like volcanoes; and locomotives vessels and other vehicles, as well as heavy equipment that burns fuels with a high sulfur content.

The impact:

- SO can affect both health as well as the environment.
- Exposures of short duration to SO could harm the respiratory system of a person and cause breathing difficulties. Asthma sufferers, especially children, are more sensitive to the negative side effects of SO.
- SO emissions that lead to large concentrations of SO in the air. It can may also trigger the creation of sulfur oxides (SO_x).
- SO_x reacts with other compounds present in the atmosphere to create small particles.
- These particles are responsible for PM pollution. (PM) contamination.
- Small particles could penetrate deeply into the lungs. In enough quantities, they can cause health issues.
- Central Electricity Authority the Central Electricity Authority (CEA) is an official organization that was established pursuant to section 3. (1) of the repealed Electricity (Supply) Act, 1948, and continued by section 70 under the Electricity Act, 2003.
- It was created as a part-time body in the year 1951 before being transformed into full-

time in the year 1975.

- In accordance with section 70 (3) of the Electricity Act, 2003, the authority will comprise no over 14 persons including the chairperson, of who not more than 8 will be full time members selected by the Central Government.
- The CEA is led by a chairperson, who, as the chief executive for the agency, is responsible for mostly the growth of the energy sector within the country.
- It provides advice to the government on things related with the National Electricity Policy (NEP) and develops short-term and long-term plans for the expansion of electric power systems.
- It is the authority that is designated to regulate cross-border trade in electricity.
- It also sets guidelines for the building electrical power plants as well as electric lines and connections to grids as well as grid safety standards, as well as the installing and operating meters.
- It also is accountable for the coordination of plans for hydropower development in the central government, private and state sectors to ensure the efficient development of the rivers and their tributaries to ensure power generation.

Topic 3. LIGHT POLLUTION

Important for subject: Environment

Ladakh to be the first in India to get a Dark Sky Reserve to encourage the tourism of astronomy

What is a Dark Sky Reserve?

- An Dark Sky Reserve is public or private property with distinct nocturnal landscape and starry night sky that has been carefully planned to reduce light pollution.
- In accordance with the International Dark Sky Association (IDSA) website These Reserves "consist of a core area meeting minimum criteria for sky quality and natural darkness, and a peripheral area that supports dark sky preservation in the core."

What is the process for a place to become a Dark Sky Reserve what is a Dark Sky Reserve?

- The public or the groups may suggest a location for certification for the International Dark Sky Association (IDSA).

- There are five distinct categories which include International Dark Sky parks, reserves, communities, sanctuaries, as well as Urban Night Sky Places.
- The process of certifying is similar to getting a place an UNESCO World Heritage Site tag or being designated an Biosphere Reserve.
- Between January 2001 until Jan. 2022.
- were the 195 sites that have been designated International Dark Sky Places globally.

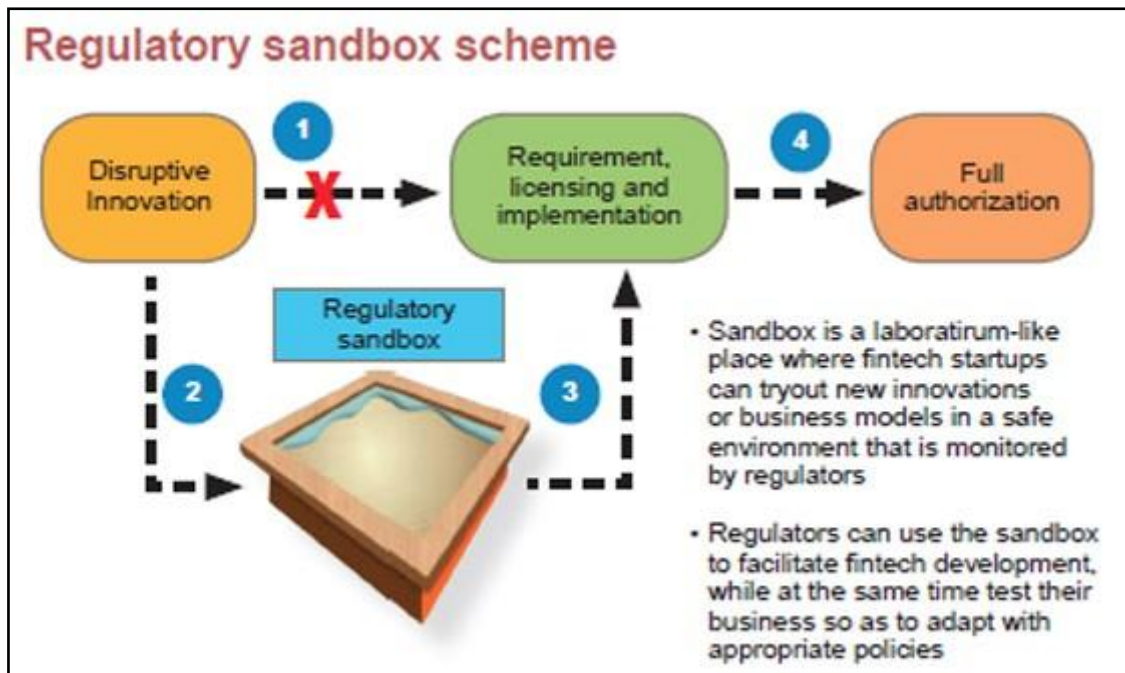
What was the reason Ladakh chosen as the location for the project?

- Ladakh is a special cold desert situated at about 3000m above sea level and surrounded by mountains that rise to the sky.
- Extremely harsh winters and temperatures that can drop as low as 40 degrees Celcius makes large areas of UT extremely habitable.
- The aridity, the limited vegetation, high altitude and vast areas of sparse population - all create an ideal setting for long-term astronomical observatories as well as dark sky sites.
- However, the main goal for the planned Dark Sky Reserve will be to encourage the tourism of astronomy in a sustainable , eco-friendly way.
- The use of scientific methods is expected to safeguard our night skies from growing light pollution.
- With cities, metros and the surrounding areas suffering from light pollution and being constantly illuminated and crowded, the area which offer clear skies in night when there is no cloud, as experts have observed.
- The light pollution issue is a dreadful result of outdoor lighting. It typically occurs because of excessive artificial light that is not properly utilised.
- Five components are interspersed of light pollution urban sky glow, light trespass, glare up light, and the clutter.
- Urban sky glow refers the brightness in the sky at night above urban areas.
- The loss of light in an area in which it is not required or desired is referred to as light trespass.
- Glare refers to the over-brightness of light that causes blindness and discomfort.
- A light source is directed towards the sky, which causes the most intense localized form that emits light.

- Clutter refers to an excess number of lights seen in areas with a lot of light.
- Poorly placed signage and streetlights, the excessive and improper use of light and traffic lights, high density of people and the higher density of roads and traffic density are major contributors in light pollution.
- Sometimes, specific circumstances like fog, smog and the high concentration of suspended particles can also intensify in the amount of light pollution.
- The impact caused by light pollution animals, plants and humans. The plants are impacted by three aspects of light: quantity, quality and time.
- Quantity of light is the term used to describe the total amount or the intensity of light.
- The quality of light indicates the wavelength of light, and the duration refers to the entire time that light is visible.
- The effects of light pollution on plants are influenced because it interferes with the photo-periodic.
- Many species of plants (such as night-blooming cacti like The Queen of Night epiphyllum Oxypetalum) blossom only in the evening and rely on nocturnal pollinators to pollinate.
- A higher level of lighting can hinder the pollination and flowering of such plants, and can also hinder reproduction.
- Similar to animals, animals can also be in the same way. Light pollution affects animals.
- Crepuscular (active only between dusk and dawn) and night-time (active only at night) animals rely on the day's (light) duration to begin or stop their daily activities.
- Light pollution, via the superchiasmatic nucleus, disturbs the circadian rhythm, by decreasing the release of melatonin which is a hormone that induces sleep.
- Artificial light at night is among of the major causes of the global decline in insects.

Topic 4. REGULATORY SANDBOX SCHEME

Important for subject: Environment



HDFC Bank and Precision Biometric India have been chosen from the Reserve Bank for testing their "on tap" retail payments applications in the sandbox scheme of regulation.

- The RBI announced the launch of the "On Tap" application process with the theme of "Retail Payments within the regulatory sandbox last year.
- The Offline Retail Payments product ('Offline Retail Payments') is offered by HDFC Bank (in partnership with Crunch fish AB) provides customers and merchants to make and receive online payments. Biometric India has launched with the 'InnaIT Key Solution to Banking'.
- It provides a way to allow biometric tokens that can be used to secure password-less security and Other Factor Authentication (AFA) in place of an OTP for accessing the internet or mobile banking
- The term "Regulatory Sandbox" (RS) is a term used to describe live testing of products or services within an environment controlled for testing or control in which regulators can grant certain exceptions to serve the purposes of the testing.
- The regulatory sandbox permits the regulator and innovators, financial services providers , and their customers to conduct tests in the field to gather evidence about the advantages and dangers of the new systems and products.

- RBI has come up with the idea of a Regulatory Sandbox in order to meet the intention to promote responsible innovation in the financial sector that improve efficiency, and also bring the benefit of customers.
- First Cohort: The first cohort of the Regulatory Sandbox was launched by RBI in December of 2020 with the subject matter being "Retail Payments".
- Six entities have successfully completed the test phase of the group.
- Second Cohort: Second Cohort in the Regulatory Sandbox was announced by RBI in December of this year with the topic "Cross Border payments".
- Eight companies have been chosen to participate in the "Test Phase".
- Third Cohort Third Cohort in the Regulatory Sandbox was announced by RBI under the Regulatory Sandbox (RS) as the theme was 'MSME Lending.
- Fourth Cohort Fourth Cohort Reserve Bank of India (RBI) declared prevention and reduction of fraudulent financial transactions' its fourth cohort in the regulatory Sandbox structure.
- The primary focus will be making use of technology to decrease the time between the beginning and detection of frauds. improving the structure of fraud governance and reducing the time to respond to frauds. RBI has also declared that the fifth group of the regulatory sandbox would be theme-neutral.

Topic 5. PM SHRI SCHOOLS (PM SCHOOLS FOR RISING INDIA)

Important for subject: Environment

PM SHRI Schools (Prime Minister Schools for Rising India)
pcsstudies.com

Release date of PM SHRI scheme:
5th of September; On the occasion of teachers' Day

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Scheme will be implemented as a centrally sponsored with a total project cost of Rs. 27,360 crore, for the period of five years from 2022-23 to 2026-27.

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Aim of PM SHRI: PM SHRI (Pradhan Mantri Schools for rising India) is a centrally sponsored scheme that aims to transform 14,500 government schools across the country into a showcase of the new National Education Policy (NEP)

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On the day of Teacher's Day today, the Prime Minister Shri Narendra Modi, has announced the development and upgrading of 14,500 schools across India as part of the Pradhan Mantri Schools for Rising India (PM-SHRI) Yojana.

- It will be a brand new centrally sponsored program to upgrade and improve the performance over 14500 schools across the country , by strengthening the existing schools selected of schools run through Central Government/ State/ UT Government and local authorities.
- The PM SHRI Schools will showcase all elements in the National Education Policy 2020 and serve as models for other schools and provide mentorship to other schools within the vicinity.
- The goal of these schools won't solely be teaching in a high-quality manner learning, cognitive development and learning as well as creating people who are well-rounded and holistic, equipped with the essential 21st century skills.
- The pedagogy that is taught in these schools will be more hands-on integrative, holistic, toys and play (particularly during the early years) in a way that is inquiry-driven, oriented towards discovery and learner-centered, discussion-based, versatile and enjoyable.
- The focus will be on achieving the highest level of proficiency in learning outcomes for all children in each grade.
- The assessment at every level will be dependent on conceptual understanding and the application of the knowledge to real-life situations. Assessment will be based on competence.
- The schools will be outfitted with the latest technology, including laboratories, smart classrooms and smart sports equipment, libraries art room, and more. which are inclusive and accessible.
- They will also be designed as eco-friendly schools that incorporate water conservation, recycling of waste as well as energy efficient infrastructures and the integration of organic lifestyle into the curriculum.
- They will lead their respective regions to provide quality education in an equal happy, inclusive and welcoming school setting that takes care of the diversity of backgrounds of children, their multilingual needs, as well as the different academic capabilities of children.

Topic 6. SPECTRE OF DAY ZERO: HOW SOUTH AFRICA IS REVISING ITS WATER STRATEGY

Important for subject: Environment

The South African department of sanitation and water is reviewing the 10 years-old National Water Resource Strategy (NWRS).

- A large portion of the country is facing an water crisis as well as Nelson Mandela Bay staring at the Day Zero situation.
- The version 2.6 of the National Water Resource Strategy-3 was released in an official gazette of the government on July 29, 2022.
- The site will be open for public input up to 90 days.
- The new strategy aims to strengthen integration of the water quality control.
- Zero Day In late 2017 There were the first mentions about plans to "Day Zero", a shorthand term used to describe the day that the level of water at the main dams that supply the City may fall to lower than 13.5 percent.
- "Day Zero" would mark the beginning of the Level 7 water restrictions. This would be the day that municipal water sources were largely shut off, and it was anticipated that residents might wait in lines to get their daily supply of water.

Topic 7. URGENCY BREWS TO FOREGROUND LOSS AND DAMAGE AT COP27

Important for subject: Environment

The development of the establishment of an Loss and Damage Finance Facility (LDF) has been slow in the past However, experts suggest this year's UNFCCC COP27 in this year may be different, since it is the first time that the Glasgow Dialogue has sparked important discussions about damages and loss.

- Communities that are vulnerable, such as those in less developed nations, small islands and developing nations often face impacts from climate change that are too serious to adjust to.
- They are now requesting the creation of a separate financial institution to pay for the loss and damages that climate changes cause.
- One of the most important funds that was established under the auspices of the UNFCCC it is called known as the Green Climate Fund (GCF).
- It was established to aid the efforts of developing nations to face the issues of climate

change.

- India specifically is home to specifically, the National Adaptation Fund for Climate Change (NAFCC) in order to cover the costs of adaptation to climate change.
- The projects approved under the NAFCC deal with a range of 'mitigation and adaptation' issues.
- But, they don't take into account the need for funding in the event of circumstances which go beyond the realm of adaptation.

Loss and Damage:

- The term "loss and damage" is used in the UN Framework Convention on Climate Change (UNFCCC) process to refer to the damages caused by human-caused (human-generated) changes in the climate.
- The correct reaction to damage and loss has been debated since the UNFCCC's adopting.
- Insuring the liability and the right to compensation for damage and loss is a goal that has been in the works for a long time for developing and vulnerable nations in the Alliance of Small Island States (AOSIS) as well as The Least Developed Countries Group in talks.
- Warsaw International Mechanism at COP19 (November 2013) in Warsaw, Poland.
- The current UNFCCC Loss and Damage Mechanism, also known as the Warsaw International Mechanism for Loss and Damage is focused on dialogue and research, rather than compensation or liability.
- Its main functions include fostering coherence, coordination, dialogue and synergies between relevant stakeholders
- Improved understanding and knowledge of risk management techniques that encompass a range of strategies to reduce damage and loss that result from the negative impacts of climate change.
- This includes the slow-onset effects Santiago Network
- The mission of the Santiago Network is to catalyze the technical assistance provided by relevant institutions as well as networks, bodies and experts for the application of effective strategies to avoid, minimize, and dealing with L&D at the national, local and regional levels in countries in the developing world which are most vulnerable to

the adverse impacts of climate change.

- The climate change parties established in the Santiago network in the WIM at the COP 25 in Madrid,

Spain Green Climate Fund (GCF):

- The GCF was created in the year 2010 by the UNFCCC's financial mechanism in order to funnel funds from developed nations towards developing countries in order to help them to limit the impact of climate change , and also to adjust to the disruptions that result due to a changing climate.
- The Green Climate Fund will support initiatives, programs policies, and other actions in developing countries Parties through thematic window for funding.
- It is envisioned to be the mainstay of the efforts that aim to collect Climate Finance in the amount of 100 billion per year until 2020.
- The Fund is managed and overseen by an Board which will take complete responsibility for decisions regarding funding and receives the direction from the Conference of Parties (COP).
- National Adaptation Fund for Climate Change (NAFCC) under NAFCC the grant of 100% central is given to State governments for the implementation of climate change adaptation initiatives.
- The Scheme is created to meet the goals of the National Action Plan on Climate Change (NAPCC) and to operationalize those State Action Plans on Climate Change (SAPCCs).
- The purpose for the funds is to aid states/UTs who are especially susceptible to the negative effects of climate change by assisting them in tackling the expenses of adaptation.
- The National Bank for Agriculture and Rural Development (NABARD) is the National Implementing Entity (NIE) responsible for the implementation of adaptation projects within the NAFCC.
- In this program, Union Government encourages States to develop creative and sustainable projects to increase resilience to climate change, and incorporate it into the planning process.

Topic 8. INDIA-BANGLADESH TRADING RELATIONS AND CEPA

Important for subject: Economy

The Prime Minister Narendra Modi has said India and Bangladesh will soon begin negotiations regarding a Bilateral Comprehensive Economic Partnership Agreement (CEPA).

- As Bangladesh is preparing to become becoming a developing country by 2026, it will no longer be eligible to enjoy the benefits of trade that the country currently has as a developing country.
- Bilateral Comprehensive Economic Partnership Agreement (CEPA) CEPA: The CEPA will likely to concentrate on trade in services, goods and investments the main goal is the reduction of the gap in trade between the two countries.

Comprehensive Economic Partnership Agreement (CEPA):

- Comprehensive economic partnership agreements (CEPA) can be described as a type of free trade pact which encompasses negotiations for trade of investment and services as well as other areas in economic cooperation.
- There is also the possibility of negotiating on issues such as customs cooperation and trade facilitation as well as competition and IPR.
- Cooperation agreements or partnership agreements are more extensive as compared to Free Trade Agreements.
- CEPA is also a look at the regulatory aspects of trade and includes an agreement that covers the regulatory aspects.
- India had signed CEPAs in the past along with South Korea, UAE and Japan.
- The current institutional frameworks for investment and trade include that in 2015, the commercial agreement signed between these two states was renewed to a term of five years, with the option of auto renewal.
- In accordance with the South Asian Free Trade Area (SAFTA), Bangladesh extends preferential tariffs to Indian exports of goods that are not on the "sensitive list" of 993 items.
- In 2011 India declared duty-free and access to Bangladesh across all tariff lines with the exception of alcohol and tobacco.
- Agreement on Promotion and Protection of Investments is in effect since the year

2011.

- To make it easier for the flow of trade and transit on the inland waterways and to facilitate transit through inland waterways, a Protocol on Inland Waterways Trade and Transit (PIWTT) has been in force since.
- The protocol permits the transportation of goods via barges and vessels along eight routes that connect India and Bangladesh and to and from points across India by way of Bangladesh.
- Direct sea transport of containerized bulk/dry cargo started with the signing of the Memorandum of Understanding (MoU) on Coastal Shipping in June 2015.
- MoUs were concluded in 2015 regarding the use of the Chittagong as well as Mongla Ports for Movement of Goods between and to India.
- The MoU on Border Haats that covers the Indian-Bangladesh border has been renewed April of 2017.
- Presently there are four Border Haats -- two each in Meghalaya (Kalaichar and Balat) and Tripura (Srinagar and Kamalasar) -are operational.
- The process of setting up two additional haats along the border between Tripura and Bangladesh as well as four on the border between Meghalaya and Bangladesh is in progress.
- The two sides also agreed to find areas for the next six Border Haats.

Relations between India and Bangladesh

- Between 2021 and 2022, Bangladesh will be the biggest trade partner for India across South Asia and the fourth most important market for Indian exports around the world.
- India is Bangladesh's second largest trade partner and the biggest exporter market within Asia.

Topic 9. EXTERNAL DEBT

Important for subject: Economy

The outstanding foreign debt of private long-term duration of nations classified in the World Bank as belonging to the middle and low income categories nearly increased by more than \$1.04 trillion back in 2012 and to \$2.18 trillion by 2020.

- In general, the proportion of the government in foreign currency bond transactions

across emerging market and emerging economies (EMDEs) has decreased between 65 and 48 percent between 2002 and 2021.

- The percentage of government issuance has decreased in the developing Europe (from 85-66 percent) in addition to Latin America and the Caribbean (from between 76 and 51 percent).
- The percentage of government-issued bonds has increased across Africa and in the Middle East (from 39 per percent from 1996, to 64 percent in 2021) as well as in the emerging Asian and in the Pacific (from between 14 and 24 per cent in the same period of time).
- The reason Affects: In the advanced economies as well as low global risk aversion that leads to portfolio reallocation to take advantage of yields that are risk adjusted and diversification options.

Why is it risky?

- The decline in reserves of foreign currency - Foreign borrowing is a requirement for debt service commitments to be financed with foreign currency.
- Exposed to external shocks - Any external shock that has an impact on foreign currency earnings, or even receipts may trigger distress in debt.
- affected by depreciation- In the event of an unexpected appreciation of the currency in the country the debt service cost in local currency could increase and increase the burden of servicing.
- Capital flight- When debt takes shape of bond, it is trading-able and allows investors who are speculative to leave whenever they see doubt.
- For instance, the ongoing effort central banks in developed countries to increase interest rates, and to limit or eliminate excess liquidity from the markets is prompting the departure of bond holders from less developed nations.
- This reduces the price of bonds and also increases rates of interest, causing more the stress on debt.
- This also increases prices for contracting new debt typically to pay off past debt.
- Multiple bondholders within the group of creditors can delay or hinders resolution.
- Foreign Currency Bonds Apart from issuing bonds on domestic markets as well as local currencies, local governments and corporations can also issue bonds on other

currencies and markets.

- It's a viable alternative to the issue of loans in its currency A government could issue loans in foreign currencies to ease investor concerns about the currency's devaluation, which could reduce the value of their profits.
- The issue of debt in a foreign currency puts an entire country to risk of exchange rates since if their currency is devalued as a result, the process of paying off international debt is more expensive.
- Foreign Currency Convertible Bonds (FCCBs) refer to a bond that is issued by an Indian company that is issued in foreign currency, with the principal and interest of which are due in foreign currency.
- Convertible bonds are a combination of a debt and equity instrument.
- Convertible bonds are issued by companies to reduce the interest rate on debt, and also to prevent the process of dilution.

Topic 10. CORE SECTOR OUTPUT AT 6-MONTH LOW; CRUDE, NATURAL GAS HIT MOST

Important for subject: Economy

The output of eight key infrastructure sectors slowed rapidly for the second straight month, reaching an all-time low in July of 4.5 per cent in July, down from the previous year in a time when a favourable base effect decreased significantly.

- The increase was as high as 13.2 percent in June, and 19.3 percent, which was the highest rate of growth for 13 months, in May.
- This could slow down the rise of the industrial production index (IIP) during July, which was 6.7 percent in June, considering that the main industries account 40.3 percent of the IIP. 40.3 percent of the IIP.

Core Industry:

- Core industry is defined as the primary industry that produces a multiplier effect in the economic system.
- In the majority of nations, there is an sector that is the an integral part of other industries, and it is believed to be the main industry.
- The Eight Core Industries comprise 40.27 percent of the weight of the items as part of

the Index of Industrial Production (IIP).

Eight Core Industries in decreasing order of their importance:

- Refinery Products> Electricity> Steel> Coal> Crude Oil> Natural Gas> Cement>Fertilizers.
- Index of Industrial Production: the Index of Industrial Production (IIP) is an index that displays the rate of growth in various industries of the economy over the same time frame.
- It is published each month through CSO. Central Statistical Organization (CSO), Ministry of Statistics and Programme Implementation.
- IIP is an indicator of composite nature that evaluates the rate of growth of various industries that fall under the categories of Broad sectors: Manufacturing, Mining and Electricity.
- Sectors that are based on usage: Basic Goods, Capital Goods as well as Intermediate Goods.
- Base Year for IIP is 2011-2012.
- The eight industries that make up India comprise around 40% total weight of the items included as part of the IIP.

Importance to IIP:

- IIP is the sole indicator of physical quantity of production.
- It is utilized by various government agencies, including those of the Ministry of Finance, the Reserve Bank of India, etc. to make policy decisions.
- IIP is still extremely relevant to the calculation of forward and quarterly GDP estimates.

Topic 11. URBAN JOBLESSNESS DECLINES TO 7.6% IN APR-JUN 2022: NSO

Important for subject: Economy

The rate of unemployment for people who is 15 or older in urban areas fell to 7.6 per cent in the period April to June 2022 compared to 12.6 percent one year ago according to according to the National Statistical Office (NSO) reported on Wednesday.

- The PLFS also showed that the rate of unemployment for females (aged 15 years or more) living in cities decreased to 9.5 percentage in April and June 2022, compared to 14.3 percent a year earlier.
- It was 10.1 percent in January March in 2018. Among males, the rate of unemployment in urban areas fell to 7.1 % in April and June 2022 as compared to 12.2 % a year earlier.
- It was 7.7 percent in the period January to March 2022. The unemployment rate, also known as joblessness, is the amount of people who are unemployed in the workforce.
- The rate was very high during April and June of 2021 because of the sweeping effects of Covid associated restrictions within the country.
- The most recent figures, based on a monthly labour force survey, highlighting an improvement in the rate of unemployment and a moderately increased labour force participation rate which indicates a steady economic recovery following the impact of pandemic.
- Based on the 15th Periodic Labour Force Survey (PLFS) the percentage of people who were unemployed 15 years or older during January-March was 8.2 percent in urban areas.
- The study also revealed that the rate of joblessness among females (aged 15 years or more) living in cities decreased by 9.5 percent in April and June 2022, compared with 14.3 percent one year earlier.
- It was 10.1 percent in January and March this year.
- For males and males, the rate of unemployment in urban areas fell to 7.1 percent in April-June 2022, against 12.2 percent a year before.
- It was 7.7 percent between January and March 2022. The PLFS also show that the labour force participation rates for CWS (Current Weekly Status) in urban areas for those older than 15 has risen to 47.5 percent between April and June 2022, up from

46.8 percent during the same time frame a year ago.

- The figure was 47.3 percent between January and March.
- Periodic Labour Force Survey The survey is the first Indian computer-based survey initiated in 2017 by the NSO in the year 2017.
- It basically maps the employment situation in the United States.
- It collects data about a range of variables, including the amount of unemployment, the kinds of jobs and their parts, the earnings made from different kinds of jobs, the amount of hours that are worked, etc.
- Before PLFS before it, NSO, National Sample Survey Office (NSSO) was the name that used to be associated with NSO was responsible for bringing information related to unemployment and employment based upon its quinquennial (every five years) household socio-economic survey.
- The reports are published on an annual, quarterly and on an annual basis.
- The quarterly reports only cover urban areas, whereas the annual report includes both rural and urban areas.
- It estimates the main indicators of employment and unemployment (viz. the WPR index, LFPR, UR) within the short time period of 3 months for urban areas only for CWS. (CWS).
- Estimate unemployment and employment indicators both in normal condition and CWS, both in urban and rural areas every year.
- Divers indicators for Different indicators. Labour Force Participation Rate (LFPR)-the percent of people who are who are in the labour force (working or looking or available for employment) within the population of all ages. Unemployment rate is the proportion of persons who are not employed who are in the workforce.
- The term "labor force" refers to those who are employed or unemployed , but looking for to find work.
- The Worker Population Ratio (WPR)-the percentage of employed people within the population.
- Usual Status of Activity Status: The status of the activity calculated on the basis the reference period that is the last 365 calendar days prior to the date of the survey, it is also known as the normal activity status of the individual.
- Current weekly status (CWS) CWS: The current status of an activity determined by

the reference period of the past 7 days leading up to the date of the survey is referred to as the current status of the week (CWS) for the individual).

Topic 12. INDIA OVERTAKES BRITAIN

Important for subject: Economy

Britain has fallen in comparison to India to be the sixth-largest economy.

- US>China>Japan>Germany>UK are world top six largest countries in nominal terms
- The calculation is based on US dollars. India increased its lead in the first quarter of this year, according to data on GDP from the International Monetary Fund.
- The amount of Indian economy nominally in the third trimester of 2021-22 stood at \$854.7 billion. The equivalent figure for the UK was \$816 billion.
- UK GDP increased by just 1percent in nominal terms in the second quarter , and declined by 0.1 percent in real terms.
- Sterling has also performed poorly against the dollar in relation to the rupee, the pound slipping by 8.8% in comparison to the Indian currency in the year.
- India's economy India is a middle-income market economy that is in the process of developing.
- It is the world's fifth largest economy in nominal GDP, and third largest by buying power parity (PPP).
- As per the International Monetary Fund (IMF) according to a per capita base of income, India was ranked as 142nd in gross domestic product (nominal) while 128th in the GDP (PPP).

Nominal GDP vs PPP GDP

- To evaluate GDPs across the globe, currencies have to be converted in a way that they are the same across all countries.
- There are two primary methods of conversion to common currency which are PPP and Nominal. The Purchasing Power Parity Nominal GDP It's useful for large-scale GDP comparison, whether for a region or country or on a global scale.
- Nominal GDP a region is calculated using current market prices and changes in accordance with the rate of inflation.
- Incorporating the rate of inflation in the calculation of GDP nominal GDP is a way to

determine how much inflation is taking place in an economy.

- The rate at which prices rise in an economy are taken into account in nominal GDP.
- The biggest drawback of nominal GDP comes from the fact it does not take into account the living standards of a nation. It concentrates on only economic development and the performance.
- It may vary significantly from year to year based on fluctuations of the rate at which it is exchanged.
- PPP GDP can be used to assess the economic growth as well as living standards of a nation which makes it an effective tool for global comparisons.
- The PPP strategy makes use of the exchange rate to transform one nation's currency to another.
- With a constant quantity of cash, the value of services and goods available for purchase in different countries is then measured.
- For instance, PPP may compare the cost of the car in France against the price of a vehicle in Japan (after applying an exchange rate that converts yen into Euros and the reverse) to determine the differences in the cost of living between the two countries.
- PPP GDP remains pretty stable from year the following year, and isn't affected by fluctuations in exchange rates.
- PPP GDP is often blamed for the reason that it does not account for variations in the quality of goods and services across different countries.
- The general consensus is that it's not as accurate than nominal GDP, and usually depends on estimates rather than calculations.
- In this way it is commonly used to assess and measure the size of the national economies.

Topic 13. V. O. CHIDAMBARAM PILLAI

Important for subject: History

Premier Minister Shri Narendra Modi paid tributes to the freedom warrior V. O. Chidambaram Pillai on the anniversary of his birth.

About V. O. Chidambaram Pillai:

- ValliyappanOlaganathan Chidambaram Pillai was born into a Royal Family of

Tuticorin.

- He is also known as Kappalottiya Tamizhan as well as "the Tamil Helmsman". He was an Tamil Indian freedom fighter and an ex-leader in the Indian National Congress.
- The founder of the Swadeshi Steam Navigation Co. in the year 1906, to fight against the monopoly of British India Steam Navigation Company (BISNC).
- He started the first Indian shipping service that ran between Tuticorin (India) in India and Colombo (Sri Sri Lanka) along with The Swadeshi Steam Navigation Company (SSNC) which was competing with British vessels.
- Tuticorin Port Trust is one of India's 13 major ports is named for him. Chidambaram Pillai established many institutions such as Yuvanesh Prachar Sabha Dharmasanga Nesavu Salai, National Godown, Madras Agro-Industrial Society Ltd., and Desabimana Sangam.

Coral Mill Strike:

- On the 23rd of February 1908 Chidambaram Pillai gave a speech in Thoothukudi and urged the workers of Coral Mill (now an integral part of Madura Coats) to protest against their poor pay and the harsh working conditions.
- The next day, employees of the Coral Mill went on strike. Chidambaram as well as Subramanya Siva commanded the strike.
- They demanded increments in earning, earnings on weekly holiday, and other types of leave options.
- Chidambaram Siva and Chidambaram Siva were detained on the 12th of March 1908.
- This was followed up by a widespread protests.
- In Thirunelveli shops and schools were shut down in protest and riots broke out.
- The Thirunelveli municipal office Post offices, municipal offices, municipal courts and police stations were targeted.
- The general strike began in Thoothukudi in India, marking the first strike of political nature in India.

Topic 14. NEW NAVAL ENSIGN: THE NAVAL PROWESS OF CHHATRAPATI SHIVAJI THAT HAS ALWAYS INSPIRED THE INDIAN NAVY

Important for subject: History



The Prime Secretary Narendra Modi unveiled the new Naval Ensign (flag) at Kochi on Friday (September 2)

- The flag is a signature of Chhatrapati Shivaji Maharaj who laid the foundations of a modern navy.

Shivaji and the concept of the seas:

- Chhatrapati Shivaji Maharaj laid great attention to sea-going skills and laid the foundations of a modern navy during the 17th century.
- It is the Indian Navy has always acknowledged this fact and designated a training facility located in Lonavla in the name of INS Shivaji and a administration and logistics hub of Western Naval Command, Mumbai as INS Angre, named after KanhojiAngre who was a renowned Maratha Naval commander.
- The oval shape of the seal Shivaji on the brand new Naval Ensign is an official mark on the umbilical ties between India's Indian Navy with the navy of the Maratha Empire.
- The strength of Shivaji's naval expertise strategic thinking ensured an effective naval presence was built on the Konkan coast to safeguard the trade in the sea in the Maratha Empire.

- According to the Indian Navy document, "The navy under Shivaji was strong enough that the Marathas were able to stand up to the British, Portuguese and Dutch.
- Shivaji recognized how important it is to maintain a safe coastline, and also protecting his west Konkan coast from assaults of Siddis "the fleet".
- Shivaji built ships in cities like Kalyan, Bhivandi, and Goa to trade, and also to create an army of combat.
- "He also built a variety of bases and forts at sea for storage, repair and shelter.
- Shivaji had many long battles in battles with Siddis of Janjira along the coast.
- The fleet increased to between 160 and 700 merchant, support and combat vessels.
- He began trading with foreigners independently after having eight or nine ports located in Deccan," the Navy document says.
- His fleet was outfitted with Ghurabs (gunboats) along with gallivats (row boats).
- The Maratha Navy was mostly an ocean-going "green water" navy, in contrast to an ocean-going or "blue water" navy.
- Their ships depended on sea breezes and land winds.
- The Maratha did not construct vessels large enough to take on the British out at sea . from the coast waters.
- Kanohji Angre was the commander of the Maratha navy.
- He is recognized for having laid a strong naval foundation that ensured the Marathas would be a sea-based force to be reckoned with.
- Kanhoji is acknowledged as having held his own against English, Portuguese and Dutch naval. He made sure that merchants who were trading to support his Maratha empire were safe in the oceans.
- He established a base in Colaba with additional bases in Suvarndurg and Vijaydurg close to Ratnagiri.

Topic 15. HOW INDIA ADOPTED ITS MILITARY FLAGS AND BADGES BASED ON LORD MOUNTBATTEN'S SUGGESTIONS

Important for subject: History

New Naval Ensign (flag) that was launched by Prime Minister Narendra Modi Friday (September 2) in Kochi and highlighted the flags and rank codes adopted in the Indian military following Independence.

- Documents obtained from the National Archives of India show that Lord Louis Mountbatten, former Viceroy and Governor General of India was a key role in the creation of brand new badges for rank and flags as India was about to be made an independent Republic on the 26th of January 1950.

When did India move away from British-era flags and ranks?

- The new Indian design of the flags of Army, Navy and Air Force as well as flags of Air Force, Navy and Army. Regimental Flags of the Army and badges of rank of the three services were adopted on the 26th of January the 26th of January, 1950.
- The 'Kings Commission' that was granted the Indian army officers changed to an Indian Commission at the same time as well as on a subsequent date, the King's Colors of various regiments were buried in the Indian Military Academy (IMA), Dehradun.

What year did Lord Mountbatten enter the picture?

- The national archives hold files dating to 1949 which include a lengthy letter from Lord Mountbatten on flags, names as well as ranks for the military and the prime minister Jawaharlal Nehru's note to former Defence Minister Baldev Singh regarding Mountbatten's suggestions.
- The note, which the archives reveal, was handed the note to Nehru by the Lord Mountbatten during their meeting in London.
- The note was sent by the PM's office into the office of Governor General C Rajagopalachari on May 24 1949. The note stated that it was on the subject of 'Names and Insignias of the Indian Armed Forces' after India is made an independent Republic.
- The letter further stated that the note must be presented to the Governor General.

How did Lord Mountbatten write in his note?

- In the event of the creation of a Republic the term 'Royal' will be removed from the Indian Army, Navy and Air Force.
- Lord Mountbatten strongly advised that no other term like "State" or "Republican" should be substituted for the word "Royal" as the word "would have the effect of separating the forces of India psychologically from the other services in the

Commonwealth".

- The note also suggested in the note to the Crown The new Ensign, as suggested in the note that it should keep the red cross, but that the Indian national flag could replace it with the Union Jack.
- Similar to the IAF he suggested to replace the blue light IAF flag that is adorned with Union Jack and red, blue and white roundels should be replaced by the national flag and green white, saffron and red roundel.
- He also suggested this in order to preserve the unity in his suggestion to preserve the commonality of Commonwealth flags.

What modifications did Mountbatten propose regarding uniforms?

- In his letter in his note, Lord Mountbatten was insistent that the existing uniforms be modified in the smallest amount feasible.
- He said that the Crown on badges for rank of Majors and higher should be replaced with "The "three lions of Ashoka" and the Star of the Order of the Bath should be replaced with the Star of India or another version of the star.
- Also, he suggested the cross-sword and baton on badges of the ranks of Generals should be kept.
- The former Viceroy supported the use of stripes of rank in the Navy as well as the Air Force saying these were globally similar.
- Lord Mountbatten also went on to suggest changes to the caps badges and buttons of uniforms to the smallest detail. He then followed up on his suggestion by supplying actual designs for flags, ranks and cap badges, and buttons.

What did the Indian government respond on Mountbatten's suggestion?

- Nehru sent a letter to defense Minister in the month of September stating that he was in agreement with the recommendations made by the Governor General's former counterpart that there need to be as little disruption as is possible.
- The prime minister of the time specifically pointed out the suggestions of Mountbatten to the Navy.
- The end result was that Mountbatten's recommendations were generally accepted and were implemented beginning on January 26, 1950.

Topic 16. NEW NAVAL ENSIGN: NISHAAN

Important for subject: History

It is reported that Saint George's cross has been removed from brand new Indian Navy flag.

- The elements of the brand new Indian Navy flag consist of the flag of the nation (tricolor) located in the left-hand canton in the upper right that symbolizes the nation's national spirit naval force.
- In the lower left-hand corner of the fly side in the lower right-hand corner, the Indian Navy's brand new insignia is composed in the Indian national emblem, with the national motto , 'Satyamev Jayate in Devanagari script anchor and the Navy's motto: Shan no Varunaha (Be blessed to us, oh Varuna) within the blue octagon.
- The octagon is a representation of eight directions
- The gold edge of this octagon symbolizes the Rajmudra of Chhatrapati Shivaji Maharaj, the legendary 16th century Maratha warrior.
- He established a reputable naval fleet that was able to earn admiration from European naval forces who were in operation in the time.

Topic 17. PULI THEVAR

Important for subject: History

Premier Minister Shri Narendra Modi has offered a tribute to the brave Puli Thevar on the anniversary of his birth.

- Puli Thevar was Tamil Palaiyakkarar who was the ruler of Nerkattumseval located in the Sankarankoil Taluk of Tenkasi, which was previously Tirunelveli Tamil Nadutold East India Company that "not even a grain can be paid as tax".
- Mahfuzkhan (brother of Nawab from Arcot) was sent along with a group belonging to Mahfuzkhan (brother of the Nawab of Arcot) was sent Company armies under the command of Colonel Heron in Tirunelveli to take care of Pulithervar.
- Colonel Heron quit his plan to retire to Madurai. Heron was called back and was dismissed from the army.
- Puli Thevar also established a confederacy with the Palayakkars to take on the British.
- The English had success Puli Thevar in gaining support of the Rajas in Ramanathapuram as well as Pudukottai. Puli Thevar was able to gain the backing that of Hyder Ali of Mysore and the French.

- Hyder Ali could not help Puli Thevar because He was already involved in a major battle between the Marathas.
- The Nawab also sent a second contingent of sepoy to Mahfuzkhan , and the army was reinforced to Tirunelveli.
- With the help of the Raja from Travancore in 1756 until 1763, the Palyakkarars of Tirunelveli under the leadership of Puli Thevar were constantly in a state of rebelling against the authority of the Nawab.
- Yusuf Khan was sent by the company. He began to pound the Nerkattumseval Fort and continued to do so for two months.
- In 1761, Puli Thevar's three Forts (Nerkattumseval, Vasudevanallur and Panayur) were under the control under the control of Yusuf Khan.
- The palyakkarars' unified front started to fall apart as Frenchs were not able to provide support.
- Puli Thevar was exiled. Puli Thevar returned to exile and was recaptured by Nerkattumseval in 1764.
- But he was ultimately defeat by the Captain Campbell at the end of 1767. Puli Thevar managed to escape and later was exiled.

Topic 18. HAND, FOOT, AND MOUTH DISEASE: SYMPTOMS, TREATMENT AND PREVENTION

Important for subject: Science and Technology

INFOGRAPHIC OF HAND FOOT AND MOUTH DISEASE

Enterovirus 71
Lorem ipsum dolor vix eros persequeris cu. Cu ornatus legendos vituperata pri, delenit albusius mea ne

Coxsackie virus
Lorem ipsum dolor vix eros persequeris cu. Cu ornatus legendos vituperata pri, delenit albusius mea ne

SYMPTOM

RASH

FEVER

VOMIT

DO
Lorem ipsum dolor sit amet vix eros persequeris cu.

DO
Lorem ipsum dolor sit amet vix eros persequeris cu.

SORT OUT
Lorem ipsum dolor sit amet vix eros persequeris cu.

Health There's seen a rise in the number of cases related to Hand, Foot, and Mouth Disease (HFMD) in Mumbai. However, since HFMD isn't a reported condition, the government doesn't have the data from private hospitals that share most of the cases.

- Doctors have advised patients not to be concerned, since HFMD can be a self-limiting illness and patients usually recover in one week.

What's Hand, Foot, and Mouth Disease and how can it be get around?

- Hand, Foot, and Mouth Disease is a common occurrence in children who are younger than 5 years old, but anyone can contract it.
- It is usually caused by a virus called coxsackievirus which is a member of a class of

viruses known as nonpolio Enteroviruses.

- The disease is rarely so serious, but it can be infectious.
- It is quickly spread in daycare centers and schools.
- It is spread through contact between people when the nose of an infected individual's discharge or secretions from the throat saliva, liquid from stool, blisters, or respiratory droplets are sprayed in the air following the onset of a cough or sneeze.

What are the profile of patients suffering from Hand, Foot, and Mouth Disease?

- Doctors from the city claim that there are a lot of children under 5 years old contract the illness.
- The most popular age group is between 3 and 4 years old.
- A few children are going to hospitals with chickenpox-like lesions However, the spread is restricted to only mouths and hands.
- In chickenpox, the lesions are usually located on the abdomen and chest.
- The typical time from the beginning of illness until the moment symptoms show up in patients that is sometimes referred to as the period of incubation, which is between three to six days.
- A few kids also have had rashes that appear repeatedly within a few months or

Do children suffering from HFMD required to be hospitalised?

- The majority of children have been able to recover at home, and seldom need hospitalization.
- Since it is a self-limiting disease, symptoms can are usually for 7 to 10 days, and then fade away.
- What are the symptoms, treatments to treat Hand, Foot, and Mouth Disease?
- Patients typically experience an ailment, sore throat or fever. painful blisters that look like lesions on the gums, tongue and inside the cheeks. children might develop ulcers within their mouths.
- There are also rashes that are visible on the soles of the feet, the palms and occasionally the buttocks. The treatment for children is usually anti-allergic ointments and medicines.
- The lesions typically disappear within between five and six days.

- Drink plenty of liquids. Mouth sores can cause it to be difficult to swallow, and your child might not want to drink a lot.
- Drink plenty of water to remain hydrated. As for safety, children must adhere to the guidelines for Covid acceptable behavior, such as washing their hands or wearing masks must wash their hands using soap for minimum 20 seconds.
- If soap is not available, apply alcohol-based hand sanitizers.
- A notifiable illness is any disease that is required under the law for it to be disclosed to the government authorities.
- This will enable authorities to collect information needed to track the spread of the disease and also provides the early warning of any outbreaks.
- The process will also aid the government in keeping the track of its progress and devise a plan for eliminating and controlling.
- In conditions that are less infectious this improves the information on the prevalence and the distribution of the disease.
- The Centre has reported a variety of illnesses like cholera, leprosy, diphtheria, encephalitis and meningitis. Pertussis (whooping cough) and plague, tuberculosis AIDS measles, hepatitis and many more.

Topic 19. THE DEAL WITH ERIC LERNER SAYING THE BIG BANG DIDN'T HAPPEN

Important for subject: Science and Technology

Following the time that NASA published the initial images taken by the James Webb Space Telescope, Eric J. Lerner made the same infamous assertion of it was the Big Bang didn't really happen.

- The images of JWST's James Webb Space Telescope (JWST) never fail to amaze everyone around the world.
- Even those who typically keep their eyes focused on the mocking primetime debates on the news channels on TV were able to take a moment or two to look at those stunning images, such as that from the SMACS 0723 galaxy cluster
- Scientists have recently verified the existence of carbon dioxide on the surface of a gas giant hot planet that orbits a Sun-like star about 700 light-years away because of JWST.

- Fred Hoyle, the astrophysicist well-known for his explanation of the mechanism by which fusion reactions in stars can create chemical elements developed his theory of steady states, which was the only theory that was a serious challenge in the Big Bang theory in his time.
- James Webb Space Telescope JWST is a space telescope, which is scheduled for the future to replace Hubble Space Telescope in NASA's most awaited astronomy mission
- It is the strongest space telescope that has ever been built.
- It will permit a wide variety of research within the fields of cosmology and astronomy as well as observing some of the most distant phenomena and objects that exist in our universe.
- It could help us understand the causes of things like the creation of the first galaxies as well as the precise atmospheric characterisation of exoplanets that could be habitable.
- The significance of JSWT has been described by some as JSWT"the "telescope that ate astronomy."
- It is believed to go at time in the Dark Ages of the universe since it will look at every stage of cosmic evolution starting from to the Big Bang to the formation of galaxies, stars and planets through the evolution of our solar system. Solar System.
- The JWST will have the ability to look right through and even into enormous clouds of dust which are invisible to previous generations of visible-light telescopes such as that of Hubble Telescope.
- The Webb comes with cameras and other instruments that are sensitive to both infrared and "heat" radiation, and the Hubble isn't.
- This galaxy-cluster SMACS 0723 presents an image that shows "thousands of galaxies" as it was seen 4.6 billion years ago.
- NASA has released the most detailed and sharpest infrared images of the galaxy cluster in the distance obtained from James Webb Space telescope. James Webb Space telescope.
- Galaxy clusters are the biggest galaxy clusters in space. They are connected by gravity.
- It provides us with details regarding the structure of the universe at the biggest

dimensions Big Bang Theory Big bang theory, sometimes referred to as expanding the universe hypothesis is a new theory that tries to resolve a variety of questions about the nature of the universe.

- Edwin Hubble, in 1920 proved in 1920 that our universe was expanding.
- As time passes, galaxies get closer and closer. In the same way, the distance between galaxies being observed to be growing and consequently the universe is thought to be expanding.
- Scientists believe that even though the distance between galaxies is growing, the observations don't support the expanding galaxies.

Topic 20. WHAT ARE ANTI-RADIATION PILLS, HOW WILL THEY HELP IN CASE OF A NUCLEAR EMERGENCY IN UKRAINE?

Important for subject: Science and technology

Health As the possibility of a nuclear catastrophe within the Ukraine's Zaporizhzhia power plant rising in authorities from the European Union has decided to prevent a nuclear disaster by distributing 5.5 million anti-radiation pills that will be distributed to people living in the area.

What exactly is a radioactive emergency?

- These are random or unplanned situations that cause radio-nuclear risk for humans and the surroundings.
- These situations can result in radiation exposure by a radioactive source. These situations require immediate intervention to minimize the risk.
- The treatment of such emergencies requires the use of anti-radiation tablets.

What are anti-radiation drugs?

- Potassium Iodide (KI) tablets also known as anti-radiation pills are known to offer some protection against radiation exposure.
- They contain non-radioactive Iodine. They can block the absorption, and the subsequent concentration of radioactive iodine inside the thyroid gland.

What is the effectiveness of these pills?

- In the event of a radiation leak radioactive iodine floating in the air, and eventually

contaminates soil, water and food.

- While radioactive iodine deposits during exposure to sunlight can be eliminated by washing with soap and warm water according to World Health Organisation, the more serious risk is the possibility of inhaling it.
- "Internal exposure, or irradiation, occurs when radioactive iodine enters the body and accumulates in the thyroid gland," states the WHO.
- The thyroid gland utilizes Iodine to make hormones that regulate metabolism of the body and metabolism, is not capable of distinguishing non-radioactive from radioactive iodine.
- Potassium Iodide (KI) tablets depend on this in order to provide "thyroid blocking".
- The KI pills taken just within a few hours prior to or after exposure to radiation ensure that the nonradioactive Iodine in the medication is absorbed rapidly to make Thyroid "full".
- "Because KI contains so much non-radioactive iodine, the thyroid becomes full and cannot absorb any more iodine - either stable or radioactive - for the next 24 hours," according to the US Centre for Disease Control and Prevention.
- However, KI pills are only preventive and do not reverse any damage caused by radiation to the thyroid gland.
- When thyroid gland absorbs radioactive iodine, people who are exposed are at risk of developing cancer of the thyroid.

Is this method foolproof?

- Anti-radiation pills do not provide 100% protection.
- "The effectiveness of KI also depends on how much radioactive iodine gets into the body and how quickly it is absorbed in the body," states the CDC.
- The pills aren't for everyone.
- They are suggested for those who are younger than 40 years old.
- Women who are breastfeeding or pregnant are recommended to take them.
- While it protects thyroid cells from radioactive Iodine, it is not able to protect other organs from radiation exposure.

Substitutes for KI?

- It is recommended that the US Food and Drug Administration recommends against salt or iodine-based supplements because they are not able to provide enough iodine to cause thyroid blockage.

Topic 21. THE RISING SPECTRE OF BIO-CRIMES

Important for subject: Science and Technology

Biotechnology The ease of access to tools for genome editing and sequencing has made genetic engineering accessible to everyone

- A new 'synthetic biology' concept is emerging that can be used to commit crimes ranging from illicit gene editing to homemade drugs and neurohacking
- You may remember the 2001 'anthrax attacks' when individuals received letters that contained anthrax, a deadly bacteria; five people died and a number of people fell ill. It wasn't until several years later that the letters were traced back to Professor Bruce Ivins, an American microbiologist who lost his own life shortly when he was set to be detained.
- Synthetic biology
- There isn't any definitive term for synthetic biology however, it is essentially making organisms that aren't natural and specifically created to perform a function that we want.
- However, it could also refer to "re-programming" natural organisms to do something or changing their capabilities to create new ones similar to the way computers can be modified to perform specific tasks.
- For instance the chimeric antigen receptor (CAR) technique, which allows immune cells can be manipulated to recognize and fight cancerous cells.
- Synthetic biology, commonly referred to as the biology equivalent to the internet, has a myriad of potential and valuable applications.
- Every nation is looking at it with seriousness.
- In February, the Department of Biotechnology, Government of India released an interesting 'Foresight paper' which called for a government regulation on synthetic biology.
- However, just as the internet has created online crime, synthetic biology as well, can be used to sabotage.

- Easy access One is called 'next generation sequencing' (NGS), which is the term used to describe ultra-quick genome sequence.
- According to Illumina the company which offers NGS services The method "is used to determine the order of nucleotides in entire genomes or targeted regions of DNA or RNA".
- With NGS the cost to sequence the genome has dropped to a few hundred bucks from the thousands it was previously. the sub-\$100 mark is still a distant dream.
- The other is the tool to edit genes CRISPR is an Nobel Prize winning technology that assists in altering DNA structure and alter the functions of genes.
- The technology has made genetic engineering more accessible to the masses. TALEN is yet another tool to edit genes.
- The DNA edit tools "are being made openly available for purchase over the internet" According to a report by the UK Home Office on 'Future developments regarding security'.
- Risks Synthetic biology involves the massive synthesis of DNA that could create new pathogens or recreate pathogens from the past or alter naturally occurring organisms that could pose a threat biosafety.
- If a sequence that codes for an toxin is released through the Internet and anyone is able to create the genetic code or the pathogen.
- In addition to this deadly cocktail, add another ingredient - cybercrime The potential for criminality is increased by an order of magnitude.
- Synthetic biology combines a wide range of technologies that allow numerous applications with huge potential. They are accessible online via kits, bioinformatics tools , and data.
- Criminals may be able to conduct evil experiments. could be able to do: illegal gene editing, homemade harmful drugs, genetic blackmail bio-hacking, neuro-hacking cyber-bio-crime, and bio-discrimination. bio-malware.
- A blackmailer, for example can easily collect saliva samples from the father and son, and conduct an examination for paternity; if the results are negative, he can use blackmail.
- Neuro-hackers can alter the biome of the gut of an individual and influence the brain of the individual, since there is a link between the actions of gut bacteria as well as the

brain.

Topic 22. NIGHT SKY SANCTUARY

Important for subject: Science and Technology

The Union Minister Dr. Jitendra Singh says, India's first "Night Sky Sanctuary" to be created in Ladakh and the planned Dark Sky Reserve will be completed at Hanle in Ladakh in just three months. It will help boost Astro travel in India

- Dark Sky Sanctuary has an extraordinary or distinctive quality of starry night and a nocturnal ecosystem that is protected because of its natural, scientific or educational value its heritage of culture and/or the enjoyment of the public.
- A sanctuary is distinct from the definition of a Dark Sky Park or Reserve in that it's typically located in a remote area with very few (if there are any) nearby threats to its dark night skies , and it is not able to fulfill the criteria for being designated as a reserve or park.
- The geographical isolation typical of Dark Sky Sanctuaries restricts opportunities for public outreach. Therefore, designated sanctuary designations are specifically created to raise awareness about these sites that are fragile and to promote the long-term conservation of these sites.
- The Department of Science & Technology (DST), Govt of India is attempting the creation of India's first "Night Sky Sanctuary" in Ladakh that will be finished within the next three months.
- The planned Dark Sky Reserve will be situated at Hanle within Ladakh as part of the Changthang Wildlife Sanctuary.
- It will increase Astro travel in India and is one of the most prestigious locations in the world for optical, infra-red and gamma-ray telescopes.
- A three-part MoU was recently signed between the UT Administration, Ladakh Autonomous Hill Development Council (LAHDC) Leh and the Indian Institute of Astrophysics (IIA) for the launch of the Dark Space Reserve.
- Since it is a cold desert area, Ladakh holds great potential for astronomical observations that are continuous.
- Dry weather and clear skies conditions prevail through the majority of the year. This makes Hanlea the ideal location for sky-gazing and establishing astronomical observatories.

- At an elevation of 4,500 meters, Hanle is already home to an optical the gamma radiation and an infrared telescope located at the Indian Astronomical Observatory complex operated by the IIA.
- The telescopes are employed to study galaxies, stars as well as exoplanets, and the evolution in our Universe.

Topic 23. MONGLA & CHATTOGRAM (CHITTAGONG) PORT

Important for subject: International relations



India is looking into new routes for cargo shipping into the North-Eastern States using Bangladesh's ports as hubs for trans-shipment.

- Two ports within Bangladesh -the ports of Mongla & Chattogram (Chittagong) -- are being explored as possible hubs for transit.
- This means that the goods will be delivered through to the Kolkata port (Syama Prasad Port Mookerjee) to these ports, and from there they will be delivered via roads through in the Indian States, Assam (the lower Assam region), Meghalaya, Mizoram and Tripura.
- This will cut the duration of travel by half, and reduce the cost by almost one-fifth.
- Cargo movement, mostly through waterways, but also through roads is an eight-day

procedure.

- Traveling through The North-Eastern States via the 'Chicken's Neck region -- often referred to as "the Siliguri Corridor -- takes between 9 and 12 days. This includes the possibility of a 10 - 15% damage to products due to road conditions.

Mongla Port:

- Mongla, also known as Mongla Port, formerly Chalna Port, port city in the southwestern region of Bangladesh.
- Formerly, it was located at Chalna situated just eleven miles (18 km) further upstream on the Pusur River.
- The port is the principal seaport of the country's west region.
- It is a port for ships of Khulna city, which is situated close to the north.
- It is the second biggest and busiest port of the sea in Bangladesh.
- Mongla port is close to the shores of the Bay of Bengal and Pashur river.
- Due to the growing overcrowding in Bangladesh's biggest port, Chittagong Many shipping companies worldwide have switched to Mongla to find a solution.
- The major exports of the port are tobacco, leather, jute frozen fish, and shrimp.
- Imports of grain are the most important, as are cement fertilizer, coal along with wood and pulp.
- Mongla can also be a port of entry for tourist vessels that are traveling to the biggest mangrove forest on earth The Sunderbans.
- It is also listed as it is a UNESCO World Heritage Site.

The Chittagong or Chattogram Port

- It is among the most important ports on the sea in Bangladesh located within the area of Chittagong hills.
- It is the largest port for Bangladesh and is situated on the banks of the Karnaphuli River.
- Chittagong was a port. Chittagong was called Shetgang from at the time of the 4th century BC and it was also the port of call for vessels from China, the Middle East and China.
- About 90 percent of Bangladesh's exports as well as imports are handled now through

Chittagong Port. Chittagong Port.

- In the colonial age in the colonial era, Chittagong Port was one of the biggest ports in the eastern part of India through which goods were shipped to the borders of Myanmar by way of roads and railways.
- Because of the port's proximity to States in the north-east of India The port's facility is able to dramatically boost economic activity in the states of North-East India.

Topic 24. HIGH INFLATION AND RISK OF RECESSION WIDEN ECB DILEMMA

Important for subject: International relations

Eurozone (EZ) Inflation in the Eurozone (EZ) rose to another record-setting high and could soon be in double-digit levels, bringing about the an explosion of massive interest rate increases even as a recession-like slumber seems more likely

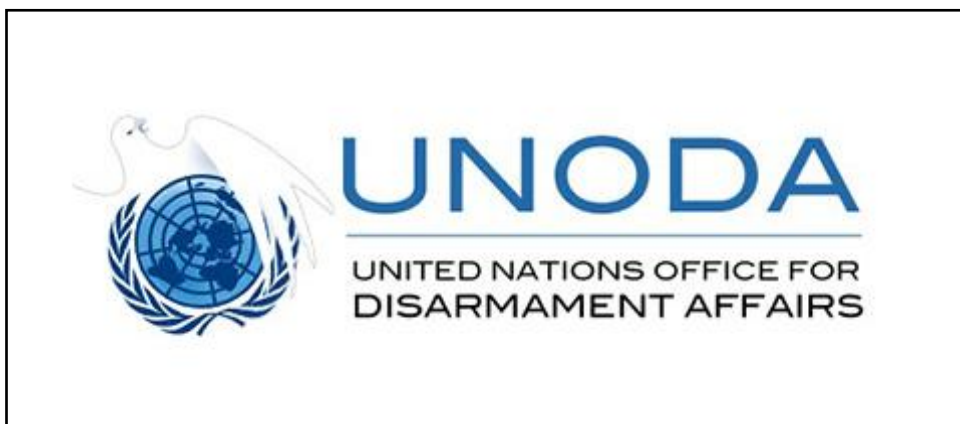
- Eurozone (EZ) Eurozone (EZ) is an monetary union that includes 19 states that are members that are part of the European Union (EU).
- The euro (EUR) to be their main currency and their sole legal tender.
- European Central Bank (ECB) The European Central Bank (ECB) manages the euro as well as creates and implements EU policies in the areas of economics and monetary.
- Its primary goal is to ensure that prices remain stable which will help in the growth of employment and economic growth.
- The role is to manage the euro, maintain prices steady and implement EU fiscal and economic policy
- President: Christine Lagarde
- The members are: ECB President and Vice-President and governors of Central banks of all EU countries
- The company was founded in 1998.
- Location: Frankfurt (Germany)
- Composition: The ECB President is the representative of his Bank in top-of-the-line EU and international gatherings.
- The ECB includes 3 decision-making organs: Governing Council - the primary body that makes decisions.
- It is comprised from The Executive Board (see below) as well as the governors of the

national central banks of countries of the eurozone.

- Executive Board - manages the day-today operation of ECB. The Executive Board is composed members of ECB President and Vice-President , as well as four additional members who are appointed to 8-year terms by the heads of the Eurozone countries.
- General Council - has more than a coordination and advisory function.
- The group consists from the ECB President and Vice President as well as governors of the central banks of all EU countries.

Topic 25. UNITED NATIONS OFFICE FOR DISARMAMENT AFFAIRS

Important for subject: International Relations



The UN Office for Disarmament Affairs (UNODA) is an Office of the United Nations Secretariat created in January 1998, as part of the Department for Disarmament Affairs, as part of United Nations Secretary-General Kofi Annan's plan to revamp the UN as outlined in the report he presented to the General Assembly in July 1997.

- Its objective is to promote non-proliferation and nuclear disarmament as well as the strengthening of disarmament protocols in relation to the other types of weapons of mass destruction, biological and chemical weapons.
- It also encourages efforts to disarm with respect to conventional weapons, particularly small arms and landmines, that are frequently the weapons of choice in modern conflicts.
- The United Nations has sought to remove such weapons from the moment of the organization's inception.
- The first resolution passed in 1946 by the UN General Assembly in 1946 created the Commission to address issues in connection with the discovery of nuclear energy, among other.

- Numerous multilateral agreements have been signed to prevent nuclear proliferation and nuclear testing as well as promoting progress in nuclear disarmament.
- They include those in the Treaty on the Non-Proliferation of Nuclear Weapons (NPT), the Treaty Banning Nuclear Weapon Tests in The Atmosphere, in Outer Space and in the ocean and under water, also called the Partial Test Ban Treaty (PTBT).
- It is the Comprehensive Nuclear-Test-Ban Treaty (CTBT) was signed in 1996, but is yet to enter force, as well as the Treaty on the Prohibition of Nuclear Weapons (TPNW), which will take effect on the 22nd of January in 2021.
- Many treaties, both bilateral and plurilateral, and agreements aim to reduce or eliminate specific categories of nuclear weapons and to hinder the proliferation of these weapons as well as their delivery vehicles.
- These include a number of treaties signed between both the United States of America and Russian Federation as well as different initiatives, such as those of the Nuclear Suppliers Group, the Missile Technology Control Regime, the Hague Code of Conduct against Ballistic Missile Proliferation as well as the Wassenaar Arrangement.
- The United Nations Secretariat supports efforts to ensure the non-proliferation of nuclear weapons and complete destruction of nuclear arms.
- "Securing Our Common Future: An Agenda for Disarmament" explores nuclear weapons within the context of "disarmament to save humanity."
- Treaties Involved in the Nuclear-Weapon-Free Zones

The following treaties constitute the foundation for the current NWFZs in the following ways:

- Treaty of Tlatelolco -- Treaty for the Prohibition of Nuclear Weapons in Latin America and the Caribbean
- Treaty of Rarotonga -- South Pacific Nuclear Free Zone Treaty
- Treaty of Bangkok -- Treaty on the Southeast Asia Nuclear Weapon-Free Zone
- Treaty of Pelindaba -- African Nuclear-Weapon-Free Zone Treaty
- Treaty on a Nuclear-Weapon-Free Zone in Central Asia

Non-Proliferation Treaty:

- The NPT is an international treaty with the aim is to prevent the proliferation of

nuclear weapons and technology, to encourage the peaceful use of nuclear energy and to promote the aim of disarmament.

- This treaty was signed in the year 1968 and became effective in the year 1970.
- It currently has the 190 member states.
- India is not an ally.
- It is a requirement for countries to let go of any current or future plans to construct nuclear weapons, in exchange in exchange for the right to peaceful use that utilize nuclear energy.
- It is the only obligatory commitment in a multilateral agreement to achieve the aim of disarmament for nuclear-weapon states.
- Nuclear-weapon states that are parties to the NPT can be defined as states that produced and destroyed an nuclear weapon or various nuclear explosives prior the 1st of January, 1967.

Comprehensive Nuclear-Test-Ban Treaty:

- CTBT was discussed during the Conference on Disarmament in Geneva and was adopted at the United Nations General Assembly in 1996.
- The Treaty will prohibit any nuclear explosions, anywhere, in all places, by anyone.
- The Treaty was made available for signature in the year 1996 and since then, 182 nations are a signatory to the Treaty and most recently, Ghana has adopted the treaty in the year 2011.
- A broad test ban has been described as the "zero yield" test ban which would ban the use of supercritical hydro-nuclear reactors, however not sub-critical hydrodynamic nuclear tests.
- The Treaty will become effective when all 44 States that are listed as in Annex 2 to the Treaty will sign it.
- The States were nuclear-armed when the Treaty was being negotiated and ratified.
- As of August 11 36 of these states have signed the Treaty.
- Eight States are yet to take action: China, North Korea, Egypt, India, Iran, Israel, Pakistan and the United States.
- India, North Korea and Pakistan have yet to sign the Treaty.
- All three have also performed tests since in 1996. India along with Pakistan at the end

of May, 1998, as well as North Korea six times between the years 2006 and 2017.

- The CTBT has not come into force, and is therefore not legally authority.

Treaty on Prohibition of Nuclear Weapons:

- The Treaty on Prohibition of Nuclear Weapons was signed on July 7, 2017.
- The treaty came into force on the 22nd of January, 2021.
- This treaty is the first legally binding international agreement to will eliminate nukes completely.
- The treaty was ratified at the United Nations General Assembly in 2017.
- However, only 120 of the members are signed up to the agreement.
- The nuclear powerhouses around the globe, as well as India have not endorsed the treaty.
- Other major nuclear power that didn't support the treaty included China, US, France, Japan, North Korea, Russia, Pakistan and Israel.

Key Features:

- The treaty bans the making use of nuclear weapon in the territory of the nation.
- The signatories must provide sufficient support to people who are affected by the tests of nuclear weapons.
- They must also perform environmental remediation measures in areas within its authority that have been affected by nuclear weapon tests.
- A state that is a party to the treaty must declare that it has eliminated its prior nuclear weapon program.
- The government should also reveal the existence of nuclear weapons from other countries within its territory.
- If the country has nuclear weapons, they must be removed prior to signing the agreement.
- States with no nuclear weapons must be able to sign a minimum security agreement to the International Atomic Energy Agency.

NSG:

- The Nuclear Suppliers Group (NSG) was established following the blast on the scene

in 1974 from a nuclear weapon by a state that was not a nuclear weapon (India) which proved that nuclear technology used to be used for purpose of peaceful use could be misused.

- It is an association of nuclear suppliers which seeks to aid in the non-proliferation of nuclear weapons by the application of two sets of guidelines for nuclear exports as well as nuclear-related exports.
- The grouping includes 48 participating governments. NSG Guidelines are followed by every member according to country's laws and regulations and practice.
- The NSG decides on consensus.

Australia Group:

- Australia Group (AG) Australia Group (AG) is an informal gathering of countries which, through the harmonization of export controls, strives to ensure that exports don't aid in the development of biological or chemical weapons.
- The establishment of the Australia Group (AG) in 1985 was spurred by the use by Iraq in the use of chemical weapons throughout the Iran-Iraq War (1980-1988) Coordination of National export controls helps Australia Group members to fulfil their obligations under the Chemical Weapons Convention and Biological & Toxin Weapons Convention.
- The Australia Group has a list of 54 compounds recognized as being controlled in international trade.
- This list contains additional items that are not included in the Chemical Weapons Convention.
- It is home to 44 members (including its European Union).
- The members operate in a group consensus.
- The annual meeting takes place the following year in Paris, France. India was a member of the Australia Group (AG) on 19 January 2018.
- The Australia Group decided to admit India as its 43rd Participant in a unanimous decision.

Missile Technology Control Regime (MTCR):

- This is an informal, voluntary collaboration between 35 countries to limit the spread

of unmanned and missile vehicles that can carry more than 500 kg of payloads over 300 kilometers.

- The members are therefore forbidden from selling such missiles or UAV systems under the control of the MTCR to non-members.
- The decisions are made through consensus among all members.
- It was created at the beginning of April in 1987. the G-7 nations - USA, UK, France, Germany, Canada, Italy and Japan.
- The focus of the regime was changed in 1992. goal of the regime was shifted on the development of missiles that allow the transport of all kinds weapon that are of massive destruction (WMD), i.e. chemical, nuclear or biological weapons.
- It isn't a legally binding treaty.
- Therefore, no punitive measures can be taken in case of any violation of the guidelines of the rules.
- This effort to stop the proliferation in ballistic missile systems have been further strengthened through "The International Code of Conduct against Ballistic Missile Proliferation" Also called the Hague Code of Conduct (HCOC) in 2002. It was ratified on November 25, 2002, as a plan to prevent the spread of ballistic missiles. It was signed by the help of 136 UN members, including India.
- India was accepted into the Missile Technology Control Regime in 2016 as the 35th member.
- China has not been a part of this system.

Wassenaar Arrangement:

- The Wassenaar Agreement is an export control system that is voluntary.
- The Arrangement, which was officially established on July 26, 1996 includes 42 members that exchange information about the transfer of conventional weapons as well as technology and products with dual uses.
- Dual-use is the capability of a product technology or product to be used for multiple purposes , typically both for peaceful and military use.
- Wassenaar Arrangement's Secretariat is in Vienna, Austria.
- It is home to 42 states, which include a majority of NATO as well as EU states.
- India was admitted to the Wassenaar arrangement on the 7th of December in 2017 in

the status of 42nd Member.

Topic 26. UN REPORT ON XINJIANG

Important for subject: International Relations

UN Human Rights Office issues an assessment of human rights issues within Xinjiang, China

- The UN Human Rights Office today released an evaluation of human rights violations within the Chinese Xinjiang Uyghur Autonomous Region.
- The evaluation was initiated after grave accusations of violations to human rights committed against Uyghurs along with other predominantly Muslim communities brought to notice of UN Human Rights Office and UN human rights mechanisms since the end of 2017 particularly in relation to the Chinese Government's policies and actions to counter terror as well as "extremism".
- The UN Human Rights Council is an inter-governmental organ in the United Nations system responsible for developing the promotion and protection of human rights across the globe.
- The Council was established through The United Nations General Assembly in the year 2006.
- It replaced the earlier 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 at Geneva, Switzerland.

Members:

- It is comprised by the 47 United Nations Member States which are chosen to the UN General Assembly (UNGA).
- The UNGA will take into consideration the potential candidate States their contribution to the protection and promotion of human rights and their pledges and commitments made in the form of voluntary agreements in this respect.
- The Council's membership is based on an equitable geographical distribution.

Seats are distributed in this manner:

- African States thirteen seats Asia-Pacific States: 13 seats Latin American and Caribbean States: 8 seats Western European and other States Seven seat 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 helps to examine the human rights situation across the entirety of United Nations Member States.
- The Advisory Committee acts in the capacity of the Conseil's "think tank" providing it with expert advice and guidance on human rights issues that are thematic.
- The Complaint Process enables individuals and groups to bring violations of human rights into the notice of Council.

UN Special Procedures for Human Rights:

- They consist by special rapporteurs, representatives, independent experts, and working groups that study, monitor the situation, provide advice and report publicly on specific issues or human rights situation in particular countries.

Topic 27. FROM RIGHTS-BASED TO DUTY-BASED: NDMC RENAMES RAJPATH TO KARTAVYA PATH

Important for subject: Polity

The iconic Delhi Rajpath which runs between Rashtrapati Bhavan to India Gate it is scheduled to be named Kartavya the Path (Path of Duty)

- Rights and obligations are tightly connected and cannot be dissociated from one another.
- Every right comes with a responsibility.
- The state protects rights and enforces them. It is the responsibility for all citizens to respect the State.
- Therefore, a person has both rights and duties.
- Indian Constitution gives its citizens Fundamental Rights and also lists the Fundamental duties to be followed by the citizens.
- Basic rights (Part III of the Constitution). Fundamental obligations (Part IVVA of the Constitution).

What are the fundamental rights?

- Fundamental rights are fundamental human rights that are enshrined in Constitution of India which are made available to all Indian citizens.
- Rights fundamental are recognized by the courts, important with respect to specific conditions.
- Part 3 of Article 12 of the Indian Constitution deal with Fundamental Rights.
- Rights to Equality (Article 14-18) Right to Freedom (Article 19-22) Rights against Exploitation (Article 23-24) Right to Freedom of Religion (Article 25-28) Cultural and Educational Rights (Article 29-30) Right to Constitutional Remedies (Article 32)
- Fundamental rights aren't absolute because they are subject to reasonable limitations. They are important for being subject to the rules of security for the state as well as public morality and decency and good relations with other countries.
- The fundamental rights may be modified by the Parliament through an amendment to the Constitution without changing the structure of the Constitution.
- Some fundamental rights can be granted only to citizens, including Article 15, 16, 19, 29 and 30.

What are the fundamental obligations?

- Fundamental duties are basically that moral obligations are owed to each citizen of a nation.
- There are currently 11 fundamental responsibilities under the Article 51A of Part IV, A of the Constitution.
- The first time, the primary obligation for India was not part in India's Constitution. Indian Constitution.
- The Fundamental duties were added in the year 1976 on the recommendation from the Swaran Singh Committee that was formed by Indira Gandhi, shortly after the declaration of the national emergency.
- The addition of 10 duties was made by the 42nd Amendment and 11th duty was added with the Amendment to the 86th Amendment in 2002.
- Fundamental Duties are not enforceable and therefore cannot be brought before the courts or the laws (non-enforceable).

Topic 28. PREVENTIVE DETENTIONS IN 2021 UP BY 23.7% COMPARED TO YEAR BEFORE

Important for subject: Polity

The number of preventive detentions in 2021 witnessed an increase of more than 23.7 percent over the previous year, with more than 1.1 lakh people detained for preventive reasons, according to the most up-to-date statistics on crime released by the National Crime Records Bureau last month.

- Apart from the National Security Act of 1980, under where the NCRB has recorded information on detentions for preventive reasons is among them the Goonda Act (State and Central) (29,306), Prevention of Illicit Traffic in Narcotic Drugs and Psychotropic Substances Act 1988 (1,331) as well as the category referred to by the NCRB as "Other Detention Acts", in which the majority of detentions were recorded (79,514).
- In accordance with Section 150 of the Code of Criminal Procedure, the police can conduct preventive arrests when they believe that they need to do so in order to prevent commit of "any cognisable offence".
- The detention period can be extended for a period of up to 24 hours if it is necessary "under any other provisions of this Code or of any other law".

Constitutional Provisions:

- Article 22 provides protection for people who are detained or detained.
- Detention can be classified into two kinds of detention, which are preventive and punitive.
- Punitive detention is a way to penalize someone for an offense committed after the trial and conviction by a court.
- Preventive detention, on other hand, refers to the that a person is detained without trial or conviction by the court.
- Article 22 is divided into two parts. The first one deals with normal law cases and the other part is devoted to cases of the law on preventive detention.

Rights Given under Preventive Detention

- The period of detention for a person can not exceed three months, unless an advisory

panel has reported sufficient reasons for the extension of detention.

- The board will comprise judges from an high court.
- The reasons for detention must be made known at the time of detention to those who are in custody.
- But, the information deemed to be contrary to the public interest shouldn't be made public.
- The detenu must be given the chance to make an appeal against any detention orders.
- This protection is provided to both citizens as in foreigners.
- Article 22 also permits the Parliament to issue prescriptions
- The nature and types of situations in which an individual can be held for longer than three months in a preventive detention statute without the approval of an advisory panel;
- The maximum time for which the person is detained in any class of cases under a law on preventive detention and
- The process to be implemented by an advisory panel when conducting an inquiry.
- The Constitution has split the legislative authority with respect to detention prevention between the State legislatures and the legislatures of the parliament.
- The Parliament is the only power to pass an act of detention preventive for reasons that are related to defense, foreign affairs, and to ensure the safety of India.
- The parliament and the state legislatures are able to simultaneously pass an act of preventive detention to address issues that relate to the security of the state, the protection of public order, and the care of the goods and services vital to the general public.

Topic 29. WHO CAN ENTER VARIOUS ZONES IN AN AIRPORT

Important for subject: Polity

National Organization According to a complaint made to Jharkhand Police on September 1 by the airport security chief Suman Anand Godda Parliamentarian Nishikant Dubey, North East Delhi MP Manoj Tiwari, as well as a few others including Dubey's sons were found to have violated "safety standards" by entering the ATC room on the night before and demanding officials give take-off clearances following the time the window for air service was closed for the day.

Who is allowed into any airport located in India?

- Anyone who isn't a traveler with valid tickets requires to have an Aerodrome Entry Permit (AEP) which will be given by the operator of the airport together with the security department responsible for the airport.
- In general, at larger airports where it is the Central Industrial Security Force (CISF) is responsible for security for security, whereas at smaller airports such as Deoghar there is the police of state who is in charge of security.
- The security manager at Deoghar airport is the Deputy Chief for Police Suman Anand who was also the plaintiff in the matter.

What's the ATC at an airport?

- As its name implies is the traffic control room of aircrafts at airports as well as in designated airspaces. It is from there that air traffic controllers on the ground direct the movements of aircraft.
- The controllers make use of equipment like radars to monitor aircraft and also communicate with pilots via radar. ATC complex usually has an atop, which can be connected to a structure.
- The main purpose for ATC is to ATC program is to stop collisions between aircraft within the system as well as to streamline and improve air (air) air traffic.
- Does an AEP authorize the holder to be allowed to enter into the ATC premises?
- It is not a matter of a click It requires prior approval for entry into inside the ATC building.
- AEP application form AEP Application Form, provided through BCAS, the Bureau of Civil Aviation Security (BCAS) It lists 13 areas that an applicant could be able to be able to.
- They include the hall for arrivals, the departures hall as well as Terminal building security hold area, the apron and the ATC building as well as the ATC tower and the cargo terminal and so on.
- However, access authorizations are granted on a need-to-know basis.

Does a member of Parliament have special access rights to the premises of an airport?

- An order from the Ministry of Civil Aviation in October 2007 regarding the important of the "Courtesy towards Members of Parliament at Airports" stipulated that the following "Member of Parliament may be allowed free access in the Terminal building and Visitors Gallery on the basis of MPs Identity Card".
- The order, however, did not specify if MPs could also be allowed to enter ATC premises.
- The same order was issued yet again in January 2020 by the Civil Aviation Ministry in January 2020.

Topic 30. AT VOSTOK-22- WHY IS INDIA NOT JOINING NAVAL DRILL?

Important for subject: Defence

Russia has been holding annual exercises of its military in its eastern region.

- Around 13 nations, including India and China sending troops.
- They also include a maritime part near the islands in dispute of South Kuril, claimed by both Russia as well as Japan.

Who's involved in Vostok-22?

- The countries which have sent military contingents include Algeria, Armenia, Azerbaijan, Belarus, India, Kazakhstan, Kyrgyzstan, China, Laos, Mongolia, Nicaragua, Syria and Tajikistan as per the Russian Ministry of Defence
- In reality, India has only sent its army contingent from its Gorkha Rifles, and will not be participating in the maritime portion of the event.
- This is due to the fact that the first portion of the land-based exercises will be held on Russian military training facilities within Siberia as well as in the Far Eastern Federal District, the maritime component of the exercise will be conducted on the Sea of Okhotsk and the Sea of Japan, near the disputable South Kuril islands.
- Its Foreign Ministry issued a demarche soliciting Russia to relocate the site of its maritime exercises that is what the Russian Embassy in Tokyo was unable to accept, and India's decision not taking part in these naval activities is believed to be a gesture of respect to Tokyo's concerns.

What is the significance of India's participation and what will be the probable impact?

- In sending an armoured contingent of troops to accompany Russian and Chinese troops participating in the current exercises, New Delhi is aiming to deliver a message across four facets.
- The second is the fact that it has a long-standing relationship with Russia regardless of the Ukraine conflict
- The second goal is to demonstrate that there is a balance and no-alignment in the current situation in the current crisis, as India has largely abstained from voting in the United Nations seeking to criticise Russia.
- India participates in regular Indo-Pacific exercises along with its Western partners, such as the Quad and in bilateral exercises, such as that of the India-U.S. "YudhAbhyas" in Uttarakhand in the coming month.
- The exercises will occur shortly after PM Narendra Modi's trip to Uzbekistan to attend the Shanghai Cooperation Organisation (SCO) summit in September. Modi will attend alongside the leaders from Russia, China, Belarus, Kazakhstan, Kyrgyzstan, who have sent contingents to Vostok-22 too.
- Thirdly, by staying clear from maritime exercises, New Delhi has shown both its understanding of Japan's concerns regarding the status quo on the islands that are in dispute and also has emphasized the importance of integrity and sovereignty in territorial matters for India.
- In the end, the message the government is continuing to send will be that they are prepared to work with China on several fronts, even though discussions on military cooperation between China in the LAC (Line of Actual Control) are still in limbo.

Other Exercises of India and Russia:

- Exercise TSENTR 2019 (Multilateral Military Exercise).
- Indra Exercises - Joint Tri-Services (Army, Navy, Air Force) Exercises.
- ZAPAD 2021 (Multilateral Military Exercise).
- India- RUSSIA PASSEX (International Passage Exercise)
- Other Exercises of India and USA: Ex VAJRA PRAHAR of ARMY MALABAR of NAVY RIMPAC (Multilateral) of NAVY RED FLAG 16-1 of Air Force

Topic 31. BLUE WATER NAVY

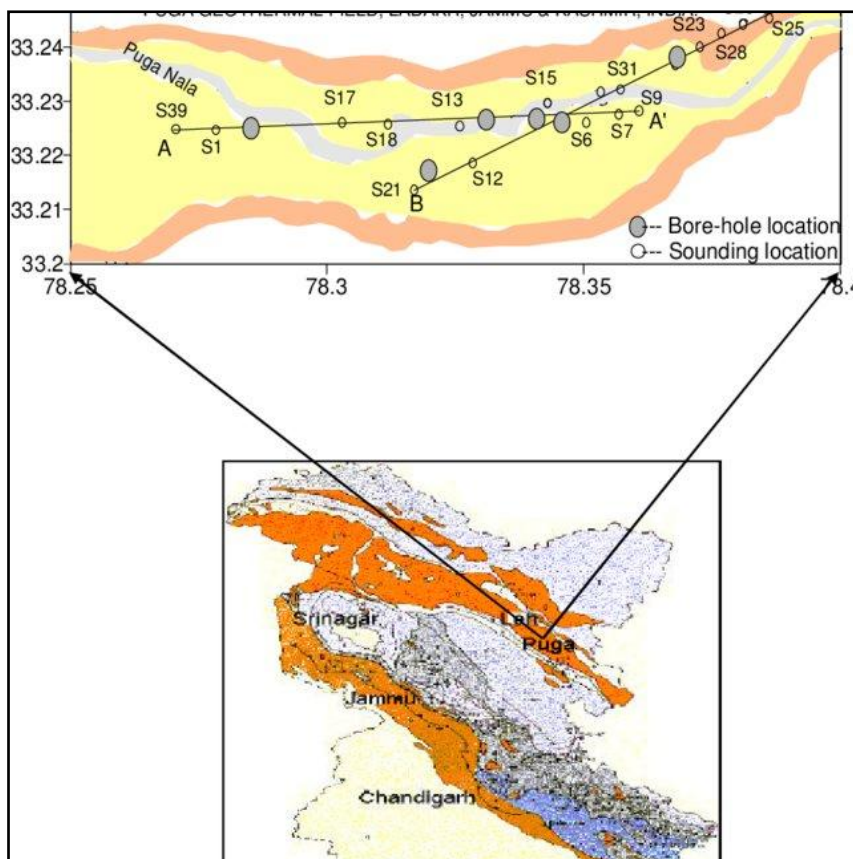
Important for subject: Defence

A navy that is blue-water-based is a marine force capable of working worldwide, mostly over the deep seas of oceans that are open.

- "Blue-water navy" is a term used to describe "blue-water navy" is a maritime geographical term, in contrast from "brown-water navy" (river and close the shore) and "green-water navy" (near to shore).
- The Defence Counterintelligence and Security Agency of the United States has classified the navy of blue water as "a naval force that can carry out a long-term operation in the deep waters of the open oceans.
- A navy that is blue-water lets a nation project power that is far away from the home country. It usually has at least one aircraft carrier.
- Smaller blue-water navies can to send fewer vessels overseas for shorter time periods

Topic 32. 'FREAK INCIDENT': ONGC, ISOR DOWNPLAY GEOTHERMAL FLUID DISCHARGE INTO LADAKH'S PUGA NULLAH

Important for subject: Geography



The Oil and Natural Gas Corporation Energy Centre (OECT) and the Iceland Geosurvey (ISOR), which has signed memorandums understanding (MoU) to develop an energy plant that is geothermal situated in Puga, Ladakh, have described a recent incident on the plant as a freak incident'.

- Geothermal Energy Geothermal energy refers to heat generated by the earth's interior which can be utilized to produce electricity as well as heating up buildings.
- The most common examples of geothermal power are listed below.
- Geysers Lava Fountain Hot Springs Advantages They are renewable; easy to extract in certain cases and less CO₂ emissions than fossil fuels.
- High net energy yield disadvantages It is not accessible everywhere. Geothermal energy harnessing that is contaminated by H₂S creates some water pollution Geothermal energy in India.
- In India the exploration and study of geothermal field began in 1970.
- Geological Survey of India has discovered more than 350 geothermal energy sites throughout the country.
- The most promising one is located in the Puga valley in Ladakh.
- India is home to seven geothermal provinces (viz. Himalayas Sohana, West Coast, Cambay (Gujarat), Godavari, Mahanadi and Son-Narmada-Tapi (SONATA) as well as numerous geothermal hot springs.
- The geothermal energy resources of India have been identified through GSI and a general estimation suggests that there may have a 10 gigawatt (GW) geothermal energy potential according to the Ministry of New and Renewable Energy (MNRE).
- In 2013 the Chhattisgarh government taken the decision to set up the Geothermal Power Plant in the country , at Tattapani located in the Balrampur district.
- The Ministry of Renewable Energy is planning to produce geothermal energy of up to 1000 MW by 2022.
- The most important places for geothermal energy production in India include: the Himalayas, J&K, HP and Sikkim; PUGA hot spring in J&K and Manikaran in HP.
- Sohana: Haryana, Rajasthan. Son-Narmada-Tapi (SONATA) MP Chhattisgarh in Chhattisgarh and Jharkhand; Tattapani spring in Chhattisgarh. Cambay: Mainly Gujarat and certain areas of Rajasthan Godavari: AP Mahanadi: Orissa, Taptapani Spring in Orissa.

- Jalgaon in Maharashtra Bakreshwar in West Bengal Tuwa in Gujarat

Topic 33. WHY DO JETS LEAVE A WHITE TRAIL IN THE SKY?

Important for subject: Geography

Climatology Jets make white tracks or contrails in their wakes similar to the reason why you might be able to feel your breath.

- The humid, hot jet engine exhaust mixes with the surrounding air at higher altitudes, and has a lower vapour pressure and temperature than exhaust gas.
- The water vapour that is contained in the jet exhaust forms a cloud and can freeze. the process of mixing creates clouds that are like the one that your breath produces when it's cold.
- The exhaust of jet engines contains carbon dioxide, sulfur oxides and nitrogen, fuel that is not burned, soot and metal particles as well in the form of water and vapor.
- The soot is a source of condensation for water vapour.
- Particles in the air can provide additional locations.
- Weather Predictions based on the altitude of a plane, as well as the humidity and temperature of the air, the contrails could vary in size, duration and thickness.
- The persistence and nature of jet contrails could help to forecast weather.
- A short-lived, thin contrail indicates low-humidity conditions at higher altitudes, an indication of fair weather. On the other hand, an extensive long-lasting, long-lasting contrail reflect humid air at higher altitudes. It can also be an early sign of an approaching storm.
- Vortices, the mixing gases in the contrail turn relative to the surrounding air.
- These areas of rotating flow are known as vortices.
- (Any rough surface, like the edge of an wing, could create vortical flows in its wake , if it is large enough or the speed of flow swift enough.)
- In rare instances the vortices that trailed them could interact.
- Crow Instability One well-known instance of this Crow Instability Crow Instability creates vortices that cause regular sinusoidal oscillations, and then to join and create vortex rings in the je
- This instability may be caused by turbulent air around it or by local fluctuations in the density of air or temperature and could occur as a result of stratification of the air.

- If the contrails are clear and strong you can see the white streaks turn curly and make rings appear up in the air, similar to smoke rings left by a huge cigar.
- Global Warming Recent research has indicated that the ice clouds that are contained in contrails can cause climate change and cause global warming because they are part of the blanket of gases and moisture within the atmosphere.
- Researchers in this field capitalized on the chance presented by the 11th and 12th of September in the U.S.
- The total cessation of commercial aviation provided the possibility of a controlled sky, without contrails that could be used to measure the environmental impacts of contrails.

Topic 34. A GOLDEN MEMORY OF RAJAMAHENDRAVARAM

Important for subject: Art and Culture



Chalukyan gold coins found.

- The city was built on the initiative of Eastern Chalukya king Raja RajaNerendra along the banks of the Godavari river the city of Rajamahendravaram is still a reminder of the king.

History of Gold Coin in India:

- The first gold coins were introduced through Indo-Greeks from India.
- They introduced gold coins in the year 270 BC.
- Ruler Antochios II was the very first person to introduce gold coins for various reasons economic.
- The Kushanas (1st-4th Centuries CE) were the first dynasty of the subcontinent to

issue an abundance of gold coins.

- Kushan Ruler Vima Kadaphises (2nd Kadaphises), the father of Kanishka was the first to issue a gold coin (Roman denarii) in Roman design.
- Gold coins were made with punch marks, and a number of coins had the image of a bull or Swastika.
- Coins of gold from the ancient India were at their highest during the Gupta Emperors (Guptas issued the most quantity of gold-plated coins in the ancient India) beginning in the 3rd through the 6th century AD.
- It is India's Golden Age, where there was plenty of prosperity everywhere and people lived the great life full of excitement and culture.
- The Gupta coins are art works in themselves. They display the monarchs, not just as warrior kings but also as men who took pride in their elegance.
- So you will see coins that have Samudra gupta, the powerful conqueror seen playing the veena or standing alongside his queen. He is also pictured with his counterparts sporting an axe or bow.
- Gold coins produced in the Post-Gupta (6th-12th the 12th century AD) The period is extremely rare.
- They are revived in the form of Gangeyadeva who was the Kalachuri ruler, who issued the "Seated Lakshmi Coins and were copied by subsequent rulers in gold and in debase form.
- The Bull & Horseman type of coins was the most popular design that was used on coins produced in the Rajput clans.
- In the western region of India Imported coins such as those of the Byzantine solid were commonly used to signal transactions with Eastern Roman Empire.
- The motifs and symbols depicted on South Indian coin issues were limited to dynastic crests like boar (Chalukya) and bull (Pallava) as well as the Tiger (Chola) as well as fish (Pandya and Alupas) Bow and an arrow (Cheras) and the lion (Hoysala) It was the Yadavas were from Devagiri released 'Padmatankas' that had an eight-petalled lotus adorning the reverse and a blank on the.
- Coin legends are based on title or names of the issuers in local languages and scripts.
- Decorated features are not common and divinities are almost non-existent until the late medieval Vijayanagar period (14th-16th - 16th centuries AD).

- The Badami Chalukyas minting coins not of the same standard as to those of northwestern kingdoms.
- The coins carried Nagari along with Kannada legends.
- Pulakeshin II's coins featured an oblique lion with a caparison on the reverse, and an inscription to the reverse.
- The coins were 4 grams.
- They were also known as in oldKannada,"hun" (or honnu) and were divided into fractions like fana (or fanam) and the quarter fana (the modern-day Kannada equivalent is hana, meaning literally "money).
- Gadyana is a gold coin. gadyana is found in the records of the Vijayeshwara Temple at Pattadakal, that later became called varaha (their royal symbol) Eastern Chalukyas Eastern Chalukyas are also known by The Chalukyas of Vengi were a dynasty who ruled the region in South India between the 7th and 12th centuries.
- They were Governors in the Chalukyas of Badami in the Deccan region.
- In the following years, they became an sovereign power and was the ruler of the Vengi region of the present-day Andhra Pradesh until c. 1130 CE.
- They continued to rule the region as feudators of the Cholas up to 1189 CE.
- Seven gold coins dating from the Eastern Chalukya dynasty, including the rule that was Raja Raja Narendra, are an adoring possession in the capital city.
- One coin is large and contains the image of the 'varaha' (boar), an official symbol of the EasternChalukyas.
- The coin is also containing an early text written in Telugu script.
- It is believed to have been made of silver, indicating'some donation' made by the Eastern Chalukyas

Topic 35. THE CONTROVERSY OVER K.K. SHAILAJA'S NOMINATION FOR THE RAMON MAGSAYSAY AWARD

Important for subject: Current Affairs

Prizes The decision of the former Kerala Health Minister K.K. Shailaja to refuse an invitation to be given the highly coveted Ramon Magsaysay Award this year is causing a rift following claims of CPI (M) CPI (M) (Communist Part of India (Marxist)) prohibited Shailaja from accepting the award.

What caused decline in the CPI (M) decrease?

- The party pointed to the 'anti-communist qualifications of former Philippines Presidency as the main reason for rejecting the invitation.
- Magsaysay was Magsaysay was a "staunch anticommunist" who oversaw the defeat of communists (Hukbalahap) in the Philippines from 1950 to 1960, officials of the Left declared.
- "This award is in the name of Ramon Magsaysay who has a history of brutal oppression of the communists in the Philippines," declared CPI(M) chief secretary Sitaram Yechury to news agency PTI.

Who was Ramon Magsaysay?

- born in 1907 Ramon Magsaysay served as the seventh president of the Philippines between December 1953 and March 1957, when his death by a plane crash on Mount Manunggal in Cebu island.
- When he was President Magsaysay was the leader of several agricultural as well as administrative and military activities. His three-year presidency is frequently referred to as the "golden era" in the Philippines.

What is the Ramon Magsaysay Award?

- In the wake of the demise of the President Ramon Magsaysay in 1957, the Rockefeller Brothers Fund (RBF) set up the Ramon Magsaysay Awards in the President's honor in conjunction in conjunction with that of Philippines government.
- Then it was the time that the Fund created an organization called the Ramon Magsaysay Award Foundation, an organization that is non-profit and manages Asia's most prestigious award that recognizes the selfless effort of that has a positive impact on lives.
- The award is regarded as Asia's version to the Nobel Prize, the award was initially awarded to recognize the contributions made to public service, government service as well as journalism, community leadership literature, creative communication and arts, peace and international cooperation.
- The concept of 'emergent leadership' was later added.
- From India, 58 people have won the international award.

- Some of the awardees from the past are Mother Teresa, Satyajit Ray, Verghese Kurien, Arvind Kejriwal, Mahasweta Devi and Aruna Roy.
- What is the strategy of the campaign to defeat the communist rebels?
- Hukbalahap was a communist-led peasant-based organization that was founded in the pre colonial era of economic, political and social inequality.
- It was established in the 1940s in order to defeat in the 1940s against Japanese Army that had invaded the Philippines.
- With the help of U.S. forces, the Philippines government disarmed rebels and detained their leaders.
- Magsaysay began Magsaysay's Economic Development Corps (EDCOR) project to set up colonies for resettlement for the Huks and provided "guns for cash" to ease their return to society, and advocated for a law reforming land.
- As the President Ramon Magsaysay led a massive anti-Huks war called "Operation Thunder-Lightning" that took place in 1954 with the assistance of a newly-organised intelligence and military.

Topic 36. KOCHI TO BOKARO AND KOLKATA TO PUNE: INS VIKRANT AN ALL-INDIA EFFORT

Important for subject: Internal Security

The first Indigenous Aircraft Carrier (IAC) constructed at CSL, the Cochin Shipyard Ltd (CSL) and was officially put into service by the Indian Navy as INS Vikrant on Friday.

- The construction and design of the IAC was officially approved by the state in the month of January. construction of the keel began at the beginning of February.
- The DRDO as well as The Steel Authority of India Ltd jointly developed warship-grade steel.
- It is being used to build all the warships constructed in India
- The steel provided through SAIL for this project is specially DMR plate grades.
- The DMR grade plates were designed in collaboration with SAIL together with Indian Navy and the DRDO's Defence Metallurgical Research Laboratory.
- One of the major characteristics of the Aircraft Carriers Vikrant is its degree of indigenisation. And one of the areas where the term 'atmanirbharta' can be visible is the structure of the vessel the unique DMR steel grade for Vikrant was provided by

the steelmaking giant of India. Steel Authority of India Limited (SAIL)

- The steel used from SAIL for this project is specially DMR plate grades.
- The DMR grade plates were designed through SAIL working in conjunction with Indian Navy and the DRDO's Defence Metallurgical Research Laboratory.
- These DMR plates in Grade 249 A was used to construct the interiors of the vessel and hull and Grade 249 B was used for the flight deck of the warship.
- SAIL delivered the entire supply of special steel, with the exception bulbs bars that came from its steel factories integrated in Bhilai, Bokaro and Rourkela
- The 5 meters long and 61.6 meters wide INS Vikrant is capable of displacing approximately 43,000 tonnes. It can reach a max speed of 27 knots, and an the endurance of 7500 miles.
- The ship is equipped with approximately 2,200 compartments that are intended for the crew of approximately 1,600 comprising female captains and officers.
- In the event of a successful launch, the INS Vikrant places India into the top group of nations adept at designing and building aircraft carriers. The others are those of the US, Russia, UK, France and China.

Topic 37. TUR

Important for subject: Agriculture

The red gram is known for its richness in protein The red gram's seed coat contains six times the calcium content of milk.

- Tur, also known as arhar, redgram, or the pigeonpea is an essential protein source and also abundant in calcium, too.
- A 100-gram sample of seed coat contains six52 milligrams of calcium compared to 120 mg in 100 milliliters of milk.
- Human bodies require between 800-1,000 mg of calcium every day. In the present, since the seed coat is removed during the process of processing the seeds of the pulse it could be an important ingredient in infant nutritional and mineral supplements, as per the research conducted by scientists from the ICRISAT's Gene Bank
- India is the biggest exporter, importer and consumer of pulses worldwide.
- India represented 62% of the world's total pulses production during 2019-20.
- In the past five months, India has increased pulses production from 140 tonnes to over

250 lakh tonnes.

- While pulses are grown during the Kharif in the Kharif and Rabi season, Rabi pulses contribute more than 60% of the total harvest.
- Gram is the main pulse with a share of about 40 percent of the overall production, and followed by Tur/Arhar, which is 15 to 20 percent and Urad/Black Matpe, and Moong with around 8-10 percent each.
- Madhya Pradesh, Maharashtra, Rajasthan, Uttar Pradesh and Karnataka are among the top five states producing pulses.
- The productivity for pulses is 7.64 kilograms per hectare. In the wake of the Green Revolution, which promoted the cultivation of wheat and rice using external inputs and the latest kinds of seeds, the pulses got moved into marginal areas.
- This caused a decrease in productivity as well as land degradation.
- So, pulses are cultivated on margins and the sub marginal areas mostly under irrigation conditions.

Tur:

- Tur is mostly produced in the semi-arid regions in South Asia, Central America and Africa.
- India is the biggest producer and consumer in the world with 82% of cultivation and 77 per cent of the production.
- India produces about 17 lakh hectares per year and produces approximately 37.50 tons.
- The next two are Myanmar (6.76 lakh tonnes) and Malawi (4.30 lakh tonnes).

Topic 38. CCRAS 'SPARK' PROGRAM TO SUPPORT INNOVATIVE RESEARCH IN AYURVEDA

Important for subject: Government schemes

The Central Council for Research in Ayurvedic Sciences (CCRAS) has come up with a unique idea to aid in the research of brilliant young minds across the country by establishing an award-winning Studentship Program that is designed for Ayurveda Research Ken (SPARK) for Ayurveda (BAMS) students that are enrolled in recognized Ayurveda colleges.

- SPARK Program was developed by CCRAS. CCRAS will encourage the ingenious

ideas of the young generation and encourage the practice of scientific evidence-based research in the area of traditional medicine.

- Traditional Medicine SPARK program is specifically designed to help students to develop an appreciation for research, and also to help support and encourage the research they are pursuing.
- SPARK's mission is to encourage studies of students who are undergraduate students in Ayurveda Colleges all over India.
- The process of applying of SPARK will be entirely online
- The chosen fellows will receive an aid in the amount of Rs.50, 000 in the fellowship.
- Initially, there will be 100 seats for each session.
- Additional details can be found through the portal for program registration.

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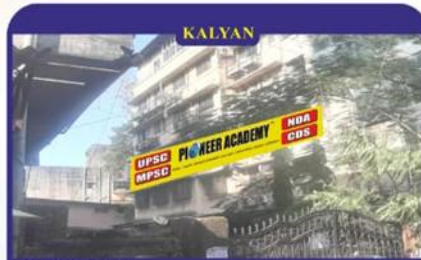
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