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Success is born of action...

Topic 1. Tussle between Central vs Union Government

Importance for Prelims: Polity

Recently, an argument erupted over the new DMK government concerning the govt. of Prime Minister Narendra Modi because the 'union government' rather than 'central government'.

- Central v/s Union Government Justice (retd) K Chandru had got wind that quite seventy years when Independence, there's no authorised Tamil translation of the Constitution of Asian country.
- The question within the 'union or centre' discussion is concerning the character of the Indian state.
- In the govt. of Asian country Act, 1935, provinces had additional power and also the Viceroy had solely the minimum however the Indian constitution modified this equation, and also the central was created additional powerful.
- The actual power is unconditional with the Union of Asian country all told respects.
- The Tamil Nadu government expressed that the Constitution describes Asian country as a "Union of States" and so the best regard to the Centre would be the "Union Government".
- Constitutional Provisions for Central or Union Government Article 1(1) of the Constitution of {india|India|Republic of Asian country|Bharat|Asian country|Asian nation} says that India, that's Republic of India, shall be a Union of States.
- The chairman of the drafting committee of the Indian Constitution had used the planet 'Union' because: The Indian federation wasn't the results of AN agreement by the units; and also the element units had no freedom to break up from the federation.

- The Indian Constitution perpetually uses the word “Union” to explain the whole country yet because the government that administers it.
- Article fifty three reads that the chief power of the Union shall be unconditional within the President. The ‘Central government’ could be a term not employed in the first Constitution as glided by the Constituent Assembly.
- The Preamble clearly demonstrates the federal kind, spirit associated content of the Indian Constitution with an open acknowledgement of the consolidative tendencies and also the quasi-federal characteristics within the actual operating of the Constitution.
- The seventh schedule (Article-246) of the Constitution contains the Union List with ninety seven things, State List with sixty six things and synchronic List with forty seven things.
- Reasons to be used of Central or Union Government country Parliament passed the regulation Act, appointing a governor to manage all of British Asian country.
- The administration that the governor ran was typically delineated because the “Central Government” so as to differentiate it from the “provincial governments”.
- The Government of India Act 1919 introduced a rudimentary form of selfgovernment and federalism in India and the powers were split between “central” and “provincial” subjects.
- The Government of India Act 1935 proposed a merger between British India and the princely states that the term “Federation of India” was first used.
- The modern term “Union” was first officially used in 1946 by the Cabinet Mission Plan.

Topic 2. National Disaster Management Authority

Importance for Prelims: National Organisations



The Supreme Court directed the National Disaster Management Authority (NDMA) to border tips for payment of ex-gratia compensation to relations of persons United Nations agency succumbed to COVID-19.

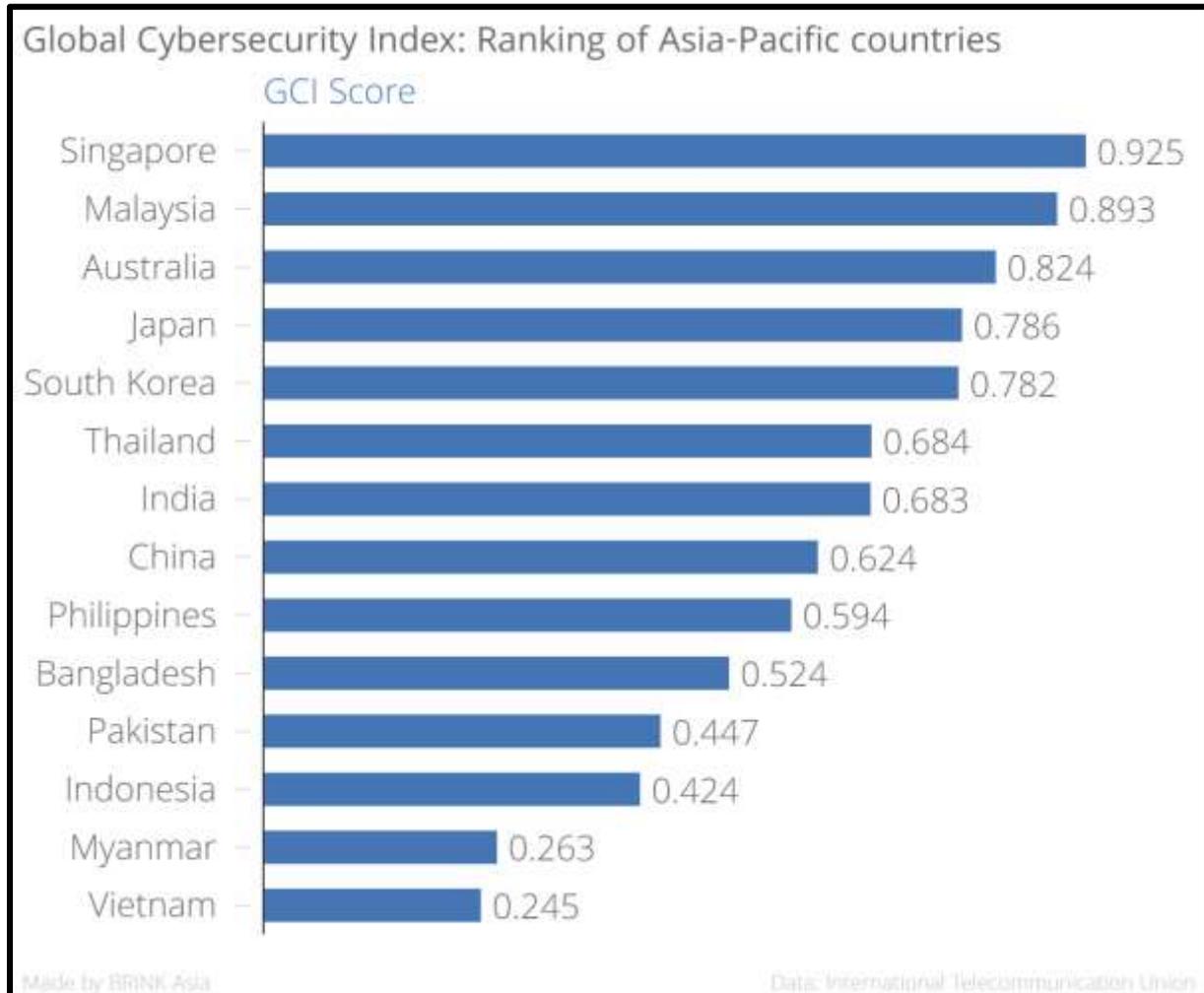
- It conjointly directed the NDMA to determine among six weeks ex-gratia quantity that may be paid to the relations of these United Nations agency died because of the infection.
- The court's order came in response to a plea seeking ex-gratia of 4 large integer rupees every to the families of all people who succumbed to the virus.
- **NDMA: Parent body:** Ministry of Home Affairs.

Primary Objective:

- To coordinate response to natural or synthetic disasters and for capacity-building in disaster resiliency and crisis response.
- **Origin:** NDMA was established through the Disaster Management Act enacted by the govt. of Republic of India in 2005.
- **Organisation setup:** The Prime Minister is that the ex-officio chairwoman of the NDMA, United Nations agency chairs a 9-member board.
- The remainder of the board consists of members nominated based on their expertise in areas such as, planning, infrastructure management, communications, meteorology etc.
- The day-to-day management of the agency is overseen by the office of the Vice Chair.

Topic 3. Global Cybersecurity Index

Importance for Prelims: International Reports



According to a global organization report discharged, Asian country has jumped thirty seven places to tenth position within the international Cyber Security Index (GCI) 2020.

- **About the index:** The GCI could be a composite index created, analyzed and printed by the International Telecommunication Union (ITU), a specialised agency of the global organization.
- It measures the commitment to cybersecurity of its 194 member countries to lift cybersecurity awareness.
- The latest report is that the fourth GCI edition by the ITU, the primary version of that was launched six years past.

- Each country's development or engagement is assessed on 5 pillars – (i) Legal measures, (ii) Technical measures, (iii) structure measures, (iv) capability development, and (v) Cooperation- then aggregate into a composite score.
- Global rankings the highest rank within the GCI was achieved by the U.S. with a score of a hundred.
- The United Kingdom and Saudi Arabia finished second, tied for next place with a score of ninety nine.54.
- In the Asia Pacific region, South Korea and Singapore square measure on high with a score of ninety eight.52, that ranks fourth globally.
- Other countries at the highest of the index embrace Russia, the United Arab Emirates and Asian country (98.06) at fifth place, Republic of Lithuania at sixth, Japan at seventh and North American nation, France and Asian country at the following positions.
- Among different countries, Turkey (97.49) was graded eleventh, Deutschland (97.41) at thirteenth, China (92.53) at thirty third and Israel (90.93) at thirty sixth position.
- Asian country's ranking India graded tenth within the fourth edition of the world Cyber Security Index 2020 (GCI), a big jump of thirty seven places from its previous GCI rank in 2018. Asian country conjointly ranks fourth within the Asia-Pacific region.

Topic 4. BharatNet implementation through Public Private Partnership (PPP) Model

Importance for Prelims: Governance

Recently, the Union cupboard has accorded the approval for revised implementation strategy of BharatNet through Public personal Partnership mode.

- The BharatNet programme can currently extend upto all inhabited villages on the far side Gram Panchayats (GPs) within the sixteen states of the country.
- The revised strategy additionally includes creation, upgradation, operation, maintenance and utilization of BharatNet by the concessioner WHO are going to be designated by a competitive international bidding method.
- The calculable most viability gap funding approved for the on top of uvulopalatopharyngoplasty model is Rs. 19,041 crores.
- The States lined below the approval square measure Kerala, Karnataka, Rajasthan, Himachal Pradesh, Punjab, Haryana, Uttar Pradesh, Madhya Pradesh, province, Assam, Meghalaya, Manipur, Mizoram, Tripura, Nagaland and Arunachal Pradesh.
- Significance of uvulopalatopharyngoplasty Model for BharatNet it'll leverage personal Sector potency for operation, maintenance, utilization and revenue generation.
- It is predicted to lead to quicker roll out of BharatNet.
- The designated concessioner (Private Sector Partner) is predicted to supply reliable, high speed broadband services as per pre-defined Services Level Agreement (SLA).
- The extension of reach of BharatNet to all or any inhabited villages with reliable, quality, high speed broadband can alter higher access of e-services offered by varied Central and regime agencies.

- It will alter on-line education, telemedicine, ability development, e-commerce and alternative applications of broadband.
- It is anticipated that revenue are going to be generated from totally different sources as well as proliferation of broadband connections to people & establishments, sale of dark fibre, Fiberization of mobile towers, e-commerce etc.
- The proliferation of broadband in rural areas can bridge the rural-urban divide of digital access and accelerate the action of Digital Bharat.
- The penetration and proliferation of broadband is additionally expected to extend direct and indirect employment and financial gain generation. BharatNet Project.
- It may be a project of national importance to determine a extremely climbable network infrastructure accessible on a non-discriminatory basis.
- It aims to supply on demand, reasonable broadband property of two Mbps to twenty Mbps for all households and on demand capability to any or all establishments.
- It is being funded by Universal service Obligation Fund (USOF).
- It may be a Centre-State cooperative project, with the States causative free Rights of means for establishing the glass fibre Network.
- The Bharat Broadband Network Limited (BBNL) is a special purpose vehicle for management, establishment, and operation of BharatNet.

Topic 5. Enforcing Contracts Portal

Importance for Prelims: Governance

Recently, the Ministry of Law and Justice has launched the “Enforcing Contracts Portal”.

- The Doing Business Report of IBRD cluster benchmarks business rules across 191 economies of the globe.
- The easy Doing Business (EoDB) index could be a ranking system that is a sign of associate economy’s position relative to it of alternative economies across eleven areas of business regulation.
- The “Enforcing Contracts” indicator measures time and price to resolve the same business dispute yet as a series of fine practices within the judiciary. regarding imposing Contracts Portal It aims to market easy doing business and improve ‘Contract social control Regime’ in India. it's visualised to be a comprehensive supply of knowledge concerning the legislative and policy reforms being undertaken on the “Enforcing Contracts” parameters. Its objective is to supply quick access to latest data on business cases in Dedicated business Courts of urban center, Mumbai, Bengaluru and Calcutta. It aims to supply access to repository of business laws for prepared reference.

Topic 6. Q4 current account deficit at 8.1 billion on lower receipts

Importance for Prelims: Economics

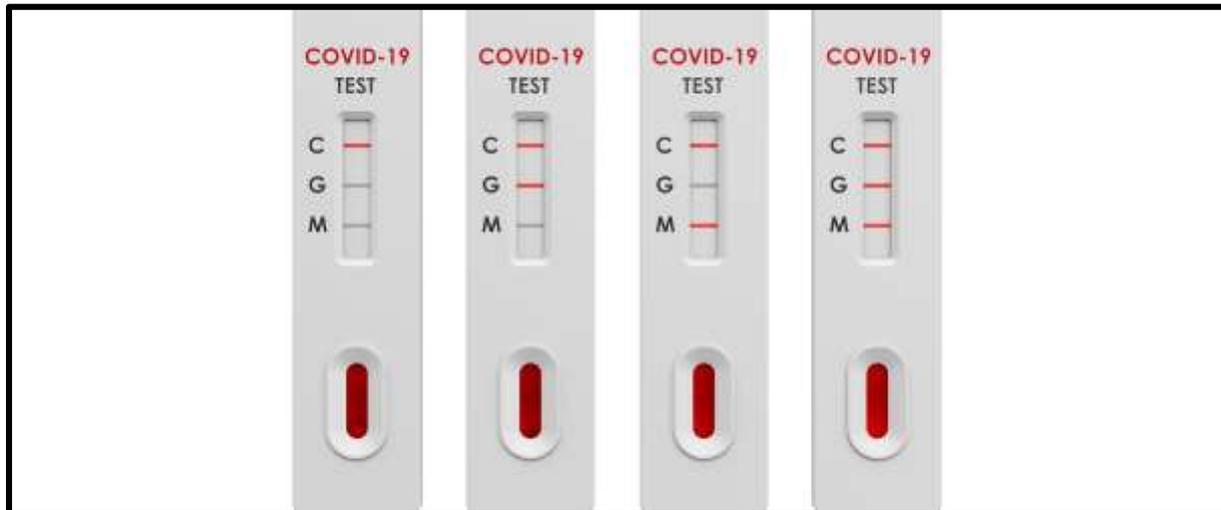
India's accounting balance recorded a deficit of \$8.1 billion (1% of Gross Domestic Product – GDP) within the quarter finished March 2021 (Q4FY21) on the rear of the next deficit and lower web invisible receipts, the depository financial institution of Asian country aforesaid in an exceedingly unleash on Wed.

- Current Account Deficit the present account measures the flow of products, services, and investments into and out of the country.
- It represents a country's foreign transactions and, just like the capital account, could be a part of a country's Balance of Payments (BOP).
- There could be a deficit in accounting if the worth of the products and services foreign exceeds the worth of these exported.
- A nation's current account maintains a record of the country's transactions with other nations that includes net income, including interest and dividends, and transfers, like foreign aid.
- **It comprises of following components:** Trade of goods, Services, and Net earnings on overseas investments and net transfer of payments over a period of time, such as remittances.
- It is measured as a share of value.
- The formulae for calculative CAD is: $\text{accounting} = \text{balance} + \text{web current transfers} + \text{income abroad}$ $\text{balance} = \text{Exports} - \text{Imports}$ a rustic with rising CAD shows that it's become noncompetitive, and investors might not be willing to take a position there.
- In India, the present Account Deficit might be reduced by boosting exports and curb non-essential imports like gold, mobiles, and physics.
- Current Account Deficit and monetary Deficit (also called "budget deficit" could be a scenario once a nation's expenditure exceeds its

revenues) area unit along called twin deficits
and each typically reinforce one another, i.e., a high financial deficit results
in higher CAD and contrariwise.

Topic 7. Covid 19 Antibody Test

Importance for Prelims: Science & tech



Covid-19 protein take a look at to not be accustomed value immunity, says doctors

- There are 2 kinds of take a look at which will verify if one has developed antibodies against a virus: a laboratory test, requiring a attention skilled to require a blood sample from the patient, that is distributed to a science lab for results; or a fast point-of-care take a look at, that uses finger-prick blood and might be taken reception.
- protein take a look at/Serological Test Antibody tests solely sight antibodies the system develops in response to the virus, not the virus.
- Anti-bodies will show up between 9-28 days when the infection has set in.
- Antibodies are proteins that facilitate fight infections & will offer protection once morest obtaining that unwellness again. Antibodies are disease-specific.
- For example, contagious disease antibodies can defend you from obtaining contagious disease if you're exposed thereto once more, however they won't defend you from obtaining epidemic parotitis if you're exposed to epidemic parotitis.

- Serology tests are crucial for the management & police work of the unwellness. These tests provide insight into the virus's incidence, together with symptomatic or symptomless infections. Validity of the antibodies a number of the antibodies are short term & some are long run. IgM (Immunoglobulin M) antibodies develop ahead of time in an infection whereas immunoglobulin G (Immunoglobulin G) antibodies against severe acute respiratory syndrome CoV-2 are largely found when somebody has recovered from the infection.
- Antibodies could also be detected in our blood for many weeks when we live through COVID-19. though these antibodies may offer some immunity to the COVID-19 virus, there's presently not enough proof to understand however long these antibodies last.

Topic 8. World Gold Council

Importance for Prelims: International Organisations



The World Gold Council aforesaid demand for gold loans, each through banks and non-banking monetary corporations, has full-grown in response to the economic impact of the pandemic.

- About World Gold Council: it's the market development organisation for the gold trade.
- It works across all elements of the trade, from gold mining to investment, and their aim is to stimulate and sustain demand for gold.
- It is Associate in Nursing association whose members comprise the world's leading gold mining corporations.
- It helps to support its members to mine during a accountable means and developed the Conflict Free Gold normal. Headquartered within the UK, they need offices in Asian nation, China, Singapore, Japan and also the us.

Topic 9. ZyCov-D will be the world's first DNA vaccine against infection with SARS-CoV-2

Importance for Prelims: Science & tech

DNA-BASED PROTECTION

- Unlike other Covid-19 vaccines available in the market, ZyCoV-D shots are administered painlessly as they are given intradermally and not intramuscular.
- ZyCoV-D vaccines can be stored easily in normal refrigeration at 2 to 8 degrees temperature
- The vaccine is to be given in three doses (0-28-56 days)
- Company to price the ZyCoV-D on lines with other Covid-19 vaccines in India



- Zydus plans to double the production capacity after launch
- ZyCoV-D is India's first indigenously developed DNA vaccine candidate against Covid-19

Ahmedabad-based Zydus Cadila has applied to Central medication normal management Organisation (CDSCO), the national medication regulator, seeking emergency use authorisation (EUA) for ZyCov-D, its Covid-19 immunizing agent.

- ZyCoV-D, designed and developed by Zydus (a pharmaceutical company) with support from the Department of Biotechnology (DBT).
- ZyCoV-D, a inclusion polymer immunizing agent, comes underneath the immunizing agent Discovery Programme supported by the Department of Biotechnology underneath the National Biopharma Mission.

- Plasmids are unit circular polymer (DNA) vectors which will be used as vaccines to stop numerous varieties of diseases.
- **Pre-Clinical Phase:** it absolutely was found to initiate a robust immunologic response in multiple animal species like mice, rats, guinea pigs and rabbits.
- The antibodies created by the immunizing agent were able to neutralize the wild sort virus indicating the protecting potential of the immunizing agent candidate.
- No safety considerations were discovered in repeat dose by each contractor (directly into muscles) and connective tissue (superficial injection into skin) routes of administration.
- **polymer immunizing agent Platform:** the event of ZyCov-D has established the DNA immunizing agent platform within the country that is straightforward to deploy, temperature stable, and systematically manufacturable- so lowering prices and enhancing the effectiveness of a immunizing agent.
- It provides easy producing the immunizing agent with least safety necessities.
- It has shown abundant improved immunizing agent stability and lower cold chain necessities creating it simple for transportation to remote regions of the country.
- Furthermore, the platform will be speedily wont to modify the immunizing agent during a number of weeks just in case the virus mutates.
- National Biopharma Mission it's Associate in Nursing industry-academia cooperative mission for fast biopharmaceutical development within the country.
- It was launched in 2017 at a complete price of Rs. 1500 large integer and is five hundredth co-funded by United Nations agency loan.

- It is being enforced by the Biotechnology trade analysis help Council (BIRAC). BIRAC could be a Public Sector Enterprise, got wind of by the Department of Biotechnology (DBT), Ministry of Science & Technology.
- Under this Mission, the Government has launched Innovate in India (i3) programme to create an enabling ecosystem to promote entrepreneurship and indigenous manufacturing in the biopharma sector.
- **Objectives:** Development of vaccines, medical devices, medicine and biotherapeutics besides, strengthening the run capability and building technology transfer capabilities within the country.

Topic 10. Turkey should mitigate factors aiding growth of sea snot

Importance for Prelims: Environment / IR



There has been growing environmental concern in Turkey over the buildup of ‘sea snot’.

Background

- It may be a slimed layer of gray or inexperienced sludge within the country's seas, which may cause substantial injury to the marine scheme.
 - Turkey's ocean of Marmora, that connects the Euxine Sea to the sea, has witnessed the most important occurrence of 'sea snot'.
 - The sludge has additionally been noticed within the abutting Black and Aegean seas.
 - The thick slimed layer of organic matter, that sounds like a viscous, brown and foamy substance, has unfold through the ocean south of city and additionally blanketed harbours and shorelines.
- What is a ocean Snot?

- It is marine mucilage that's shaped once protoctist square measure full with nutrients as a results of pollution combined with the results of global climate change.
- The nutrient overload happens once protoctist feast on heat weather caused by heating.
- The development of pollution adds to the matter. The production of flora caused by global climate change and also the uncontrolled merchandising of family and industrial waste into the seas has crystal rectifier to the ocean Snot.
- The merchandising of sewerage within the ocean along side rising temperatures is inflicting the crisis.
- A 'sea snot' occurrence was initial recorded within the country in 2007 and it absolutely was additionally noticed within the sea close to Hellenic Republic.
- Sea of Marmara It is a small inland sea that is completely bordered by the transcontinental nation of Turkey.

- It has been named after the Turkish Island of Marmara, whose name was derived from the Greek word Marmaron which means “marble”.
- It separates Asian Turkey from European Turkey.
- In the northeast, it is connected to the Black Sea via the Bosphorus Strait, whereas in the southwest, it is linked with the Aegean Sea via the Dardanelles Strait.

Topic 11. Erratic monsoon affects Kharif sowing

Importance for Prelims: Agriculture

Crop	2021	2020
Rice	36.15	34.62
Pulses	14.58	17.51
Arhar	5.57	8.83
Uradbean	2.17	2.19
Moongbean	5.23	5.13
Kulthi	0.13	0.14
Other pulses	1.48	1.23
Coarse Cereals	34.28	41.55
Jowar	1.45	2.14
Bajra	7.01	11.02
Ragi	0.07	0.12
Small millets	3.47	9.17
Maize	22.28	19.1



Kharif sowing has started on a sluggish note despite monsoon delivering ten % surplus in Gregorian calendar month.

- Kharif crops are grown with the onset of monsoon in different parts of the country and these are harvested in September-October.
- Important crops mature throughout this season are paddy, maize, jowar, bajra, tur (arhar), moong, urad, cotton, jute, groundnut and soyabean. A number of the foremost vital rice-growing regions are Assam, province, coastal regions of Odisha, province, Telangana, Tamil Nadu, Kerala and geographic area, notably the (Konkan coast) in conjunction with province and province. Recently, paddy has conjointly become a vital crop of geographic region and Haryana.
- In states like Assam, West Bengal and Odisha, three crops of paddy are grown in a year.
- These are Aus, Aman and Boro.

Topic 12. LEAF Coalition proposal is a step forward in saving forests

Importance for Prelims: Environment

LEAF coalition are going to be one in all the biggest ever public-private efforts to shield tropical forests and shall mobilize a minimum of USD one billion in funding to countries committed to protective their tropical forests.

- Lowering Emissions by fast Forest Finance Coalition it's a collective of the governments of the USA, uk and Kingdom of Norway.
- As it's a public-private effort, so additionally supported by multinational companies (TNCs) like Unilever plc,
- Amazon.com, Nestle, Airbnb etc.
- A country willing to participate would wish to fulfil sure planned conditions set down by the Coalition.
- **Financial Support:** The results-based funding model are going to be employed in LEAF.
- The model weighs on work by the Environmental Defense Fund over twenty years, unitedly with autochthonal communities, forest peoples, Brazilian and United States NGOs, and alternative partners, to shield the Amazon and tropical forests globally.
- Performance will be measured against the TREES Standard (The REDD+ Environmental Excellence Standard)

Topic 13. 7th edition of IONS

Importance for Prelims: International Relations

Recently, the seventh edition of ocean armed service conference (IONS) was hosted by the French Navy at Réunion Island.

- It may be a biennial event that was planned by the Indian Navy in 2008.

About:

- The IONS may be a voluntary and inclusive initiative that brings along navies of ocean Region littoral states to extend maritime co-operation and enhance regional security.
- It conjointly serves to develop a good response mechanism and humanitarian help and disaster relief (HADR) against natural disasters.
- The chairmanship of IONS has been held by India (2008-10), UAE (2010-12), South Africa (2012-14), Australia (2014-16), Bangladesh (2016-18) and Islamic Republic of Iran (2018-21).
- France assumed the Chairmanship in June 2021 for a two-year tenure.

Members:

- IONS includes twenty four member nations that bit or lie inside the ocean Region (IOR), and eight observer nations.
- The members are geographically sorted into the subsequent four

sub regions:

- **South Asian Littorals:** Asian country, India, Maldives, Pakistan, Seychelles, land and uk (British ocean Territory)
- **West Asian Littorals:** Iran, Oman, Asian nation and United Arab Emirates
- **East African Littorals:** France (Reunion), Kenya, Mauritius, Mozambique, South Africa, and African nation.
- **South East Asian and Australian Littorals:** Australia, Indonesia, Malaysia, Myanmar, Singapore, Siam and Timor-Leste.

Topic 14. Unified District Information System for Education Plus (UDISE+)

Importance for Prelims: Governance

Recently, the Union Education Minister has released the Report on Unified Information System for Education Plus (UDISE+) 2019-20 for School Education in India.

What is UDISE+?

- It is Unified system for Education and for varsity Education.
- It has been developed by Department of faculty Education and acquirement (DoSEL) and introduced with reference year 2018-19.
- It is hosted within the server of the National scientific discipline Centre (NIC) so as to eliminate the issues associated with coordination, direction, observance and security.
- It is one among the biggest Management info Systems on faculty Education initiated in in 2012-13 desegregation DISE for elementary and pedagogy.
- It could be a abundant improved version compared to the offline U-DISE application such as: A centralized module has been developed for generating UDISE codes for all States/UTs; Real time checking and rectification/ revision of faculty details; knowledge Capture of UDISE+ DCF through numerous User Friendly Application User Interfaces from faculty/CRC/Block level with School knowledge Certification; knowledge certification from all level of users, ranging from the principal/ teacher-incharge of the college, followed by involved State/UT officers; and knowledge visualisation Dashboard to visually gift numerous key performance indicators (KPI) and metrics of faculty Education.

Topic 15. Essential Commodities act

Importance for Prelims: Legislations

In an endeavor to arrest the soaring costs of pulses, the Union government on Fri directed the States to impose stock limit on all pulses except moong until October thirty one.

- Essential Commodities Act The ECA was enacted manner back in 1955.
- It has since been utilized by the govt to control the assembly, provide and distribution of an entire host of commodities it declares ‘essential’ so as to form them accessible to shoppers at honest costs.
- The list of things below the Act embrace medicine, fertilisers, pulses and edible oils, and crude and crude merchandise.
- The Centre will embrace new commodities as and once the necessity arises, and take them off the list once true improves. below the Act, the govt can even fix the utmost retail value (MRP) of Associate in Nursingingy prepackaged product that it declares an “essential commodity”.

How it works?

- If the Centre finds that a definite trade goods is briefly provide and its value is spiking, it will inform stock-holding limits thereon for a nominative amount.
- The States act on this notification to specify limits and take steps to confirm that these area unit adhered to.
- Anybody mercantilism or dealing in an exceedingly trade goods, be it wholesalers, retailers or perhaps importers area unit prevented from reposition it on the far side a definite amount.
- A State will, however, opt for to not impose any restrictions. however once it will, traders ought to right away sell into the market any stocks control on the far side the mandated amount.

Topic 16. India sees consensus by Oct. on OECD-G20 global tax deal

Importance for Prelims: International Relations

Recently, Bharat has declared its connection below OECD/G20 inclusive Framework aboard Erosion and Profit Shifting (BEPS).

- OECD/G20 Inclusive Framework on Base Erosion and Profit Shifting (BEPS)
- **It is a tax deal which consists of two components:** Pillar One which is about reallocation of additional share of profit to the market jurisdictions; and Pillar Two consisting of minimum tax and subject to tax rules The framework brings together over 135 countries and jurisdictions to collaborate on the implementation of the BEPS Package.
- The BEPS package provides fifteen Actions that equip governments with the domestic and international instruments required to tackle minimization.
- Significance of OECD/G20 inclusive Framework on BEPS It permits interested countries and jurisdictions to figure with OECD and G20 members on developing standards on BEPS connected problems and review and monitor the implementation of the BEPS Package.
- It can actively monitor the implementation of all the BEPS Actions and reports annually to the G20 on this progress.
- All countries and jurisdictions connection the framework can participate within the review method, that permits members to review their own tax systems and to spot and take away components that create BEPS risks. Base Erosion & Profit Shifting (BEPS) In Gregorian calendar month 2013, the G20 Leaders supported the formidable and comprehensive BEPS Action arrange, developed with OECD members.
- It refers to tax coming up with methods utilized by international enterprises that exploit gaps and mismatches in tax rules to avoid paying tax.

- It is of major significance for developing countries because of their significant reliance on company taxation, notably from international enterprises.

Topic 17. Retail and wholesale traders under the MSME

Importance for Prelims: Economy



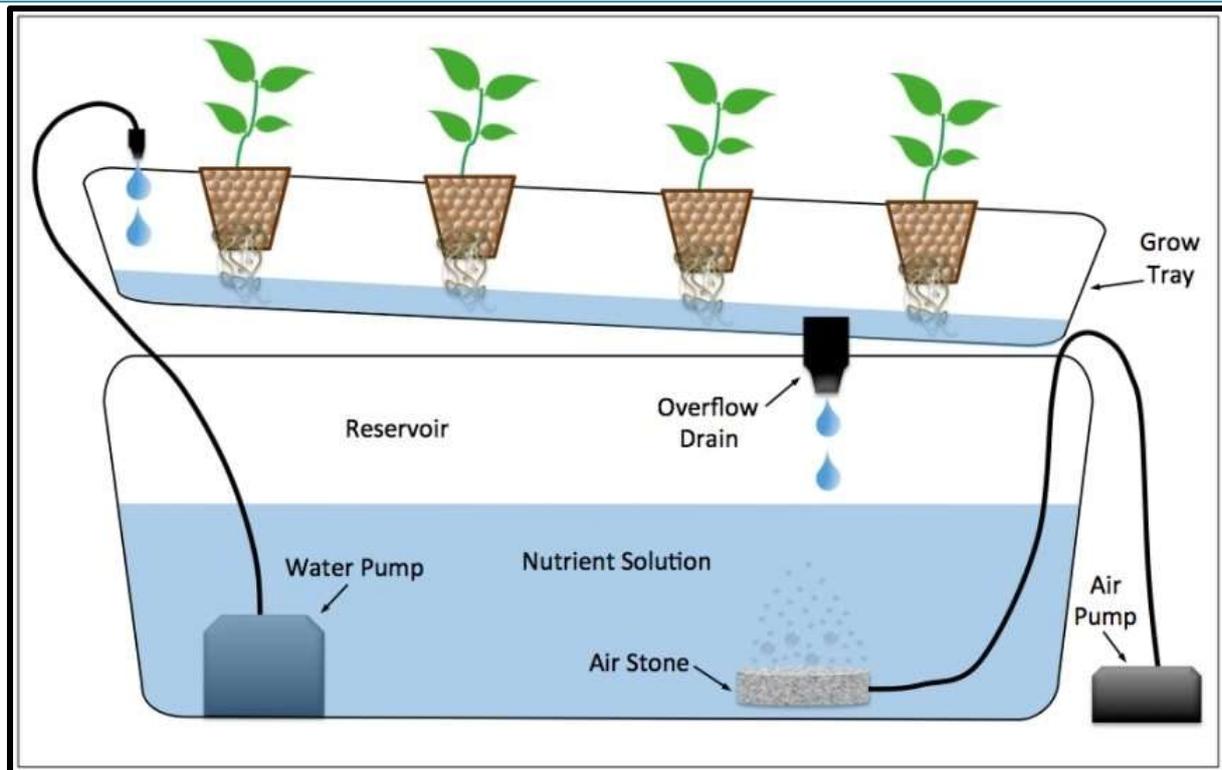
Retail and wholesale traders underneath the MSME (micro, tiny and medium enterprises) classification creating them eligible for priority sector advances by banks and money establishments per tally pointers.

- The revised PSL norms area unit aimed toward orienting a similar with “emerging national priorities and produce deceiver specialize in comprehensive development.
 - Retail and wholesale trade were disregarded of the compass of MSME.
 - Under the revised pointers, the Ministry of MSME has issued associate degree order to incorporate retail and wholesale trade as MSME and lengthening to them the advantage of priority sector disposal adding that this is able to profit two.5 large integer retail and wholesale traders, and that they can currently be able to register on the Udyam Registration Portal.
- Priority sector disposal
- It refers to those sectors or areas of the economy which can not get timely and adequate credit.

- The tally needs Indian banks to portion sure portion of their overall disposal for sectors mentioned underneath PSL.
- These areas of focus for PSL embody Agriculture, Micro, tiny and Medium Enterprises (MSME), credit, Education, Housing, Social Infrastructure, Renewable Energy. banking company of Asian country has, from time to time, issued variety of pointers to banks on Priority Sector disposal.
- These were last reviewed in April 2015 and for urban and cooperative banks in might 2018. PSL pointers area unit applicable to all or any domestic regular business banks (excluding Regional Rural Banks and little Finance Banks) and foreign banks with twenty branches and higher than.

Topic 18. Hydroponics

Importance for Prelims: Environmental Science



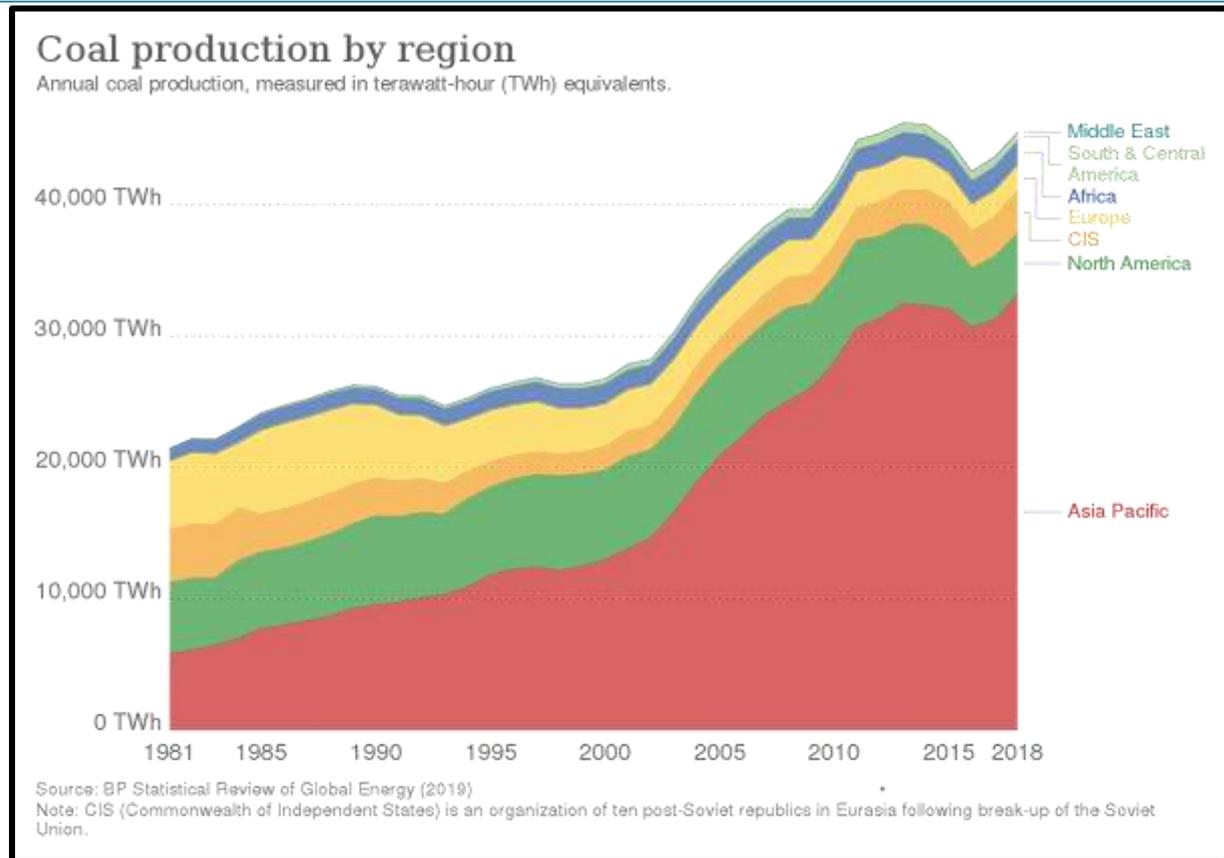
Move over organic food. Health aware shoppers are unit going one step ahead, heading for aquicultural turn out of fruits and vegetables grown up while not soil, and progressively seen on urban rooftops. Seeing a growing chance, a full host of startups has waded into aquicultural farming, giving pesticide-free fruits and vegetables.

- Hydroponics technique, roots are submerged in water that is infused with nutrients.
- Hydroponics is the cultivation of plants without using soil.
- Hydroponic flowers, herbs, and vegetables are unit planted in inert growing media and equipped nutrient-rich solutions, oxygen, and water.
- Hydroponics reduces each value on transportation and emissions. farming makes the applying of organic farming techniques terribly less complicated.
- Better organic process worth of crops.
- In farming, cropping cycle is reduced and harvest times are unit plenty shorter.

- In farming, the nutrient resolution is mixed into the water and is equipped on to the roots.
- Since the water directly reaches the roots, it's absorbed far better and zilch is lost in soil absorption thanks to the upper set-up value for aquicultural farming, the price of the turn out is additionally high.
- It conjointly helps farmers get steady financial gain and cut back dependence on monsoon, in keeping with a report by DataM Intelligence, the Indian aquicultural market is anticipated to grow at a CAGR of thirteen.53 per cent between 2020 and 2027.

Topic 19. Coal Production

Importance for Prelims: Geography



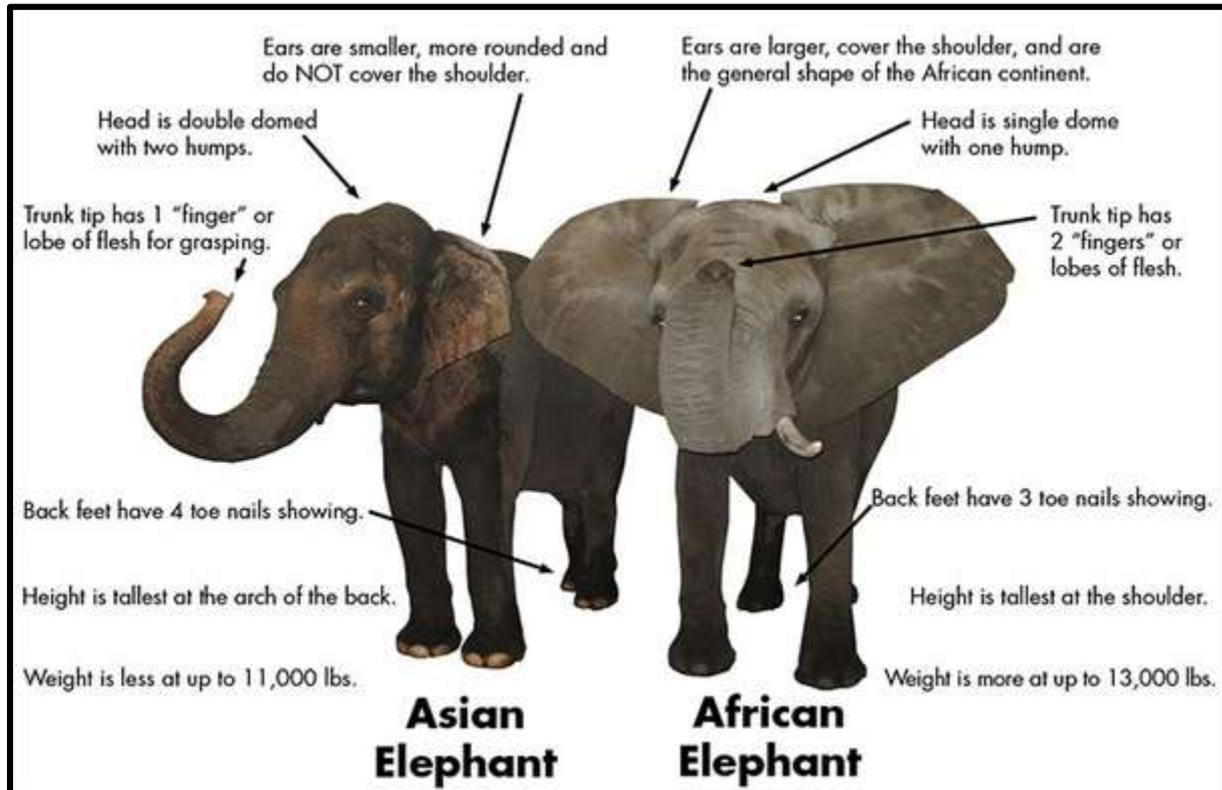
India's coal production declined by two.03 per cent within the twelvemonth 2020-21 to 716 million tonnes as compared to the assembly level of 730.87 million tonnes seen within the previous year, in line with probationary coal statistics from the Ministry of Coal

- Coal imports to Republic of India declined by thirteen.5 per cent to 215 million tonnes. The lion's share was exported by country, that equipped ninety six million tonnes of coal to Republic of India throughout the year.
- Australia exported 55 million tonnes to India, and was also the largest supplier of coking coal.
- The production from captive coal blocks in the country grew 8 per cent to 66 million tonnes.
- Production of thermal coal within the country stood at 671 million tonnes.

- The highest thermal coal-producing State, Chhattisgarh made 158 million tonnes, accounting for twenty-four per cent of the general thermal coal production, followed by Odisha and Madhya Pradesh.
- Jharkhand, that accounts for nearly all of India's coking coal production, made forty four million tonnes of coking coal.

Topic 20. Differences in Asian and African elephants

Importance for Prelims: Environment



Researchers have found that social structure differs in Asian and African elephants,

- The African elephant species into two distinct species, the larger being the African savanna elephant and the smaller being the African forest elephant.
- While the 2 African species are concerning as genetically completely different as tigers and lions, they still have additional options in common with each other than with their Asian counterpart.
- continentn elephants Asian elephants African elephants have abundant larger ears that look form of just like the continent of Africa Asian elephants have smaller, spherical ears African elephants have rounded heads Asian elephants have a twin-domed head, which suggests there's a divot line running up the pinnacle each male and feminine African elephants will have tusks each male and feminine African

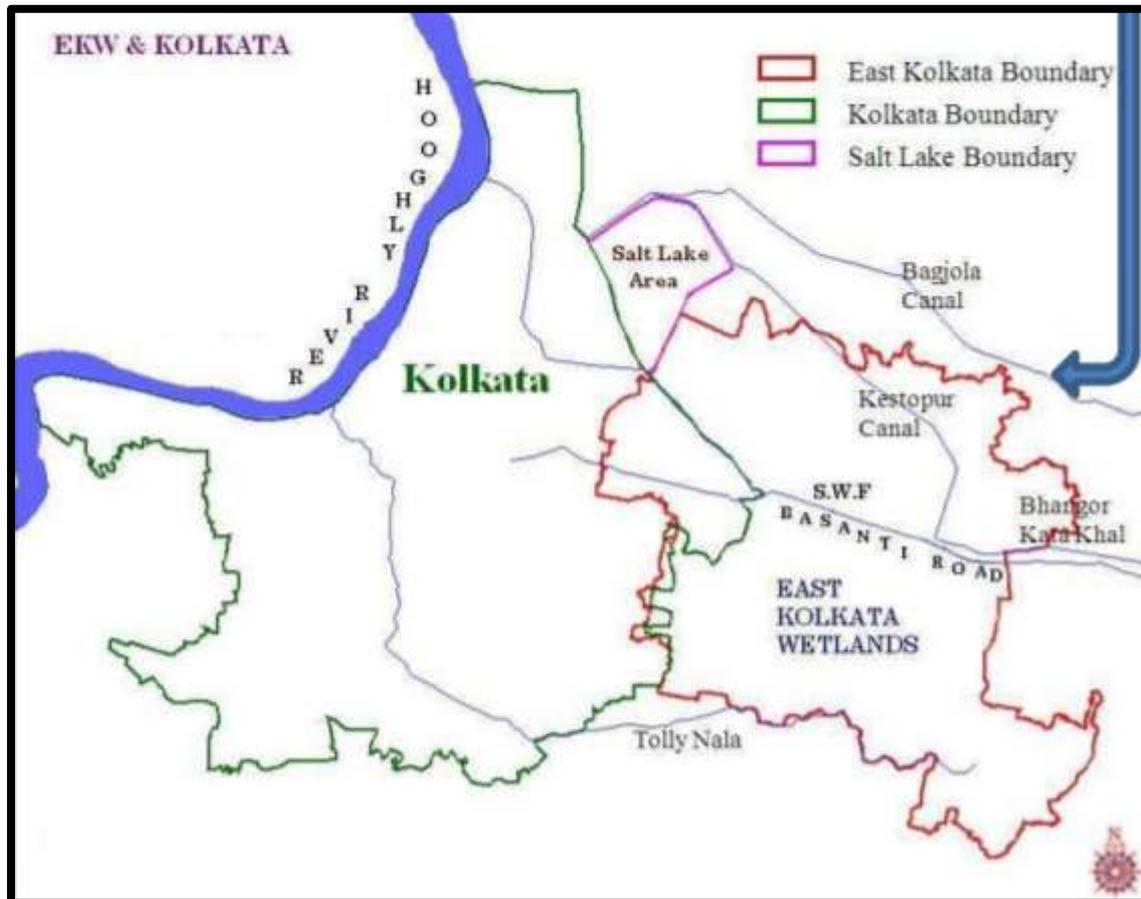
elephants will have tusks, however solely male Asian elephants will grow them.

- (It's vital to notice, however, that not all male Asian elephants nor all African elephants essentially develop tusks) African savannah elephants ar concerning eight,000 kilogram (9 tons) and ar between three and four meters tall (between ten and thirteen feet) at the shoulder.
- African forest elephants ar a small amount smaller than their savannah Asian elephants weigh five,500 kilogram (about half-dozen tons) and, at most, are 3.5 meters tall at the shoulder (11.5 feet). African savannah elephant population, young males appeared to like recent males probably thanks to opportunities for social learning Young males spent a larger proportion of your time associating with females (in mixed-sex groups) than with alternative males (in all-male groups).
- African savannah elephants spent solely regarding 30-60% of their time altogether male teams Asian elephant spent solely regarding twelve-tone system of their time altogether male teams each species, herds of elephants square measure matriarchies, with the oldest feminine leading the approach.
- Older males square measure typically solitary. Despite the actual fact that they occupy similar ecological niches (In ecology, a distinct segment is that the match of a species to a selected environmental condition), the scheme of Asian elephants differs from that of their African savannah counterparts.
- This is maybe thanks to their differing habitats.

- Recent findings Asian elephants, they are doing not move in mixed teams consisting of males and females. Males use smell to trace females.
- Males check females (and vice-versa sometimes) to most likely assess fertility and probably identity.
- Rarely, this would possibly result in a sexual practice. Sometimes, the male simply feeds aboard the feminine herd for a few time then leaves.
- There was additionally a constraint on the cluster size within the case of the previous.
- This is also attributable to the variations in resource handiness.
- The food distribution is specified it limits massive teams of elephants from feeding along Young males spent a larger proportion of your time associating with females (in mixedsex groups) than with different males (in all-male groups).
- While males met every which way within the presence of females, the behaviour differed in their absence.
- Old males preferentially related to different recent males, and recent and young males met one another but expected by accident.
- Young males met one another of course by accident.
- There was no proof that young males spent longer with recent males relative to time they spent with different young males.
- They additionally failed to preferentially initiate associations with older male the 2 potentialities for man elephants obtaining along in teams Testing their strength in an exceedingly relaxed setting against equally sized and closely matched age-class peers and sinking their dominance position, Young males preferentially associating with, and socially learning from, older males.

Topic 21. Mollar Bheri- East Kolkata Wetlands

Importance for Prelims: Environment



The cost of harm caused by garbage selling and contamination of the 55- acre East city Wetlands, a Ramsar web site, is Rs 1.46 crore, in step with a joint report by state and central government agencies

- The study was done by state Pollution panel, National Environmental Engineering analysis Institute (NEERI) and Central Pollution panel.
- It is ascertained that attributes like TDS (total dissolved solid), alkalinity, hardness, Mg and TC (total colliform) violates the appropriate limits.
- Volumes of lead, iron, manganese, cadmium, metallic element and atomic number 13 violate the appropriate limits for the pool water which of atomic number 13, manganese, iron, metallic element violate the appropriate limits for the bottom water.

- The metals mentioned square measure extremely unhealthful and contaminates aquatic plants and animals, significantly fishes.
- The toxins create health hazards to a large population of city and Bidhannagar. Mollar Bheri web site, Mollar Bheri is an element of a singular scheme wherever 234 ponds square measure inter-connected consume these fishes it spreads in a vicinity of twelve,500 ha, and is selected as Ramsar web site in 2002.
- It may be a a part of east city ground.
- It is highly vulnerable to the environmental impacts from solid waste dumping, poses a potential threat to the surrounding water bodies and also contaminate the ground water table.
- The area is a legacy waste dumpsite of concern, where unsegregated solid waste was accumulated.

Topic 22. Last Ice Area (LIA)

Importance for Prelims: Environment



In a paper revealed within the journal “Communications Earth & Environment”, researchers note that in August 2020 the world wherever the Last Ice space (LIA) is found, knowledgeable about a record low concentration of ocean ice.

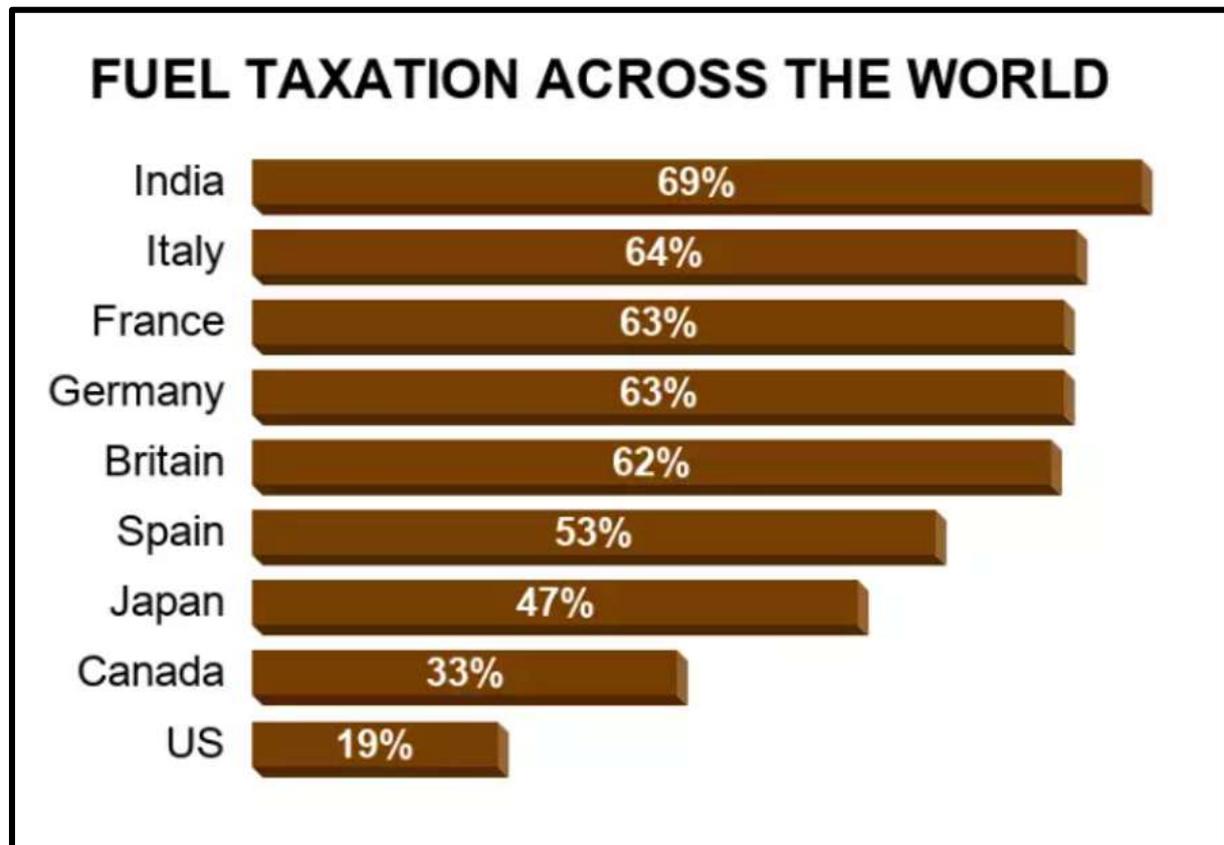
- The National Geographic noted that whereas climate projections forecast the whole disappearance of summer ice within the Arctic by the year 2040, the sole place that might be able to face up to a warming climate would be this space of ice known as the “Last Ice Area”.
- Importance the world is very important as a result of it absolutely was thought to be able to facilitate ice-dependent species as ice within the encompassing areas liquid away.

- The space is employed by polar bears to rummage around for seals United Nations agency use ice to make dens for his or her offspring. Walrus too, use the surface of the ice for hunt.
- As the ocean ice disappears, the Last Ice space can still offer an appropriate home for ice-associated life and therefore the those who depend on these living resources.
- Polar bears want ocean ice to hunt, and therefore the Last Ice space are often a refuge. a few quarter of the world's polar bears sleep in or round the region.
- Most of the world's whales pay a minimum of a part of the year within the Last Ice space.
- Global temperatures square measure plagued by Arctic ice, and its ability to replicate the sun's heat. Recent findings, Communications Earth & Environment", researcher's note that in August 2020 the world wherever the Last Ice space (LIA) is found, fully fledged a record low concentration of ocean ice.
- Sea-ice has been cutting for years, a trend they assume has been rife as a result of global climate change.
- A a part of the Arctic's ice known as "Last Ice Area", set north of Gronland, has liquified before expected. concerning eighty p.c of cutting are often attributed to weather-related factors like winds that split and move the ice around.
- The remaining twenty p.c are often attributed to longer-term cutting of the ice because of heating.
- During the winter and spring of 2020 , had patches of older, thicker ice that had drifted into there, however there was enough diluent, newer ice that liquified to reveal open ocean, This open ocean then began a cycle of engrossing heat that then liquified additional ice.

- The World life Fund (WWF) notes that global climate change is shrinking the extent of Arctic summer ocean ice, that isn't solely necessary for animals however conjointly the native Red Indian communities.

Topic 23. Petrol price rise and issue of tax

Importance for Prelims: Economy



Ratings agency ICRA recently postulated that the govt had area to chop cess levies on retail costs of gas and diesel, thereby easing costs. Lower fuel costs can seemingly facilitate cool inflation levels, that area unit presently on the far side the 6 June 1944 higher limit given by the Federal Reserve Bank of Asian country (RBI)

- The agency comes mixture revenue from such taxes on these 2 fuels to expand by regarding thirteen in FY22 from the previous year.
- Tax paid on a metric capacity unit of gas, as of Gregorian calendar month this year, taxes accounted for near to fifty eight of the worth of gas in urban center.
- Between might 2014 and Gregorian calendar month 2021, the Centre's share of taxes on the retail value of gas rose 216%, albeit the bottom value of the fuel declined pure gold.

- The current fuel costs mirror the upper cesses that are obligatory by the Centre since March 2020 and a rise in worth superimposed Tax (VAT) rates by quite common fraction of the State governments.
- Reason for top tax: The Centre wants wants,000 large integer within the current fiscal year to service the interest and principal associated with special oil bonds issued to grease promoting firms (OMCs).
- These bonds area unit fixed charge, having a hard and fast coupon rate and paid on a half-yearly basis.
- The annual interest due of around ₹10,000 large integer has been provided for within the Budget. MPC and Fuel costs
- The financial Policy Committee (MPC) official by the Central Government beneath Section 45ZB of tally Act determines the policy rate needed to attain the inflation target.
- The primary objective of financial policy is to keep up value stability whereas keeping in mind the target of growth.
- Price stability may be a necessary precondition to property growth.
- Accordingly, the Central Government has notified within the Official Gazette four per cent shopper indicator (CPI) inflation because the target for the amount from August five, 2016 to March thirty one, 2021 with the higher tolerance limit of six per cent and therefore the lower tolerance limit of two per cent The tally has been associate attempt|attempting} to keep up a growth-supportive stance by retentive an accommodative financial stance that features keeping benchmark interest rates considerably low and unchanged in response to the pandemic.
- Monetary policy committee (MPC) has been warning of face risks to the inflation flight from international goods costs, crude, supplying prices.

- The MPC's prescription Excise duties, cess and taxes obligatory by the Centre and States got to be adjusted during a coordinated manner to contain input price pressures emanating from gas and diesel costs.
- Lower pump costs of the transport fuels would ease some pressure on retail inflation and therefore enable the tally a bit a lot of room to still keep the price of borrowings lower.
- This, in turn, might facilitate a lot of demand for credit to each consume and invest in new commercial activity, prodding growth.

Topic 24. Literacy numeracy mission deadline pushed to 2027

Importance for Prelims: Governance

No extra funds for the goal (NEP), money are allocated from Samagra Shiksha Abhiyan

- SamagraShiksha is an integrated scheme for school education extending from preschool to class XII to ensure inclusive and equitable quality education at all levels of school education.
- It subsumes the three Schemes of SarvaShikshaAbhiyan (SSA), RashtriyaMadhyamikShikshaAbhiyan (RMSA) and Teacher Education (TE).
- The theme treats college education holistically as a time from Pre-school to category twelve.
- The main stress of the theme is on up the standard of faculty education by immersion on the 2 T's – Teacher and Technology.
- **Funding Pattern:** The theme is being enforced as a Centrally Sponsored theme.
- The fund sharing pattern for the theme between Centre and States is at this time within the quantitative relation of 90:10 for the North-Eastern States and therefore the Himalayan States and 60:40 for all alternative States and Union Territories with law-makers.
- It is 100 percent centrally sponsored for Union Territories while not law-makers.
- The theme conjointly proposes to grant flexibility to the States and UTs to arrange and range their interventions at intervals the theme norms and therefore the overall resource envelope on the market to them.

Topic 25. NIPUN Bharat Mission

Importance for Prelims: Governance

Ministry of Education
Government of India

#NIPUNBHARAT
is the need of the hour

55% of India's school-going children cannot read and understand a short, age appropriate text by Class 5: World Bank's Learning Poverty Index.

13-18% students from Class 3, 5, and 8 are below basic learning levels, and only 39-53% have achieved proficiency: NAS 2017.

As the above statistics indicate, schooling does not equal to learning.

Research suggests that **Class 3 is an inflection point**. Only if children 'learn to read' by then do they 'read to learn'.

#NIPUNBharat will help children 'read to learn' so that they don't get left behind.

निपुण भारत का सपना
सब बच्चे समझे भाषा और गणना

Recently, the Ministry of Education has proclaimed that it'll launch NIPUN Bharat Mission.

- NIPUN Bharat it's a National Initiative for Proficiency in Reading with Understanding and acquisition (NIPUN Bharat).
- It marks a vital step undertaken by the Department of faculty Education and skill, among a series of measures taken for implementation of the National Education Policy 2020.
- Its vision is to make AN sanctionative setting to confirm universal acquisition of foundational skill and acquisition.
- Its primary focus are going to be thereon each kid achieves the specified learning competencies in reading, writing and acquisition by the tip of Grade three, by 2026-27.
- It are going to be enforced by the Department of faculty Education and skill.

- Under the mission, a five-tier implementation mechanism are going to be established at the National- State- District- Block- faculty level all told States and UTs, below the aegis of the centrally sponsored theme of SamagraShiksha.
- It can facilitate in up the education and skill standards within the country.

Topic 26. Clinical Trials Registry India (CTRI)

Importance for Prelims: Governance / Science & tech

Recently, the Ministry of AYUSH has declared that the Ayurveda Dataset on Clinical Trials written record India (CTRI) Portal are launched.

- The Ayurveda Dataset of CTRI has been jointly developed by ICMR and Central Council for Research in Ayurvedic Sciences (CCRAS), Ministry of Ayush.
- Its key feature is that the provision of choice of the Ayurveda Health conditions from change posture of 3866 Ayurveda morbidity codes incorporated from the NAMASTE portal.
- It provides that the data, results etc. of Ayurveda Clinical Trials are obtainable in Ayurvedic vocabulary within the clinical trials written record of India.
- Clinical Trials written record India (CTRI) it's a primary register of Clinical Trials beneath WHO's International Clinical Trials written record Platform (ICTRP).
- It hosted at the ICMR's National Institute of Medical Statistics (NIMS).
- It may be a free and on-line public record system for registration of clinical trials being conducted in India.
- It was initiated as a voluntary live since 2009. The trial registration within the CTRI has been created necessary by the medication Controller General (India) (DCGI).
- International Clinical Trials written record Platform (ICTRP) it's a project of the globe Health Organization, based mostly at intervals the Health Metrics and activity cluster.
- It was established in August 2005. it's based mostly in WHO Headquarters in Geneva, Swiss Confederation.

- Its aim is to facilitate the potential registration of the WHO Trial Registration knowledge assault all clinical trials, and also the public accessibility of that data. Its purpose is to strengthen answerability and transparency within the conduct of clinical analysis and dissemination.

Topic 27. Project BOLD to Boost Tribals

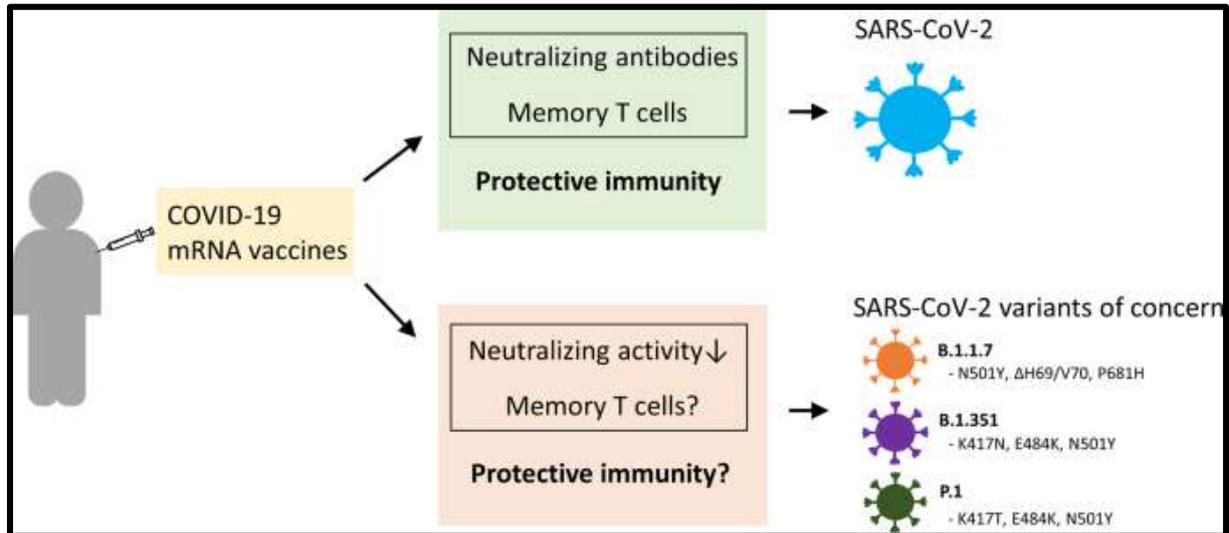
Importance for Prelims: Governance

Recently, the Ministry of small, little & Medium Enterprises (MSMEs) has proclaimed a Project daring so as to spice up tribals' lives and livelihoods.

- Project daring it's a novel initiative of textile and Village Industries Commission (KVIC).
- It is known as as “Bamboo Oasis on Lands in Drought” (BOLD).
- It is that the 1st of its kind exercise in India that was launched from the social group village NichlaMandwa in Udaipur, Rajasthan. beneath the project, 5000 saplings of special bamboo species i.e. BambusaTulda and BambusaPolymorpha are planted over sixteen acres approx. of vacant arid Gram punchayet land.
- About KVIC it's a statutory body established by associate Act of Parliament in 1956.
- It is beneath the executive management of Ministry of small, little & Medium Enterprises (MSMEs).
- The broad objectives that the KVIC has set before it are: The social objective of providing employment; The economic objective of manufacturing salable articles; and also the wider objective of making independency amongst the poor and build up of a robust rural community spirit.
- It is charged with the design, promotion, organisation and implementation of programs for the event of textile and alternative village industries within the rural areas.

Topic 28. T cell responses against Variants

Importance for Prelims: Science

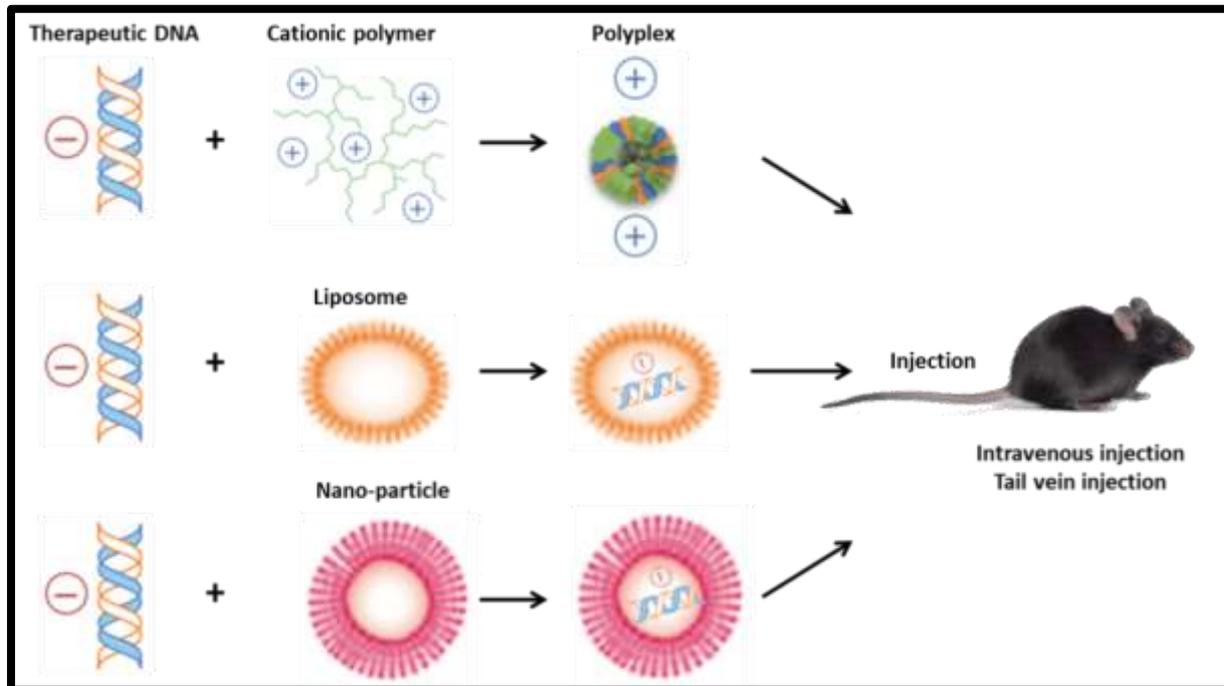


Researchers have found that T cells from people that have recovered from Covid-19, or received the Moderna or Pfizer-BioNTech vaccines, are still able to recognise many SARS-CoV-2 variants of concern. It found that each “helper” T cells and “killer” T cells will still recognise mutated varieties of the virus.

- The researchers tested lymphocyte responses against Alpha, Beta, Gamma and alphabetic character.
- They found that each insusceptible people and therefore the recovered patients had cross reactive T cells that might target these variants. What are T Cells?
- T cells (also referred to as T lymphocytes) are one among the most important elements of the adaptive system.
- Their roles embody directly killing infected host cells, activating alternative immune cells, manufacturing cytokines and control the reaction.
- There are 2 major varieties of lymphocytes: the helper lymphocyte and therefore the cytotoxic T cell.
- As the names recommend, helper T cells ‘help’ alternative cells of the system, while cytotoxic T cells kill virally infected cells and tumours.

Topic 29. Electroporation physical Transfection

Importance for Prelims: Science and Technology



a team of researchers from IIT-Madras, unitedly with scientists from the united kingdom and Taiwan, have achieved a symbol breakthrough in doing transfection.

- Transfection is that the method of introducing foreign genetic substances like nucleic acids into cells, is commonly required for sequence analysis and medical care.
- Single-cell transfection techniques (SCTT) give a stronger understanding of the interactions between molecules and organelles, which might facilitate within the development of medicine and diagnostic tools.
- There square measure 3 ways of doing transfection.
- A) Biological, within which the required genetic material is introduced into an endemic.
- The virus is then used as a truck to require the fabric within the cell. it's a simple methodology, however there square measure undesirable side-

effects because it may trigger AN immuno-response from the body or depart harmful genetic mutations.

- Chemical methodology attaches the cargo (carrier) to the positive ions of bound chemicals (cationic compound, cationic amino acids) and that they get drawn to the charged cell wall.
- This is hard, as a result of it got to match the chemicals to the sort of cell, instead the ‘transfection efficiency’ are going to be low.
- C) Physical is gaining ground. Here again, there square measure completely different techniques, like microinjection, biolistics and electroporation.
 - 1. Micro-injection is simple injection however demands high ability and is grueling.
 - 2. ‘Biolistics’, or biological ballistics, is pricey because it desires instrumentation for mix the cargo material with gold and shooting it into the cell employing a gene-gun.
 - 3. Electroporation, a additional made-up technique, involves applying an electrical field to the cell, so its permeableness will increase — the holes in its walls get larger, so our cargo passes through.
- For this, it desires extraordinarily little electrodes (at least one thousandth of AN mm) Electroporation,
- The researchers made-up a really precise array of nano-electrodes with the assistance of advanced micro/ nanofabrication techniques.
- The gap between 2 nano-electrodes was seventy nanometers and also the interspace between associate degree array of nano-electrodes was five micrometers.
- The electrical pulse creates temporary deliquescent (water-loving) pores, through that the required load might be slipped in. within the experiment, the researchers used their device to deliver into a cell material like cell-

impermeable dyes, quantum dots (nano crystals which will ferry electrons) and plasmids (a quite DNA). Advantages, With Nano-electrodes, the voltage applied is little (4V to 6V) and, owing to this, the cell lives longer (3 to four days).

- The voltage required is massive enough to kill the cell among minutes once the load gets within the smaller Nano-electrode expanse, the electrolysis result was virtually negligible, that increased cell viability conjointly, with Nano-electrodes it's potential to settle on wherever to puncture holes within the cell wall.
- This brings in 2 benefits.
- Can deny the entry of different unwanted materials into the cell.
- Two, you'll be able to do parallel transfection of multiple medication and see however they move.
- This Nano device provides a spatial and temporal indefinite quantity management technique, giving high transfection potency and cell viability.
- This technology may be a vital breakthrough in transfection techniques, which might aid drug analysis.

Topic 30. Bagram Airfield-BAF

Importance for Prelims: International Relations

The North American nation departure from Bagram has already raised the stakes in Islamic State of Afghanistan. With the Taleban on the move, uncertainty and anxiety have come to the land.

- Bagram Airfield-BAF additionally called Bagram base was the most important S. military base in Islamic State of Afghanistan.
- It is found next to the traditional town of Bagram, eleven kilometres (6.8 mi) southeast of Charikar within the Parwan Province of Islamic State of Afghanistan.
- The airbase close to the city of Bagram could be a very little over sixty metric linear unit north of Kabul.
- It has continuously been a military base.
- The Soviets engineered the flight strip within the Nineteen Fifties.
- Bagram flying field was the location of many military encounters and anepicentre folks ‘war on terror’ in Islamic State of Afghanistan within the background of 9/11 terror attacks.
- Testimony to the importance of Bagram has been the visits by North American nation Presidents since 9/11.
- Bagram flying field has currently been handed over to Afghan National Security and armed forces.

Topic 31. Section 43D (5) of the Unlawful Activities Prevention Act (UAPA)

Importance for Prelims: Legislations

Just 2 days before his death, Stan Swamy had moved the Bombay court difficult Section 43D(5) of the Unlawful Atrocities interference Act (UAPA) — a provision Swamy termed “illusory”.

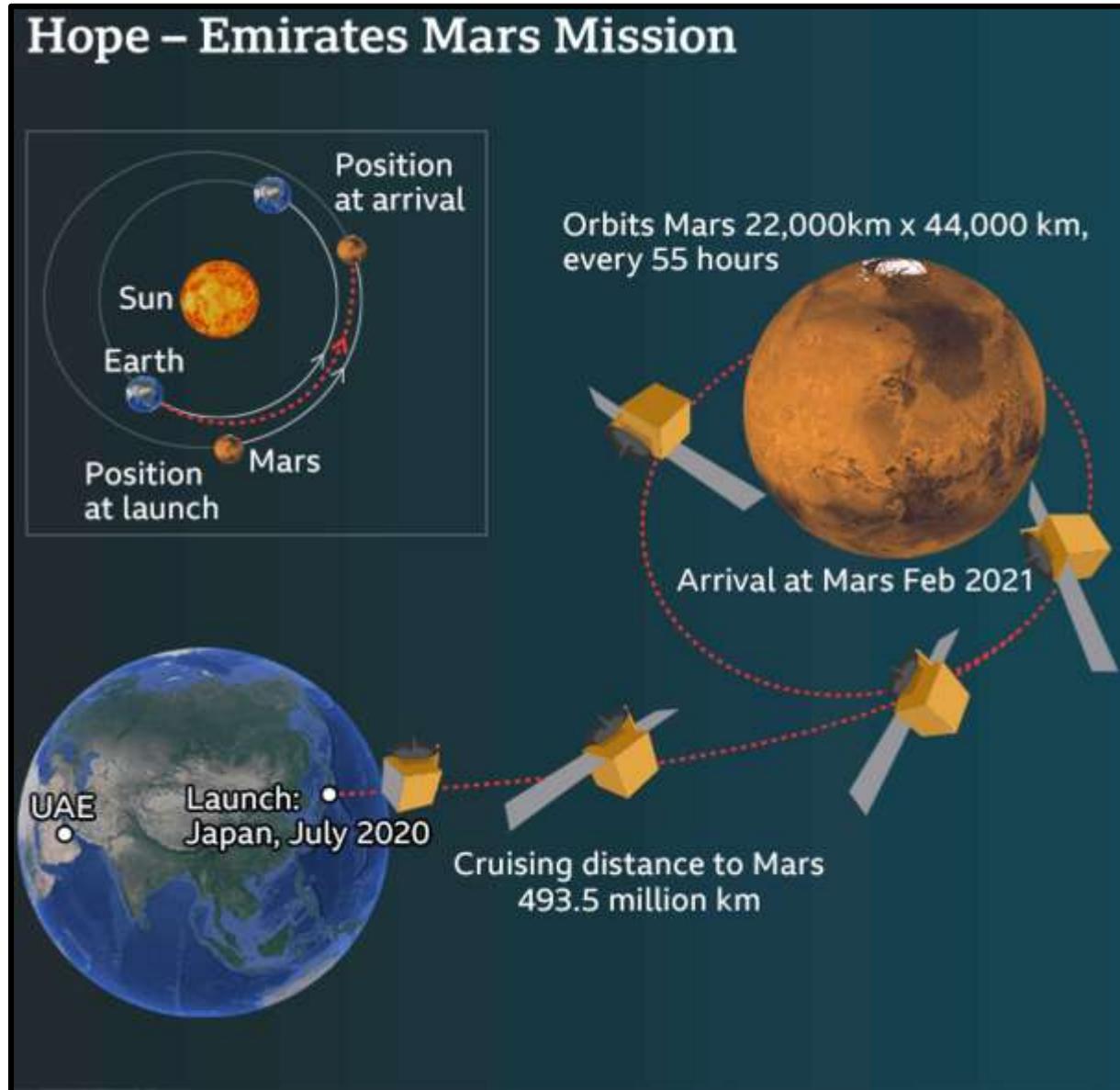
- Section 43D (5) of UAPA The UAPA, enacted in 1967, was reinforced by the Congress-led UPA government in 2008 and 2012.
- The take a look at for denying bail underneath the UAPA is that the court should be happy that a “prima facie” case exists against the suspect.
- The Section 43D(5) reads that no one suspect of associate degree offence punishable underneath Chapters IV and VI of this Act shall, if in custody, be discharged on bail or on his own bond unless the general public prosecuting attorney has been given a chance of being detected on the appliance for such unleash.
- It as long as such defendant person shall not be discharged on bail or on his own bond if the Court, on a perusing of the case diary or the report created beneath section 173 of the Code is of the opinion that there square measure affordable grounds for basic cognitive process that the accusation against such person is clear true.
- Law of Bail beneath UAPA each regular bail and bail by default like CrPC square measure on the market beneath UAPA with some alterations beneath section forty three D of UAPA.
- The Regular Bail in UAPA is granted by a competent judge beneath section 437 CrPC and by the court or district and sessions court beneath section 439 of CrPC.
- The provisions for default bail is additionally on the market beneath section 167(2) CrPC browse with section 43D(2) of

UAPA, once thirty days of police custody and ninety days of judicial custody, subjected to delay in filing of charge-sheet.

- UAPA doesn't offer any specific conditions to be happy to grant bail.
- Curious case of Section 43D(5) it's solely applicable to offences punishable beneath chapter IV and VI of the act i.e. offences associated with terrorist acts and terrorist organizations.
- It features a precondition that essentially explains condition once bail shall be denied, i.e. if affordable grounds exist for accusations to be prima-facie true and such call shall be supported rap sheet or case diary.
- The second a part of precondition explains the burden over prosecution and also the prosecution had to prove that affordable grounds exist for accusations believed to be clear true.

Topic 32. UAE's Hope spacecraft has captured images of discrete auroras

Importance for Prelims: Geography



Recently, the UAE's Hope space vehicle has captured pictures of glowing atmospherical lights within the Red Planet's night sky, called separate auroras.

- **Phenomena of Auroras** on Earth the Auroras are caused when charged particles ejected from the Sun's surface, called the solar wind, enter the Earth's atmosphere.

- The particles from solar wind are harmful, and our planet is protected by the geomagnetic field, which preserves life by shielding us from the solar wind.
- At the north and south poles, a number of the solar radiation particles square measure ready to ceaselessly stream down, and act with totally different gases within the atmosphere to cause a show of sunshine within the night sky.
- It is understood as AN aurora that is seen from the Earth's high latitude regions (called the auroral oval), and is active all year spherical.
- In the northern a part of our globe, the polar lights square measure referred to as northern lights or aurora borealis, and square measure seen from the United States (Alaska), Canada, Iceland, Greenland, Norway, Scandinavian nation and Republic of Finland.
- In the south, they're referred to as southern lights or aurora, and square measure visible from high latitudes in Antarctic continent, Chile, Argentina, New Seeland and Australia.
- Auroras in Mars not like Earth, that features a robust force field, the Martian force field has for the most part died out as a result of the liquefied iron at the inside of the earth has cooled.
- The Martian crust, that hardened billions of years ago once the force field still existed, retains some magnetism.
- In distinction with Earth, that acts like one single magnet, magnetism on Mars is inconsistently distributed, with fields strewn across the earth and differing in direction and strength.
- The disjointed fields channel the solar radiation to totally different components of the Martian atmosphere, making "discrete" auroras over the complete surface of the earth as charged particles act with atoms and molecules within the sky.

Topic 33. OPEC+

Importance for Prelims: International Relations

The latest spherical of conferences among the OPEC+ cluster of oil-exporting countries has stalled because the UAE has pushed back proposals creating a rise in crude offer conditional on AN extension to AN output agreement.

- The non-OPEC countries that export crude square measure termed as OPEC and countries.
- OPEC and countries embrace Asian country, Bahrain, Brunei, Kazakhstan, Malaysia, Mexico, Oman, Russia, South Sudan and Sudan.
- The OPEC and non-OPEC producers initial fashioned the alliance at a historic meeting in Algiers in 2016.
- OPEC's fourteen members management thirty five p.c of worldwide oil provides additionally to the eighty two p.c of well-tried reserves.
- The addition of 10 Non-OPEC countries as OPEC+ including various important countries like Russia, Mexico and Kazakhstan, the share has increased to 55 percent and 90 percent of the holdings respectively.
- This provides OPEC+ a greater level of influence over the world economy than OPEC countries.
- Concern The OPEC+ group ran into sharp criticism from developing economies, for deliberately maintaining low supply levels to raise prices.
- OPEC+ agreed to gradually increase crude production as prices reached \$64.5 per barrel including a phased end to Saudi Arabia's 1 million barrel per day cut in production by July.
- Impact on India If the UAE and other OPEC+ nations do not reach an agreement to increase production in August, expected relief in the form of lower crude oil prices could be delayed.

- High crude costs have crystal ball to Indian oil selling firms hiking the worth of gasoline by concerning nineteen.3 per cent which of diesel by concerning twenty one per cent since the start of 2021.

Topic 34. ONDC project

Importance for Prelims: Government Schemes

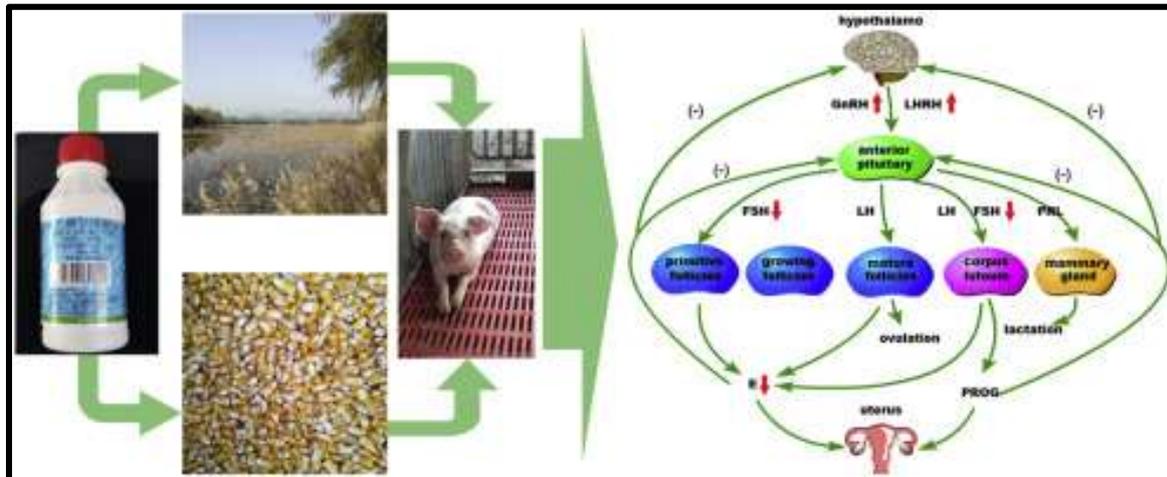
The Centre has discovered associate informatory Council for Open Network for Digital Commerce (ONDC) comprising

- It was set to represent associate informatory Council, to advise the govt. on measures required to style and accelerate adoption of ONDC, by the Department for Promotion of business and Internal Trade (DPIIT), comprising Nandan Nilekani of Infosys and senior representatives from the govt. and retailers organizations ONDC project.
 - The ONDC, a project of the DPIIT allotted to the standard Council of Republic of India (QCI), aims at promoting open networks developed on open sourced methodology, mistreatment open specifications and network protocols freelance of any specific platform. ONDC is anticipated to digitalize the complete worth chain, standardise operations, promote inclusion of suppliers, derive potency in supplying and enhance worth for customers.
 - Open Network for Digital Commerce (ONDC) project that is aimed at curbing “digital monopolies”.
 - This is a step in the direction of making e-commerce processes open source, thus creating a platform that can be utilised by all online retailers
- Significance of making something open-network
- 1. creating a computer code or a method ASCII text file means the code or the steps of that method is created obtainable freely for others to use, distribute and modify it.
 - 2. If the ONDC gets enforced and mandated, it'd mean that each one e-commerce corporations can ought to operate mistreatment an equivalent processes.

- This might provides a large booster to smaller on-line retailers and new entrants.

Topic 35. Glyphosate-based herbicides

Importance for Prelims: Science and Technology



In the past 2 years, 3 United States juries have awarded multimillion-dollar verdicts to plaintiffs WHO declared that glyphosate, the active ingredient in Roundup, gave them non-Hodgkin malignant neoplastic disease, a cancer of the system.

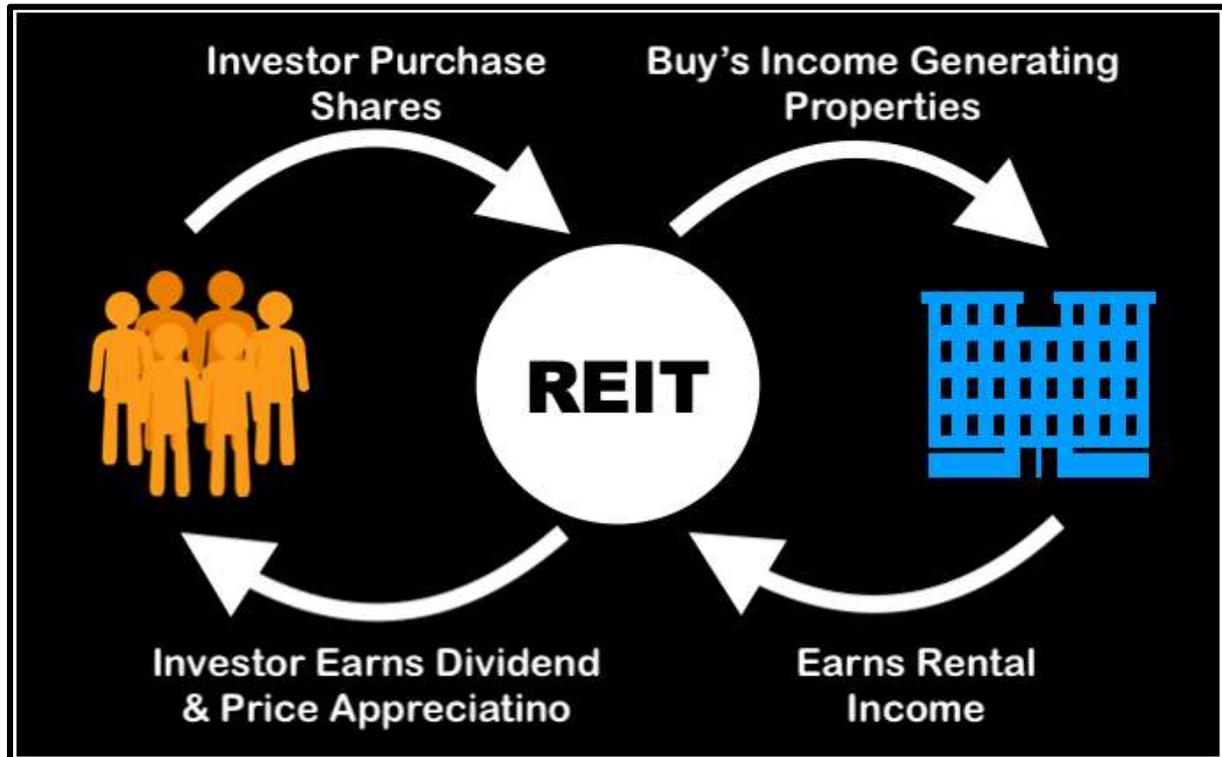
- Generic glyphosate is omnipresent round the globe.
- Farmers use it on a majority of the world's agricultural fields. Generic glyphosate is omnipresent round the globe.
- China still dominates the pesticide industry it exported 46% of all herbicides worldwide in 2018.
- EFFECTS Monsanto scientists claimed that it would not harm people or other non-target organisms and did not persist in soil and water.
- Scientific reviews determined that it did not build up in animal tissue.
- Glyphosate killed additional target weed species than the other chemical before Researchers have detected it within the piddle of youngsters in remote villages in Laos and babies World Health Organization, classified it as a probable human matter supported "limited" proof of cancer in humans from actual real-world exposures and "sufficient" proof of cancer in experimental

animal kids whose mothers seasoned antepartum exposure to glyphosate had a considerably higher risk of syndrome spectrum disorder than an effect population.

- Studies have found that glyphosate causes liver and urinary organ harm in rats and alters honey bees' gut microbiomes.
- Mice exposed to that have shown hyperbolic malady, fleshiness and birth abnormalities 3 generations once the exposure.
- Although glyphosate breaks down within the atmosphere comparatively quickly, it's gift in aquatic systems at a volume massive enough to be detected in blood samples from Everglade State manatees. U.S. Environmental Protection Agency and therefore the European Food Safety Authority maintain that glyphosate is unlikely to cause cancer in humans and doesn't threaten human health once used consistent with the manufacturer's directions.
- Countries, as well as Luxembourg and North American country, have illegal or restricted the utilization of glyphosate, citing health considerations.

Topic 36. REIT (Real Estate Investment Trust)

Importance for Prelims: Economy



SEBI recently proclaimed that the minimum investment quantity during a Real Estate Investment Trust be brought right down to ₹10,000-15,000, with the revised commercialism ton at one unit; the sooner investment quantity was ₹50,000,

- REITs are unit investment vehicles that pool capitalist cash like mutual funds and use it to shop for a portfolio of land assets.
- They manage these assets to get a daily financial gain and capital appreciation.
- In order to make sure that the Real Estate Investment Trust is in a position to get financial gain, the portfolio of a Real Estate Investment Trust ought to be invested with in completed and rent-generating properties.

- REITs will invest altogether sorts of income-generating properties — residences, offices, hotels, malls, warehouses et al, in India the listed REITs area unit focussed primarily on workplace house.
- The 1st listing of investment firm within the country (Embassy REIT), the listing and mercantilism of REITs on the exchanges enable investors to shop for or sell them at any time. The structure of a investment firm is analogous to a investment company.
- REITs concentrate on paying out regular financial gain from rent attained on properties.
- It has 3 tier structure a sponsor, WHO is answerable for promoting the investment firm along with his own capital; a fund management company that is answerable for choosing and in operation the properties; Trustee, WHO ensures that the cash is managed within the interest of unit-holders.
- As per SEBI's tips, REITs ought to obligatorily distribute ninety per cent of their financial gain to unit-holders.
- The distribution may well be within the kind of dividend or interest financial gain or each.
- REITs supply an opportunity to shop for into varied property portfolio with atiny low outlay.

Topic 37. Central govt creates New Ministry for Co-operatives

Importance for Prelims: Governance

In a historic move, a separate ‘Ministry of Co-operation’ has been created by the NDA Government for realizing the vision of ‘Sahkar se Samriddhi’.

- This ministry can offer a separate body, legal and policy framework for strengthening the cooperative movement within the country.
- It can facilitate deepen Co-operatives as a real folks based mostly movement reaching upto the grassroots.
- The Ministry can work to contour processes for ‘Ease of doing business’ for cooperatives and modify development of Multi-State Co-operatives (MSCS).
- Creation of a separate Ministry for Co-operation also fulfils the budget announcement made by the Finance Minister.

Topic 38. Open Network for Digital Commerce (ONDC) Project

Importance for Prelims: Governance

Recently, the Department for Promotion of trade associated Internal Trade (DPIIT) had issued orders on appointing an consultative committee for Open Network for Digital Commerce (ONDC) project.

- Open Network for Digital Commerce (ONDC) Project it's project of Department for Promotion of trade and Internal Trade (DPIIT).
- Its primary objective is to curb digital monopolies. below the project, the on boarding of sellers, vender discovery, worth discovery and products cataloguing may well be created open supply on the lines of Unified Payments Interface (UPI).
- It is anticipated to modify the complete worth chain, standardise operations, promote inclusion of suppliers, derive potency in supply and enhance worth for shoppers.
- The task of implementing DPIIT's ONDC project has been assigned to the standard Council of India (QCI).
- It aims at promoting open networks developed on open-sourced methodology, victimization open specifications and open network protocols, freelance on any specific platform.
- Digital Monopolies It refers to a state of affairs whereby e-commerce giants or massive school firms tend to dominate and flout competition law relating monopoly.
- The giants have engineered their own proprietary platforms for operations.
- India stirred to shake up digital monopolies within the country's \$ 1+ trillion retail market by creating public a draft of a code of conduct i.e. Draft Ecommerce Policy.

Topic 39. Monsoon breaks

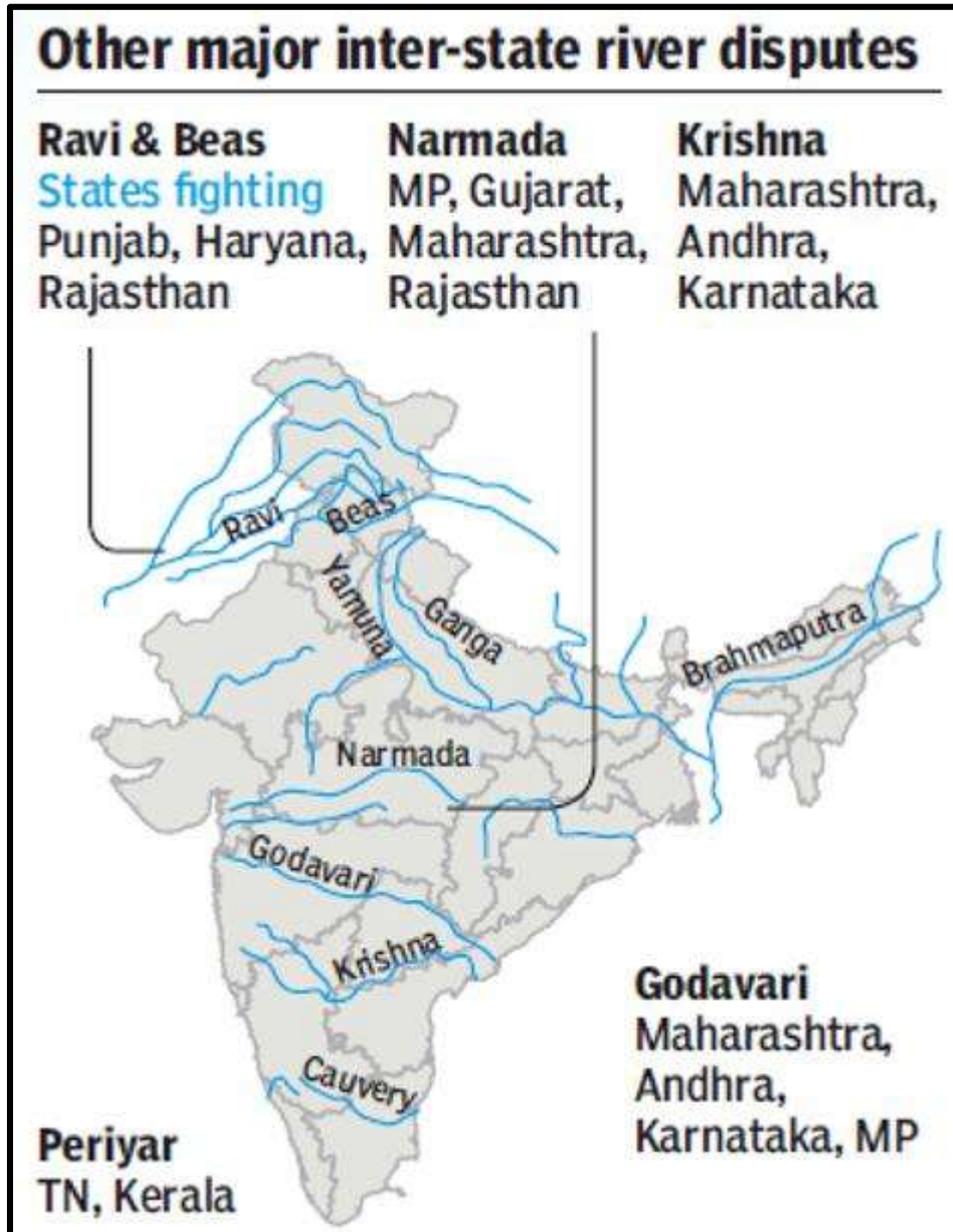
Importance for Prelims: Geography

Revival of the monsoon on Th can bring down rain intensity and distribution over the North-Eastern States in an exceedingly identified swing of fortunes because the monsoon emerges out of a “break” part

- The monsoon has tendency to possess ‘breaks’ in downfall, throughout that terribly less or no downfall happens.
- The monsoon rains come about just for a couple of days at a time.
- They are interspersed with dry intervals.
- These breaks in monsoon are associated with the movement of the monsoon trough.
- 6/11 This happens once the Monsoon trough shifts to the foothills of range of mountains, that results in sharp decrease in downfall over most elements of the country however increase on the range of mountains and elements of Northeast Asian country and Southern ground.
- During July and August, there are bound periods once the monsoons become weak. Breaks are possible to occur throughout the second week of August and last for every week.
- The breaks are believed to be caused by the northward shifting of the monsoon trough (minimum low cell in ITCZ).
- The axis of the trough lies at the foothills of the Himalayas during the break period.
- During the break period, heavy rainfall occurs over the sub-Himalayan regions and the southern slopes of the Himalayas.
- One or two breaks do occur during the rainy season.

Topic 40. Water disputes and irrigation projects in Krishna and Godavari

Importance for Prelims: Polity



Andhra Pradesh and Telangana had come back to blows following a heated discussion between governance over unharness of water from the NagarjunaSagar reservoir.

- Andhra Pradesh and Telangana has been drawing avatar water from four comes, Jurala, Srisailam, NagarjunaSagar, and Pulichintala for hydropower generation

- The usage must be approved from the avatar stream Management Board (KRMB), associate autonomous body that was got wind of once the bifurcation of the state, to manage and regulate the waters within the avatar basin.
- The water that's used for power generation, farmers within the avatar delta ayacut are nonetheless to start sowing of the kharif crop.
- The Andhra Pradesh government implements the Rayalaseema elevate Irrigation Project (RLIP) in avatar stream.
- After Telangana was engraved out of Andhra Pradesh, the 2 states in agreement to separate the water share 66:34 on a commercial hoc basis till the avatar Water Disputes Tribunal-2 determined the ultimate allocation. Claims by Telangana, Telangana has involved a 50:50 allocation of water from the avatar stream.
- The Kaleshwaram elevate irrigation project that was inaugurated in 2019 needs a large quantity of power to draw water from the Godavari stream, the Telangana government desires the hydel energy to power its Nettempadu, Bheema, Koilsagar and Kalwakurthy elevate irrigation comes.
- Telangana wants the Krishna Water Disputes Tribunal-2 to permanently settle the water dispute.

After the Centre's nod for creation of the Ramgarh Vishdhari sanctuary, the Rajasthan government is hoping to develop a tiger passageway connecting 3 tiger reserves passing through districts as well as SawaiMadhopur, Kota and Bundi.

- Ramgarh Vishdhari Sanctuary will be link Ranthambore Tiger Reserve in the Northeast & Mukundra Hills Tiger Reserve on the southern side.
- The total space of one,017 sq. metric linear unit has been known because the reserve space comprising 2 forest blocks of Bhilwara, territorial forest block of Bundi and Indargarh, that falls underneath the buffer zone of Ranthambore Tiger Reserve (RTR).
- Its flora consists of Dhok, Khair, Salar, Khirni trees with some Mango and Ber trees.
- The Fauna consists of birds and animals like Leopard, Sambhar, Wild boar, Chinkara, Sloth bear, Indian Wolf, Hyena, Jackal, Fox, ruminant and crocodilian reptile.
- Reasons for Creation Increasing numbers of Tigers and different apex predators certify our sturdy variety Tigers have forever frequented {the space|the world|the realm} demarked for the Ramgarh Vishdhari tiger sanctuary and tigers frequently experience this area from the direction of Ranthambore.
- It is adjacent the buffer space of the Ranthambore Tiger Reserve.
- This fresh planned tiger reserve in Bundi district can connect the Ranthambore Tiger Reserve in SawaiMadhopur district with the Mukundra Hills Tiger Reserve in Kota district with the new sanctuary bobbing up, a passageway as well as the 3 tiger reserves are often developed.
- Ranthambore Tiger Reserve nowadays incorporates a population of over sixty five tigers, The Mukundra reserve is presently left with only one felid, the tiger MT4.

- Hence Conservator of Forests and Field Director, have sent a proposal to bring 2 males and one feminine from Ranthambore.

Topic 42. White- Black and Red Flag Movement

Importance for Prelims: International Relations

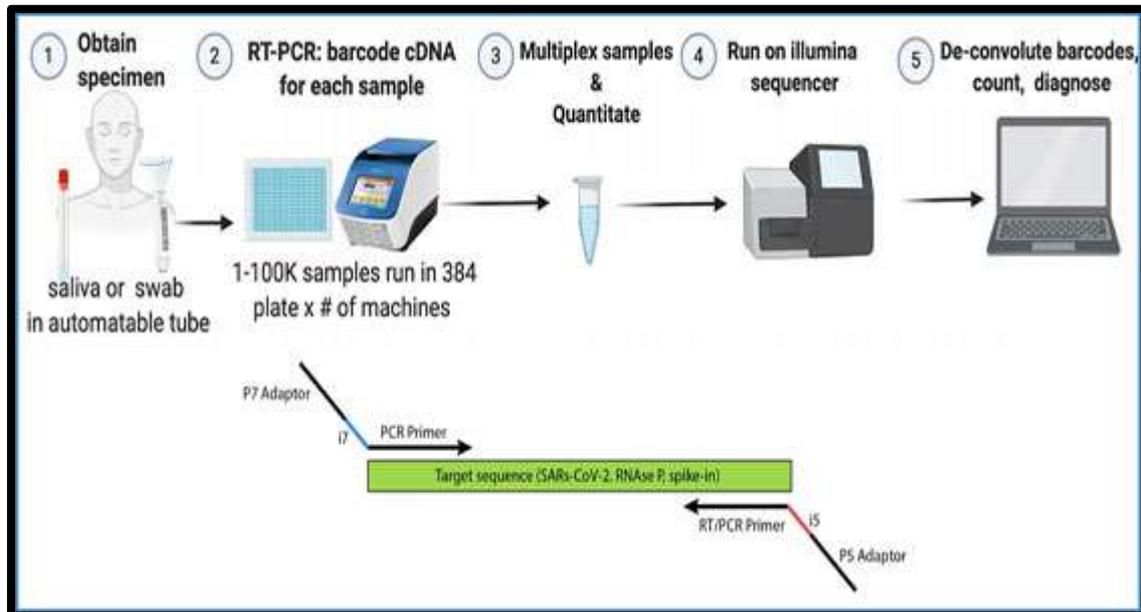
Malaysia, some residents of low-income families have started waving white flags as a part of the questionable “White Flag Campaign”, or the #benderaputi (white flag) movement.

- White Flag they're doing this to convey distress regarding the money crunch they need had to modify amid the lockdowns because of Covid-19.
- Families that face hunger or would like the other reasonably help are inspired to wave a flag or place a chunk of white material outside their homes to signal that they have facilitated.
- The plan is that by recognizing the flag, neighbours and smart samaritans will reach them.
- On the Sambal SOS app, that was ab initio known as the BenderaPutih app, folks will see the map of Asian country wherever active food banks are marked.
- This is to assist folks simply run food banks. Jolly Roger aboard the flag movement, there's the Jolly Roger movement additionally, so as to precise discontentment with the Malaysian government.
- The public to boost black flags as a proof of protest against the government's management of the pandemic. The cluster demanded that Yassin resign which the Parliament convene to raise the state of emergency.
- Red Flag Another movement known as the red flag campaign or #benderamerah, that works within the same approach because the flag movement, however the distinction is that the previous is targeted at Malaysian voters solely and was started by the Malaysian Animal

Association as several families were abandoning pets they couldn't afford to feed.

Topic 43. SwabSeq

Importance for Prelims: Science and Technology



An article in Nature medicine Engineering, a team of scientists from the University of Golden State, Ia (UCLA) have reportable real-world results on SwabSeq, a testing platform that uses sequencing to check thousands of samples at a time to discover Covid-19.

- SwabSeq uses sample-specific molecular barcodes to at the same time analyse thousands of samples for the presence or absence of SARS-CoV-2, the take a look at showing very high sensitivity and specificity
- SwabSeq was granted Food and Drug Administration Emergency Use Authorization SwabSeq could be a versatile protocol and might speedily proportion testing for novel pathogens, have optimized SwabSeq to rate scale and low price, key factors that ar missing from current Covid-19 nosology.
- These results demonstrate the potential of SwabSeq to be used for SARS-CoV-2 testing on associate new scale. SwabSeq offers a possible resolution to the necessity for population-wide testing to stem the pandemic.

