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Success is born of action...

Topic 1. PROTECTION OF ANCIENT MONUMENTS & ARCHAEOLOGICAL SITES

Importance for Prelims: Art & Culture

The 100-metre radius around centrally protected monuments wherever construction is prohibited can be replaced with site-specific limits to be determined by an skilled committee.

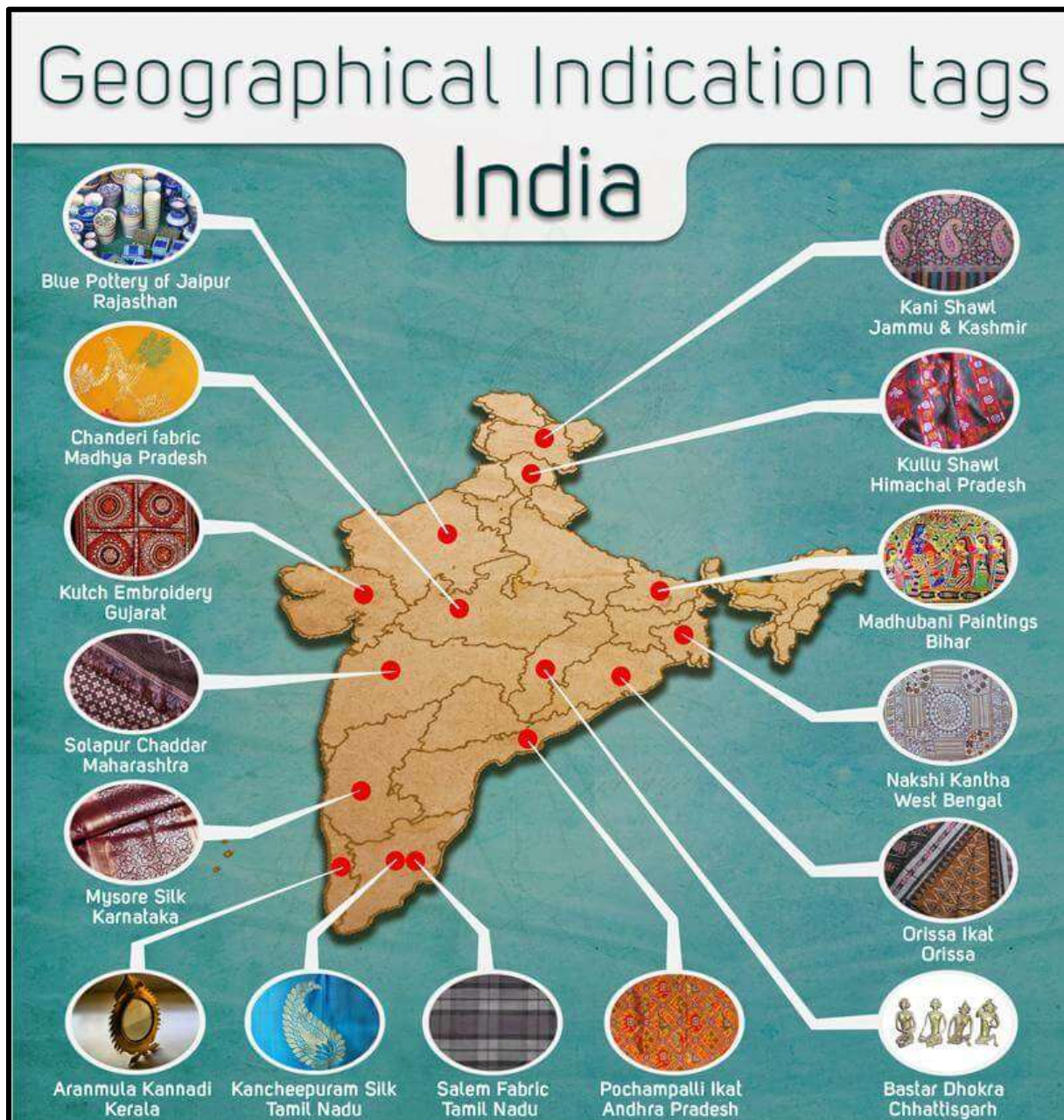
- The Ancient Monuments and archeological Sites and Remains (AMASR) Act, 1958, was amended in 2010 to declare the 100-metre radius of protected monuments as prohibited areas and also the next 300-metre radius as regulated Section 20A of the Act would be amended, that refers to the prohibited area, to rationalise the prohibited and regulated areas.
- Ancient Monuments and archeological Sites and Remains Act, 1958.
- The AMASR Act provides for preservation of ancient and historical monuments and archeological sites and remains of national importance.
- It provides for the regulation of archeological excavations and for cover of sculptures, carvings and alternative like objects.
- The archeological Survey of India functions underneath the provisions of this act.
- The archeological Survey of India is that the protector of those monuments.
- The Act prohibits construction in ‘**prohibited area**’, an area of a hundred meters around protected monument.
- It doesn't allow construction in such prohibited areas even though it's for public functions, except under sure conditions.
- The central government will extend the prohibited area on the far side 100 meters.
- The picture monuments in India, Taj Mahal, Ajanta Caves, the great Stupa at Sanchi and also the Sun Temple of Konark, among others area

unit selected as “ancient monuments of national importance” and guarded under the AMASR Act.

- National Monument Authority can build a recommendation, for construction of structure to the central government, given that it's glad that there's no affordable risk of moving the development outside the prohibited area.
- Archaeological Survey of India (ASI) ASI, under the Ministry of Culture, is that the premier organization for the archeological analysis and protection of the cultural heritage of the state.
- It was based in **1861 by Alexander Cunningham**—the 1st Director-General of ASI.
- Alexander cunningham is additionally called the “Father of Indian Archaeology”.
- Its activities include carrying out surveys of antiquarian remains, exploration and excavation of archeological sites, conservation and maintenance of protected monuments etc.

Topic 2. GEOGRAPHICAL INDICATION (GI)

Importance for Prelims: Economy



Three applications from Uttar Pradesh are Filed with the Geographical Indications register seeking a Geographical Indication (GI) tag for the BundelkhandKathiyaGehu (Wheat), BanarasiTabla and SitapurDurrie.

- BundelkhandKathiyaGehu this explicit wheat has high nutritional worth and a high fibre content.
- It is typically planted within the last week of October or initial week of

November and is harvested between March and April.

- This wheat has many medicinal values. SitapurDurrie under the handicrafts category.
- A durrie may be a thick fat woven rug/carpet traditionally used as floor coverings. SitapurDurrie is exclusive and is completely different from a carpet.
- The motifs and color mixtures are distinctive from what's created in rest of country.
- BanarasiTabla musical instrument Tabla is one in all the foremost vital musical instruments in Banaras it's made of completely different forms of wood like sheesham, neem, mahogany and babla wood.
- There may be a huge demand for Banarasitabla's within the native market still because the international markets.

What is a Geographical Indication?

- It is a sign it originates from a particular geographical territory.
- It is employed to spot agricultural, natural or manufactured goods it's an badge on products having a singular geographical origin and evolution over centuries with relevance its special quality or purported attributes.
- It may be a mark of credibility and ensures that registered licensed users or a minimum of those residing within the geographic territory are allowed to use the popular product names.
- GI tag in India is ruled by Geographical Indications of goods (Registration & Protection) Act, 1999.
- It is issued by the Geographical Indications register (Chennai).

What is the advantage of registration of geographical indications?

- It confers legal protection to Geographical Indications in Bharat Prevents unauthorised use of a Registered Geographical Indication by others.

- It promotes economic prosperity of producers of products created during a geographical territory.

What Indications are not registrable?

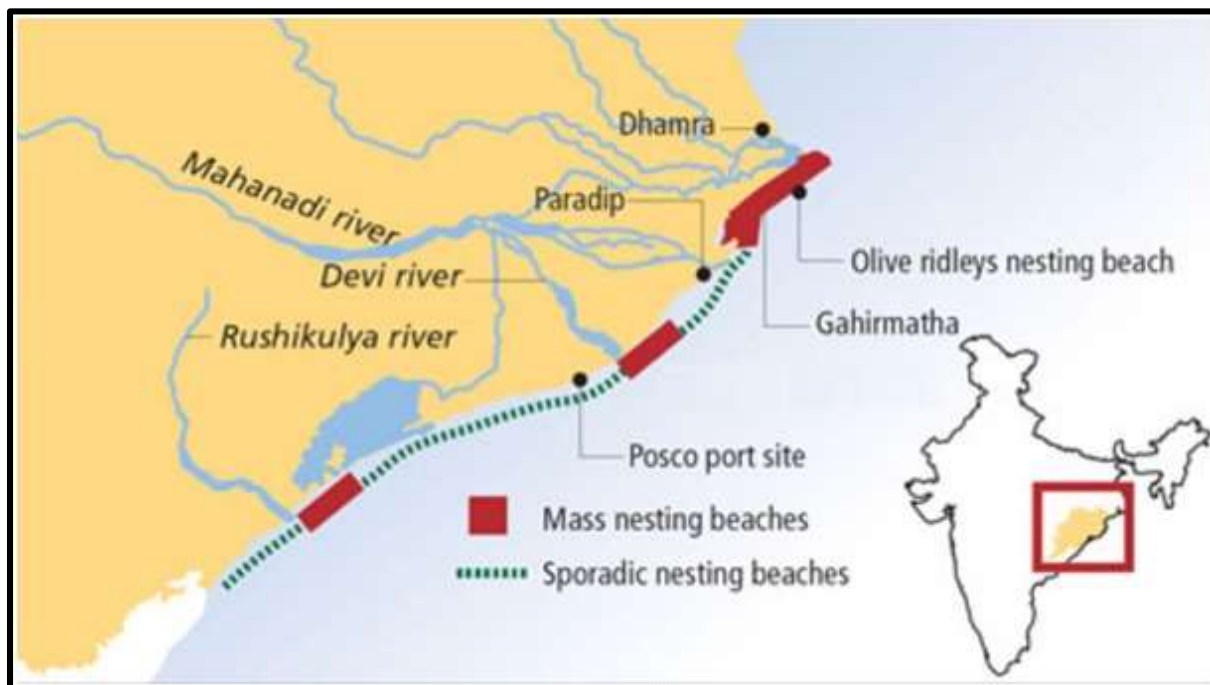
- For registrability, the indications should fall within the scope of section 2(1)e of GI Act, 1999.
- Being so, it's to additionally satisfy the provisions of section 9, that prohibits registration of a Geographical Indication.
 1. the use of which might be doubtless to deceive or cause confusion; or
 2. the use of which might be contrary to any law for the present in force; or
 3. which comprises or contains shameful or obscene matter; or
 4. that contains or contains any matter doubtless to harm the present in force; non secular susceptibilities of any category or section of the citizens of India; or
 5. which might well be demolished to protection during a court; or
 6. which are determined to be generic names or indications of products and are , therefore, not or ceased to be protected in their country of origin or that have fallen into decline therein country; or
 7. which though virtually true on the territory region or neighborhood within which the goods originate, however incorrectly represent to the persons that the goods originate in another territory, region or locality because the case may be.

How long the registration of Geographical Indication is valid?

- The registration of a geographical indication is valid for a amount of 10 years.
- It is revived from time to time for any period of 10 years every.

Topic 3. SECOND HATCHERY FOR OLIVE RIDLEY TO BE SET UP OFF COAST IN VILLUPURAM

Importance for Prelims: Environment



The Villupuram Forest Department will soon be establishing its second artificial hatchery for the endangered Olive Ridley turtles along the district's coastline as part of its conservation initiative to protect turtle nests.

Olive Ridley Turtles:

- The olive ridley turtles are the smallest and most abundant of all ocean turtles found within the world.
- These turtles are carnivores and acquire their name from their olive colored carapace.
- They are best identified for his or her distinctive mass nesting known as Arribada, wherever thousands of females close on the same beach to put eggs

Habitat:

- They are found in heat waters of the Pacific, Atlantic and Indian oceans.
- The Odisha's Gahirmatha Marine Sanctuary is understood as the

world's largest rookery (colony of breeding animals) of sea turtles.

- Protection Status: **IUCN Red List:** Vulnerable **CITES:** Appendix I
rookery Protection Act, 1972: scheduled.

Topic 4. V. O. CHIDAMBARAM PORT

Importance for Prelims:Economy



With PSA Sical Terminals Ltd, one of India's oldest public-private-partnership (PPP) port comes, on the verge of collapse the Centre-owned VO Chidambaranar Port Authority (VOC Port) is gears up with a back-up commit to run the terminal to support the export-import (EXIM) trade.

- V. O. Chidambaranar Port V.O. Chidambaranar Port Trust might be a port in Thoothukudi, Tamil Nadu.
- The port is named after V.O. Chidambaram Pillai, the eminent revolutionary.
- It is one of the 13 major ports in India.
- It was declared to be a big port on 11 July 1974.

- It is second largest port in province and fourth largest instrumentality terminal in India. V.O. Chidambaranar Port may be a man-made port. V.O. Chidambaranar Port is found strategically preparing to the East-West International sea routes on the South eastern coast of India at latitude 8o 45'N and line of longitude 78o 13'E.
- Located at intervals the Gulf of Mannar, with Sri Lanka on the South East and additionally the large land mass of India on the West, V.O. Chidambaranar Port is well protected from the fury of storms and cyclonic winds.
- The port is operational round the clock at some point of the year.

Topic 5. SPUTNIK LIGHT VACCINE

Importance for Prelims: Science & tech



The drugs Controller General of India (DCGI) has given inexperienced signal to emergency use of single-dose satellite light Covid vaccine within the country.

sputnik light Vaccine:

- Sputnik lightweight has been created by Russia's Gamaleya Center, engineered on somebody's adenovirus vector platform.
- It could be a single dose vaccine.
- It is analogous to component-1 of the Russian sputnik V vaccine that has been employed in the India's national vaccination programme.
- The Russian Direct Investment Fund same that the single-dose vaccine has incontestible 70 % efficacy against the malady caused by the Delta variant of Covid-19. sputnik V used 2 different vector for every of the 2 shots in a course of vaccination
- This provides immunity with a extended length than vaccines using the same delivery mechanism for each shots.
- Adenoviruses Adenoviruses (ADVs) are polymer viruses starting from

70-90 nanometre in size, that induces several sicknesses in humans like cold, respiratory tract infection etc.

- Adenoviruses are preferred for vaccines as a result of their polymer is double stranded that makes them genetically additional stable and therefore the possibilities of them changing when injection are lower.
- Rabies vaccinum is an animal virus vaccine. adenovirus vaccinum area unit a sort of microorganism vector vaccine.
- In this vaccine, adenovirus is employed as a tool to deliver genes or vaccine antigens to the target host tissue.
- However, there are drawbacks of adenovirus vector vaccines like pre-existing immunity in humans, inflammatory responses etc.

Central drugs standard control Organisation (CDSCO):

- The CDSCO is that the Central Drug Authority for discharging functions allotted to the Central Government under the medicine and Cosmetics Act.
- **Major Functions:** regulative management over the import of medication, approval of latest drugs and clinical trials. Approval of sure licences as Central Licence Approving Authority Drug Controller General of India(DCGI) DCGI among CDSCO is chargeable for approval of licences of mere classes of drugs like blood and blood product, IV fluids, vaccines and sera in India.
- The DCGI is suggested by the Drug Technical advisory board (DTAB) and therefore the Drug consultative Committee (DCC).
- It comes under the Ministry of Health & Family Welfare.

Topic 6. FREEDOM OF SPEECH AND EXPRESSION

Importance for Prelims: Polity

The question whether the state will use 'national security' as a ground to limit judicial scrutiny has return up for scrutiny once more in the Media One tv channel case when the Supreme Court, in its Pegasus case order, observed that the Centre cannot expect a 'free pass' from the courts as soon because it raises the 'spectre of na- tional security'.

- Freedom of Speech and expression Freedom of Speech and expression suggests that the proper to express one's own opinions freely through speech, writing, printing, pictures or the other mode.
- In India, under Article 19(1), the Constitution of India guarantees to all or any its citizens the proper to freedom of speech and expression.
- However, this freedom isn't absolute and underneath Article 19(2) reasonable restrictions can be obligatory on the exercise of this right for certain purposes.
- Safeguards outlined under Article 19 (2): Article 19(2) permits the state to create laws that prohibit freedom of speech goodbye as they impose affordable restrictions in the:
- **The security of the state:** The term security of state refers only to serious and aggravated styles of public order e.g. rebellion, waging war against the State, insurrection and not normal breaches of public order and public safety.
- **Interests of the sovereignty and integrity of India:** Sovereignty and integrity of India as a ground under Article 19 (2) was else by 16th constitutional amendment act.
- **Friendly relations with foreign states:** This ground was else by the primary amendment Act, 1951.
- **Decency or morality:** Sections 292 to 294 of the Indian penal code offer

instances of restrictions on the liberty of speech and expression within the interest of decency or morality.

- These sections interdict the sale or distribution or exhibition of obscene words, etc. in public places.
- **Contempt of court:** in line with the Section 2 of Contempt of court it may be either contempt of court or criminal contempt.
- **Defamation or incitement to an offence:** a statement, that injures a man's name, amounts to defamation.
- Defamation consists in exposing a person to emotion, ridicule, or contempt.
- **Chilling Effect:** Chilling result is that the thought of deterring free speech and association rights protected by the primary amendment as a results of government laws or actions that seem to focus on free expression.
- The Supreme Court developed and explained the chilling effect doctrine in many opinions involving Freedom of Speech & Expression.

Topic 7. BIMSTEC SUMMIT

Importance for Prelims:IR



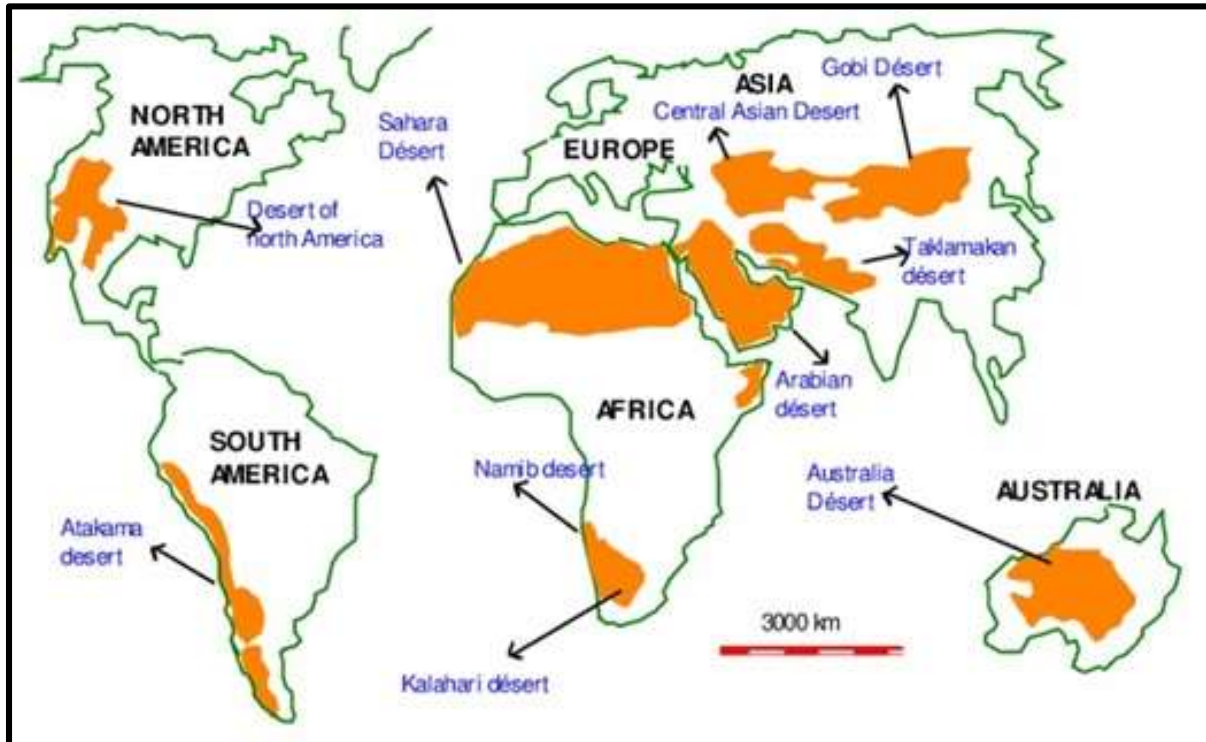
BIMSTEC summit to be held March thirty in Sri Lanka.

- About BIMSTEC The Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) might even be a regional three-way organisation.
- Its members be the littoral and adjacent areas of the Bay of geographic area constituting a contiguous regional unity.
- Out of the seven members, five seven from South Asia – Bangla Desh Bhutan India Nepal Sri Lanka 2 are from southeast asia – Myanmar thailand This sub-regional organization came into being in 1997 through the national capital Declaration.
- Initially, it completely was intentional with four Member States with the shape 'BIST-EC' (Bangladesh, India, Sri-Lanka and thailand Economic Cooperation).
- It became renamed 'BIMST-EC' in 1997, following the inclusion of Myanmar.

- With the admission of Nepal and Bhutan in 2004, the name of the grouping was modified to 'Bay of geographic area Initiative for Multi-Sectoral Technical and Economic Cooperation' (BIMSTEC).

Topic 8. SNOWFALL IN THE SAHARA DESERT: AN UNUSUAL WEATHER PHENOMENON

Importance for Prelims: Geography



Snowfall in a hot desert may seem a contradiction however snow has been recorded many times within the Sahara over the last decades, last in January 2022.

- In order for snow to create, 2 distinctive weather properties are needed: cold temperatures and moist air.
- Although the Sahara ordinarily experiences terribly high temperatures (more than 50°C), low temperatures are recorded (in particular at night) owing to the clean land surface and therefore the clear skies.
- A most cold of -14°C was recorded in Algeria in January 2005 throughout the hemisphere winter.
- Winter air circulation patterns draw cool, wet air towards the northern Sahara from the Atlantic and Mediterranean.
- This leads to higher winter precipitation on the Saharan fringe during

this season.

- It is below these weather conditions, and in these mountainous areas, that snow within the Sahara will sometimes be found.
- Wet air comes into the region from the Atlantic, the Mediterranean, and the Indian Ocean, by low-pressure cyclones within the northern Sahara throughout winter, and monsoon rains within the southern Sahara throughout summer.
- The peripheries of the desert are thus wetter than its centre.
- This implies that snow is additional climate change to create at the edge of the desert.
- The chain specifically act as a snowtrap owing to their proximity to the Atlantic and elevation.
- Globally, however, climate change is resulting in additional unpredictable weather patterns.
- In the Sahara, this could mean hyperbolic variability of precipitation on its wetter Sahelian fringe and on the Atlantic and Mediterranean seaboard (including within the Atlas Mountains).

About Sahara Desert:

- The Sahara is that the world's largest hot desert.
- It spans across 11 countries in northern Africa: Atlantic Ocean, Chad, Egypt, Libya, Mali, Mauritania, Morocco, Niger, Western Sahara, Sudan and Republic of Tunisia.
- It is seagirt by the Atlantic Ocean on the west, the Red Sea on the east, the Mediterranean on the north and therefore the Sahel Savannah on the south.
- It has gravel plains and elevated plateaus with a clean rocky surface.
- **Flora:** Vegetation within the Sahara includes succulent, date palms and tree.

- We will realize an oasis in some places.
- **Fauna:** The animal species found here are camels, hyenas, jackals, foxes, scorpions and many varieties of snakes and lizards.

Topic 9. EPFO

Importance for Prelims:Economy



The Employees' Provident Fund Organisation can meet on March 4-5 in Guwahati to decide on the rate of interest for its subscribers for the financial year 2021-22.

Employees' Provident Fund Organisation (EPFO):

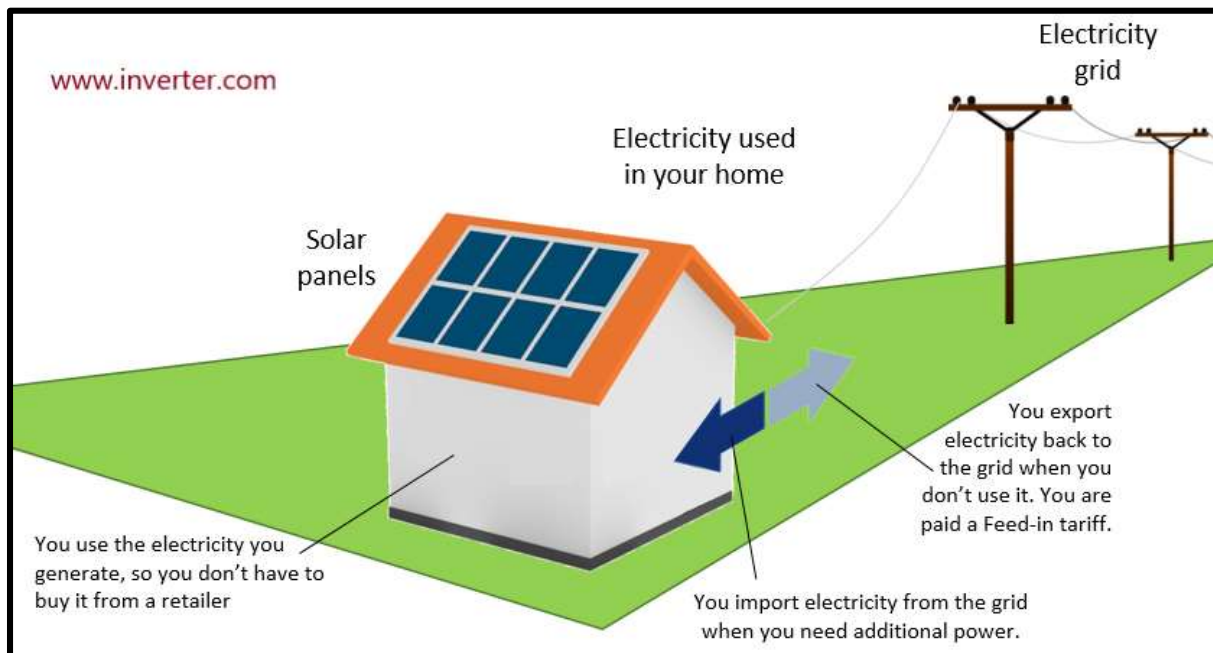
- It could be a government organization that manages provident fund and pension accounts of member staff and implements the Employees' Provident Fund and Miscellaneous Provisions Act, 1952.
- It is run by the Ministry of Labour & Employment, Government of India.
- It is one among the World's largest social security Organisations in

terms of clientele and also the volume of monetary transactions undertaken.

- **Employees Pension scheme (EPS):** it's a social security theme that was launched in 1995.
- The theme, provided by EPFO, makes provisions for pensions for the staff within the organized sector when the retirement at the age of 58 years.
- Employees who are members of EPF mechanically become members of EPS.
- Both EPF and employee contribute 12 % of employee's monthly wage (basic wages and costliness allowance) to the Employees' Provident Fund (EPF) scheme.
- EPF 12-tone music is necessary for workers who draw a basic wage of Rs. 15,000 per month.

Topic 10. RENEWABLE ENERGY POOLING

Importance for Prelims:Economy



The Union power ministry is about to come out with rules to pool star tariffs to accelerate the procural of solar power by power distribution companies.

Why is pooling required?

- A consistent fall in solar power tariffs because of the falling worth of solar panels has led to discoms anticipating an additional fall in tariffs instead of catching PPAs at current prices.
- A move to pool tariffs might facilitate speed up procural of solar power.
- Renewable Purchase Obligation (RPO) mandates that every one discoms meet a minimum such amount of their necessities from renewable energy sources.

What is renewable energy bundling?

- The Centre is encouraging bundling of renewable energy with thermal power under existing PPAs.
- Bundling of renewable energy with thermal power would notably profit recent thermal power comes that became unviable because of

high variable price.

- A move to bundle cheaper renewable energy in these PPAs can enable discoms to lower their average cost of power procural.
- The Centre is targeting bundling of 10,000 power unit of renewable energy with fuel primarily based power over the next 4-5 years.
- As of 2020, 38th of India's put in electricity generation capability is from renewable sources.
- This comes to 136 GW out of 373 GW. and also the government has already set an formidable target to attain 500 gigawatt (GW) of renewable energy capability by 2030.
- **Reverse Bundling Scheme:** The Ministry of latest and Renewable Energy 'reverse bundling' theme for equalisation between coal-fired power and renewable.
- To 'bundle' the solar energy with the cheaper coal fired power.
- This is completed for pushing renewable power in an exceedingly market driven manner.
- It can guarantee 24*7 uninterrupted electricity.
- The policy stipulates offer of 51% renewable energy with or while not energy storage bundled with 49% thermal power part.

Topic 11. BUY NOW PAY LATER

Importance for Prelims:Economy

The ease of access to credit has created BNPL the most most popular product among GenZ consumers, young millennials, new to credit borrowers, who were typically underserved or unnoted by ancient banks.

- What is get currently, Pay Later get now Pay Later or BNPL, because it is popularly celebrated, may be a may be a that permits you to buy a product or get a service while not paying for it directly.
- It's simply a short- term loan product wherever the BNPL loaner pays the bourgeois or service supplier at the point-of- sale and permits you to repay the loan at a future date with very little or no interest charge.
- The repayment will either be in lumpsum or within the kind of equated monthly instalments (EMIs). g. Zest- money, LazyPay, MobiKwik, PaytmPostpaid, Amazon Pay Later, Flipkart Pay Later, Capital Float among others.

In what approach is it different from credit card payment?

- Both credit cards and BNPL ar similar during a sense that each supply deferred repayment options to the receiver.
- However, there ar bound key variations between these 2 credit products.

Topic 12. CROWDING OUT OF PRIVATE INVESTMENT

Importance for Prelims:Economy

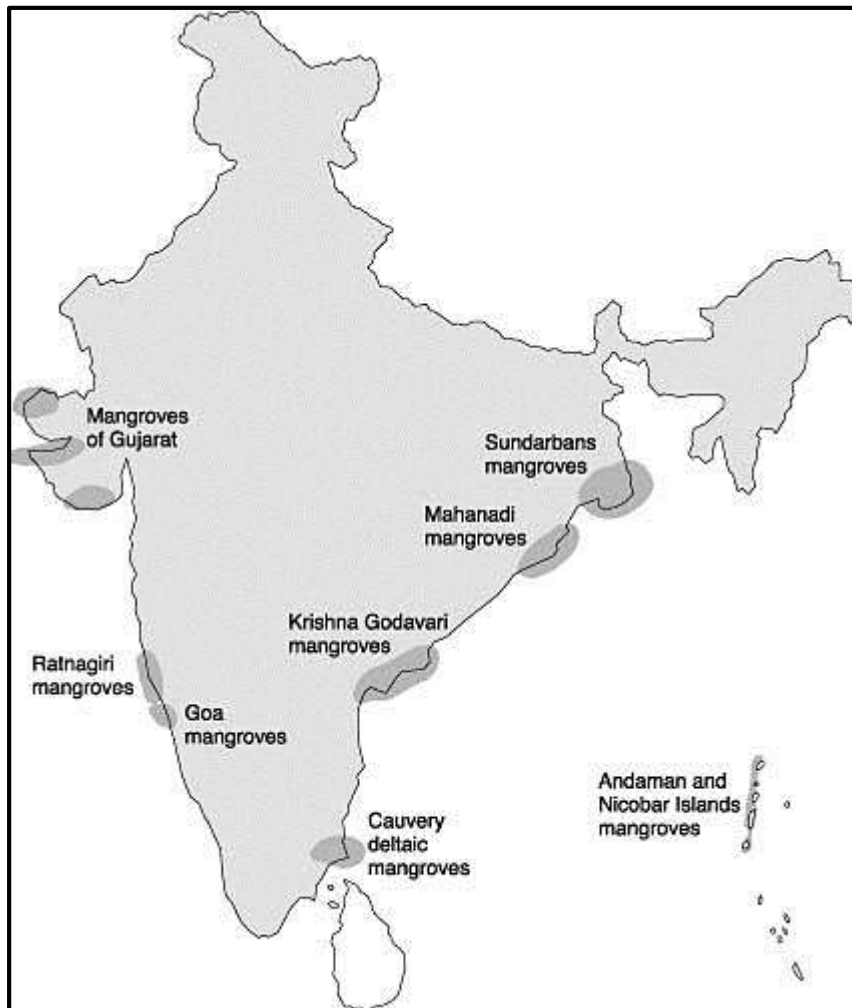
Public borrowing won't crowd out private investment: minister Nirmala Sitharaman urged industry to improve investments and expand capacities, asserting that worries concerning high public capital spending and borrowings crowding out private investments were misplaced.

Crowding out effect:

- A situation once multiplied interest rates result in a discount in camera investment spending specified it dampens the initial increase of total investment disbursement is termed situation out result.
- In alternative words, once the government is increasing its expenditure, private expenditure comes down.
- Sometimes, government adopts an expansionary fiscal policy stance and will increase its disbursement to spice up the economic activity.
- This leads to a rise in interest rates. multiplied interest rates have an effect on private investment selections.
- With higher interest rates, the value for funds to be invested with increases and affects their accessibility to debt finance mechanisms.
- This ends up in lesser investment ultimately and crowds out the impact of the initial rise within the total investment disbursement.
- Usually the initial increase in government disbursement is funded using higher taxes or borrowing on a part of the government.
- Some believe that government disbursement doesn't continually result in a situation out of private investment within the economy. They instead argue that government demand for funds will compensate for the lack of personal demand for funds throughout economic depressions, therefore serving to to prop up aggregate demand.

Topic 13. MANGROVES

Importance for Prelims: Environment



As per WWF, around 300-400 million people world-over rely on wetlands for their livelihoods or protection against floods and different storms. Yet, it's calculable that the world has lost 87 of its wetlands since decennium as a result of development activities that have additionally pushed many species to the brink of extinction.

About Manroves:

- A mangrove may be a tiny tree or shrub that grows on coastlines, taking root in salty sediments, typically underwater.
- Mangroves are flowering trees, happiness to the families rhizophoraceae, acanthaceae, Lythraceae, combretaceae, and arecaceae.

- Mangroves are found solely along secure coastlines among the tropical or semitropical latitudes because they can not withstand freezing temperatures.
- **Features of Mangroves:** they will survive under extreme hostile environments like high salt and low oxygen conditions.
- Hence the mangrove scheme absorbs oxygen from the atmosphere. Mangroves have special roots for this purpose referred to as breathing roots or pneumatophores.
- With their roots submerged in water, mangrove trees thrive in hot, muddy, salty conditions that will quickly kill most plants.
- **Succulent leaves:** Mangroves, like desert plants, store fresh water in thick succulent leaves.
- A waxy coating on the leaves seals in water and minimises evaporation.
- **Viviparous:** Their seeds germinate whereas still connected to the parent tree. Once germinated, the seedling grows into a propagule.
- **Global mangrove Cover:** the overall mangrove cover within the world is one 1,50,000sqkms.
- Asia has the most important variety of mangroves worldwide. South Asia comprises 6.8% of the world's mangrove cover.
- India's contribution is 45.8% total mangrove cover in South Asia.
- **Mangroves in India:** in line with the India State of Forest Report, 2019, the mangrove cover in India is 4,975 sq km, which is 0.15% of the country's total region.
- West Bengal has the very best percentage of area under total Rhizophora mangle cover followed by Gujarat and Andaman Nicobar Islands.
- Sundarbans in West Bengal are the most important mangrove forest regions within the world.
- It is listed as a UNESCO World Heritage site.

- The forest is home to the Royal bengal tiger, Gangetic dolphins and water crocodiles.
- The second largest mangrove forest in India is Bhitarkanika in Odisha created by the 2 river deltas of stream Brahmani and Baitarani.
- It is one in every of the most important Ramsar wetlands in India.

Topic 14. PM MATRU VANDANA YOJANA

Importance for Prelims: Governance

Saaf Niyat Sahi Vikas

Government of India
Ministry of Women and Child Development

PRADHAN MANTRI MATRU VANDANA YOJANA

Pregnant Women and Lactating Mothers to get upto **₹ 6,000**

Over **26 lakh** beneficiaries

₹ 440 Crore released to **17.4 lakh** beneficiaries

PMMVY-Common Application Software (PMMVY-CAS) launched on 1st September 2017

Pan-India expansion of Maternity Benefit Programme Since 1st January 2017

10 YEARS 2014-2018

(as on 31.03.18)

wcd.nic.in | /PMOIndia | /MinistryWCD | @Manekagandhibjp | /ManekaGandhiOfficial

The government's has recently announced that the maternity benefit programme which provides ₹5,000 for first child will be extended to cover the second child only if it is a girl.

- The Pradhan Mantri Matru Vandana Yojana (PMMVY): The Pradhan Mantri Matru Vandana Yojana (PMMVY), launched in 2017, provides ₹5,000 for the birth of the first child to partially compensate a woman for loss of wages.
- It may be a centrally sponsored scheme being run by the Ministry of women and child Development.
- Direct benefit Transfer Scheme: cash directly provided to pregnant

girls in their bank account on to meet increased organic process desires and partly atone for wage loss.

- It conjointly aims to enhance the organic process well-being of the mother and therefore the child.
- Beneficiaries receive a cash advantage of Rs. 5,000 in 3 installments on fulfilling the subsequent conditions: Early registration of pregnancy Ante-natal check-up Registration of the birth of {the child|the kid} and completion of initial cycle of vaccination for the primary living child of the family.
- It is combined with another theme, Janani Suraksha Yojana, under that nearly ₹1,000 is given for an institutional birth, in order that a lady gets a total a total,000.
- .□Under the revamped PMMVY below Mission shakti, the maternity benefit amounting to ₹6000 is additionally to be provided for the second child, however as long as the second may be a girl child, to discourage pre-birth sex selection and promote the girl child.
- National Food Security Act, 2013 lays down that each pregnant lady and fresh mother are entitled to maternity edges.

Topic 15. ARAVALLI BIODIVERSITY PARK-OECM SITE

Importance for Prelims:Environment

On the occasion of World Wetlands Day(February 2) the Aravalli biodiversity Park was declared India's first "other effective area-based conservation measures" (OECM) site.

What is the OECM tag?

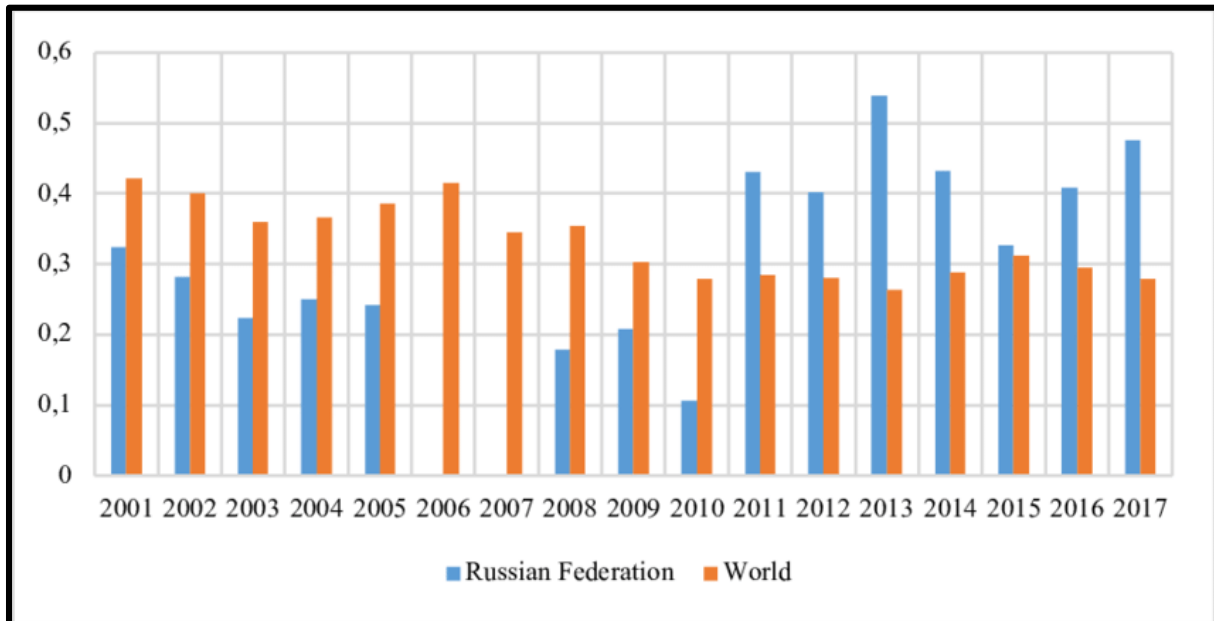
- OECM is a geographically outlined area apart from a Protected area, that is ruled and managed in ways in which win positive and sustained long-run outcomes for the in place conservation of biodiversity, with associated scheme functions and services and wherever applicable, cultural, spiritual, socio-economic, and other locally relevant values.
- The OECM tag is given by the International Union for Conservation of Nature (IUCN) to areas that aren't protected however support rich biodiversity.
- It doesn't bring any legal, monetary or management implications, however designates the area as a diverseness hotspot on the international map.
- The OECM areas were outlined at the Convention on Biological Diversity that was held in 2018.
- The proposal to declare Aravalli biodiversity Park an OECM web site was sent by the National biodiversity Authority to the IUCN in December 2020.
- About the Aravalli biodiversity ParkIt is spread across 390 acres close to Gurgaon, Haryana and contains ecologically restored and semi-arid land vegetation.
- It has around 300 native plants, 101,000 trees, 43,000 shrubs, and a number of other species of birds.
- The park was transformed into a city forest from a 40-year-old mining

site through the efforts of citizens, ecologists and scientists along side the help of the urban native body of Gurugram.

- These valleys were restored with native plants that helped in seasonal water accumulation, creating them special micro-habitats among the larger Aravalli landscape.
- The Aravallis, one of the oldest mountain ranges within the world, are considered the inexperienced lungs of Delhi-NCR, a crucial water recharge zone for the region.

Topic 16. AGRICULTURE ORIENTATION INDEX

Importance for Prelims: Agriculture



The Food and Agriculture Organization (FAO) of the United Nations (UN) report for 2001 to 2019 shows that, globally, India is among the highest 10 countries in terms of government spending in agriculture, constituting a share of around 7.3% of its total government expenditure. However, India lags behind many low-income countries like Malawi (18%), Mali (12.4%), Bhutan (12%), Nepal (8%).

- **Agriculture Orientation Index:** The Agriculture Orientation Index (AOI) for government Expenditures is outlined because the Agriculture Share of government Expenditures, divided by the Agriculture Share of GDP, wherever Agriculture refers to the agriculture, forestry, fishing and searching sector.
- In different words, it measures the ratio between government disbursement towards the agricultural sector and also the sector's contribution to GDP.
- The index could be a currency-free index, calculated because the ratio of those 2 shares.
- This indicator can live progress towards SDG Target two.a.(Zero

hunger).

- An Agriculture Orientation Index (AOI) larger than one reflects the next orientation towards the agriculture sector, that receives the next share of government disbursement relative to its contribution to economic added.
- An AOI but one reflects a lower orientation to agriculture, whereas an AOI equal to one reflects neutrality in a very government's orientation to the agriculture sector.
- India's index is one amongst the lowest, reflective that the disbursement towards the agricultural sector isn't coterminous with the sector's contribution towards GDP.
- India holds only the 38th rank within the world, despite being an agricultural economy whereby a large population relies on the agricultural sector for its living, and despite being among the biggest producers of many crops created and consumed within the world.

Topic 17. MUMBAI'S POLLUTION

Importance for Prelims:Environment

Mumbai has seen unco high levels of pollution in the week, with its air quality index reading oftentimes on top of 300, at times matching Delhi's AQI.

- An AQI between 301 and 400 is classified as 'red' or 'very poor'.
- The AQI in metropolis touched 316 on Sunday, followed by 318 on Monday and 320 on Tuesday morning.
- On Tuesday, the AQI in Mazgaon, the foremost contaminated space within the city, rose to 495, a reading within the 'severe' class, per the Ministry of Earth Science's System of Air Quality and weather forecasting research (SAFAR).

What is inflicting the rise in pollution levels in Mumbai?

- According to Safar, the present high pollution is because of a sandstorm that has hit the city.
- This storm originated on February 3 over afghanistan, Pakistan, and therefore the border areas of Rajasthan.
- Low day temperatures, weak, low-speed winds, high ratio, and coldness of the air are causative to the dangerous air on top of the town.
- In mumbai, a windswept coastal town, the contaminated air is frequently clean out by a robust sea breeze.
- Low wind speeds have, however, caused native pollutants hanging on top of the city & haven't been effectively dispersed. SAFAR
- 1. The System of Air Quality and foretelling And research (SAFAR) could be a national initiative introduced by the Ministry of Earth Sciences (MoES) to live the air quality of a metropolitan town, by measuring the pollution level and therefore the location-specific air quality of the town.
2. The system is indigenously developed by the Indian Institute of Tropical Meteorology (IITM), Pune and is operationalized by the India

meteoric Department (IMD).

3. it's a large true color led show that provides out period air quality index on a 24×7 basis with color-coding (along with 72 hours advance forecast).

4. It monitors all weather parameters like temperature, rainfall, humidity, wind speed, and wind direction, uv radiation, and radiation.

5. Pollutants monitored: PM2.5, PM10, Ozone, carbon monoxide (CO), nitrogen Oxides (NO_x), sulfur dioxide (SO₂), Benzene, Toluene, Xylene, and Mercury.

Air Quality Index:

- The AQI is an index for coverage daily air quality.
- The activity of air quality is predicated on eight pollutants, namely: particulate matter (PM10), particulate (PM2.5), nitrogen dioxide (NO₂), sulphur dioxide (SO₂), carbon monoxide (CO), Ozone (O₃), Ammonia (NH₃), and Lead (Pb).
- AQI has six classes of air quality.
- These are: smart, Satisfactory, Moderately contaminated, Poor, terribly Poor and Severe.
- It has been developed by the CPCB in consultation with IIT-Kanpur and an expert group comprising medical and air-quality professionals.
- The higher the AQI, the larger the extent of pollution and therefore the additional serious the health concern.

Topic 18. PARLIAMENTARY STANDING COMMITTEES

Importance for Prelims: Polity

The Parliamentary standing committee on Rural Development spotlighted the failure to pay unemployment allowances and conjointly counseled a hike in wage rates and within the variety of days of bonded work, and a revision of the 60:40 wage-material ratio under the scheme.

- The Constitution of India makes a mention of those committees at totally different places, however while not creating any specific provisions concerning their composition, tenure, functions, of these matters are dealt by the rules of 2 houses.
- Accordingly, a parliamentary committee suggests that a committee that:
Is appointed or nonappointive by the House or appointed by the Speaker / Chairman
Works under the direction of the Speaker / Chairman
Presents its report back to the House or to the Speaker / Chairman
incorporates a secretariat provided by the Lok Sabha / Rajya Sabha
- The introduction of 17 department-related standing committees (DRSCs) on March 31, 1993 was a significant innovation that multiplied parliamentary scrutiny and gave MPs a bigger role in examining legislation and necessary choices of the day.
- There are 24 DRSCs — 16 from Lok Sabha and 8 from Rajya Sabha. every committee has 21 MPs from Lok Sabha and 10 from Rajya Sabha.
- **Role of DRSCs:** Given the degree of legislative business and therefore the time constraints it's not possible for MPs to debate and scrutinise all bills within the House.
- Parliamentary committees, either formed for a selected bill (select committee) or permanent (standing committees that square

measure reconstituted annually) allow ascrutiny with the possibility of tapping subject specialists fromoutside and alternative stakeholders in an environment where MPs don't seem to be certain by party positions or whips.

Topic 19. OCI (OVERSEAS CITIZEN OF INDIA)

Importance for Prelims: Polity

The Supreme Court directed the Indian Institute of Technology-Madras (IIT-M) to charge a student happiness to the Overseas subject of India (OCI) category a similar fee paid by an Indian subject for the 2021-2022 year. The OCI students are also|are} permissible to be treated at par with Indian students and are allowed to use to any course/courses for the academic year 2021-2022

- **Overseas Citizenship of India:** The Ministry of Home Affairs defines an OCI as an individual who: Was a subject of India on or once 26th January 1950; or Was eligible to become a citizen of India on 26th January 1950; or may be a child or offspring of such a person, among alternative eligibility criteria.
- According to Section 7A of the OCI card rules, an applier isn't eligible for the OCI card if he, his parents or grandparents have ever been a citizen of Pakistan or Bangla Desh.
- The category was introduced by the government in 2005.
- The Government of Bharat via Citizenship (Amendment) Act, 2015 united the Person of Indian Origin (PIO) class with OCI category in 2015.
- **Benefits to OCI Cardholders:** OCI cardholders will enter india multiple times, get a multipurpose long visa to go to India, and are exempt from registering with Foreigners Regional Registration workplace (FRRO).
- If a personal is registered as an OCI for a amount of 5 years, he/she is eligible to use for Indian citizenship.
- OCI cardholders will open special bank accounts in india, purchase the non-farm property and exercise possession rights and may additionally apply for a Permanent Account range (PAN) card.

- **Limitations:** OCI cardholders don't get voting rights, cannot hold a government job and buy agricultural or farmland.
- They cannot travel to restricted areas while not government permission.

Topic 20. FOREIGN CONTRIBUTION TO NGO's

Importance for Prelims: Polity

The Ministry of Home Affairs has renewed the FCRA (Foreign Contribution (Regulation) Act) registration of Public Health Foundation of India (PHFI), a public health support cluster. The move comes four years once the organisation was barred from receiving foreign funds for lobbying with parliamentarians, the media and the government on tobacco management problems.

- Foreign Contribution (Regulation) Act (FCRA), 2010 Foreign funding of persons in India is regulated under FCRA Act and is enforced by the Ministry of Home Affairs.
- Individuals and NGOs are permissible to just accept foreign contributions while not permission of MHA.
- However, the financial limit for acceptance of such foreign contributions shall be but Rs. 25,000.
- The Act ensures that the recipients of foreign contributions adhere to the stated purpose that such contribution has been obtained.
- Under the Act, organisations are needed to register themselves each 5 years.
- Foreign Contribution (Regulation) modification Act, 2020 Prohibition to accept foreign contribution: The Act bars public servants from receiving foreign contributions.
- Public servant includes a person who is in commission or pay of the government, or compensated by the government for the performance of any public duty.
- The Act prohibits the transfer of foreign contributions to the other person not registered to just accept foreign contributions.
- The Act makes Aadhaar number necessary for all workplace bearers, administrators or key functionaries of an individual receiving foreign

contribution, as an identification document.

- The Act states that foreign contribution should be received only in an account selected by the bank as FCRA account in such branches of the banking concern of India, New Delhi.
- The Act proposes that less than 200th of the entire foreign funds received can be defrayed for administrative expenses.
- In FCRA 2010 the limit was 500th.

Topic 21. INDIA'S NEWEST MAMMAL: WHITE CHEEKED MACAQUE

Importance for Prelims: Environment



Scientists from the Zoological Survey of India (ZSI) have found a new craniate species within the country — the White Cheeked macaque.

- While the macaque was 1st discovered in China in 2015, its existence wasn't familiar in India before this.
- Indian scientists have discovered its presence within the remote Anjaw district in central Arunachal Pradesh.
- The White Cheeked macaque has distinct white cheeks, long and thick hair on the neck and a extended tail than alternative macaque species.
- It is that the last craniate to own been discovered in Southeast Asia.
- Both the Arunachal macaque as well because the White Cheeked macaque exist within the same diversity hotspot within the eastern himalayas.
- The white-cheeked macaque lives in forest habitats, from tropical forests to primary and secondary evergreen broad-leafed forests and mixed broadleafconifer forests.

Topic 22. POLYGON NETWORK

Importance for Prelims: Science & Tech



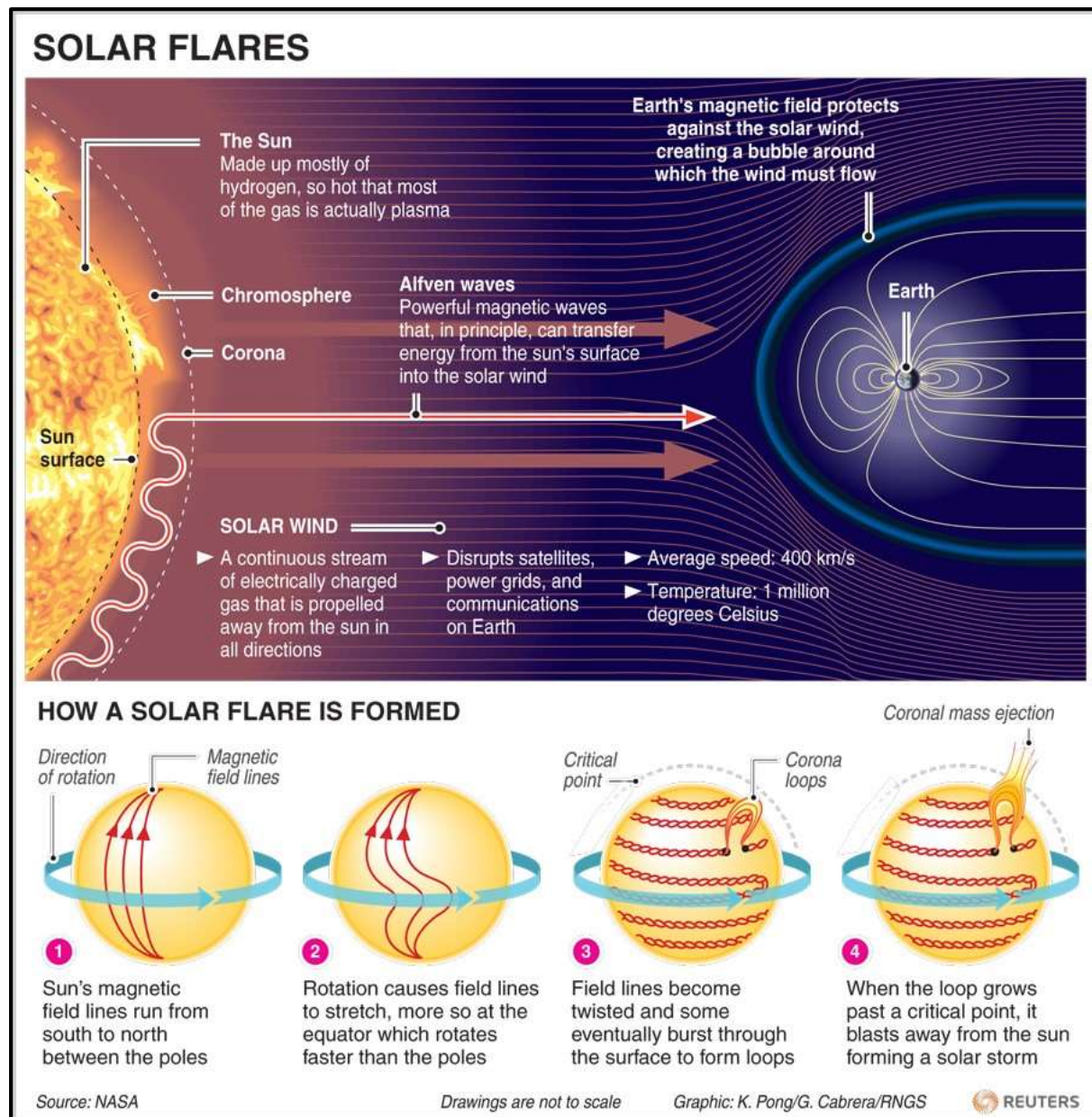
In the biggest spherical of investments in an Indian blockchain venture, marquee investment corporations have infused \$450 million in polygon, a suburbanised scaling platform for ethereumblockchain.

- **polygon Network:** Polygon is actually a “Layer 2” network designed on the Ethereumblockchain to mitigate the traffic load on the most blockchain.
- It is a decentralized finance (DeFi) platform that facilitates peer-to-peer transactions with attention on permitting users to transfer or swap tokens across different blockchains.
- For example, a client might use Poly Network to transfer tokens like bitcoin from the Ethereumblockchain to the Binance good Chain, maybe trying to access a selected application.
- Tokens are swapped between the blockchains using a good contract that contains directions on once to release the assets to the counterparties.
- It could be a layer solution resolution, i.e it works on prime of Ethereum’s primary blockchain.

- Polygon uses aspect chains to disengage the most platform in an exceedingly smart and cost-efficient manner.
- Polygon's multi-chain network provides an infrastructure for facilitating blockchain networks which will communicate with one another outside of Ethereum's primary chain though it retains Ethereum's liquidity, security and ability.

Topic 23. GEOMAGNETIC STORMS THAT KILLED STARLINK SATELLITES

Importance for Prelims: Science & Tech



Elon Musk's Starlink has lost dozens of satellites that were caught in a geomagnetic storm a day once they were launched inflicting them to fall from orbit before they might be commissioned.

- Geomagnetic storms: Geomagnetic storms occur once a surge of solar wind — charged particles from the sun — smashes into Earth's magnetic

field and generates charged particles and currents in Earth's higher atmosphere.

- They occur during the discharge of magnetic energy related to sunspots e. 'dark' regions on the Sun that area unit cooler than the encompassing surface, and may last for a couple of minutes or hours.
- The surge warms the higher atmosphere and will increase its atmospherical density such that the drag intimate by satellites in low Earth orbit are often enough to send them tumbling back to Earth.
- It will hit operations of space-dependent services like world positioning systems (GPS), radio, and satellite communications.
- Geomagnetic storms interfere with high-frequency radio communications and GPS navigation systems.
- The geomagnetic storm intimate by the STARLINK satellites came from solar wind kicked out by a January. 30 coronal mass ejection — an eruption of the sun.
- Starlink Network: Starlink could be a SpaceX project to create a broadband network with a cluster of orbiting orbiter.
- The service offers low-latency broadband internet to remote areas across the world, using a constellation of satellites in low-Earth orbit.
- In alternative words, it permits users to attach to the net beamed from space onto a dish antenna, much like satellite TV.

Topic 24. QUESTION HOUR

Importance for Prelims: Polity

Senior Congress leader Jairam Ramesh said within the Rajya Sabha on Wednesday that this was the primary time in seventy years that no cabinet Minister had replied to queries expose by members during the Question Hour.

Question Hour:

- Question Hour is that the initial hour of a sitting session of India's Lok Sabha dedicated to queries that Members of Parliament raise concerning any side of body activity.
- The involved Minister is obliged to answer to the Parliament, either orally or in writing, counting on the sort of question raised.
- Questions are one in all the ways that Parliament will hold the chief responsible.
- There are four varieties of question—Starred, non-starred, short notice question and inquiries to personal members.
 1. asterisked queries are those that an oral answer is anticipated. Answer to such question is also followed by supplementary queries by member. These queries are written in inexperienced color and are marked with asterisk sign '*', so as to differentiate from different queries.
 2. Non-starred queries are those that a written reply is anticipated. once the reply has been provided, no supplementary question is asked. These queries area unit written in white color and no more than 230 queries is listed for daily in loksabha.
 3. Short notice queries are those that are asked on matters of pressing public importance and therefore, is asked on a shorter notice i.e. but 10 days. These queries is answered orally and supplementary queries is asked. These queries are written in light pink color.
 4. inquiries to personal members area unit those that are asked to

members who aren't ministers. These queries are related to personal member's bills, parliamentary committees, personal member resolutions. These queries are written in Yellow color.

Topic 25. NEW CENTRE FOR CARBON CAPTURE UTILISATION AT IIT BOMBAY

Importance for Prelims:Environment

The Department of Science & Technology (DST) under the Union Ministry of Science and Technology has established the National Centre of Excellence in Carbon Capture and utilisation (NCOE-CCU) at Indian Institute of Technology (IIT) Bombay.

About NCOE-CCU:

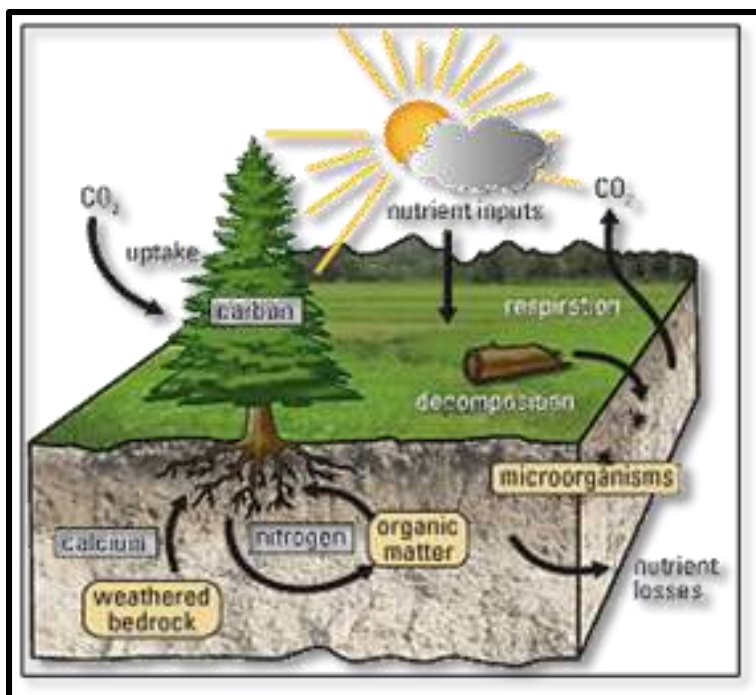
- This Centre of Excellence explores and unlocks the potential of Carbon Capture and Utilization (CCU) technologies to set India on the path to achieving its climate goals and commitments.
- The Centre's primary focus of analysis can involve understanding the role of carbonic acid gas within the international climate and mitigation methods of the CO₂ emitted from the commercial and energy sector.
- The NCOE-CCU, is that the country's 1st such centrally funded by the DST. It absolutely was formally sanctioned in December 2021.
- The NCOE has partnerships with many academic and analysis institutes (such as alternative IITs, universities, and CSIR labs) and industries as well as crude, cement, power, and steel.
- The NCOE are nodal for progressive analysis and application-oriented initiatives within the field of CCUS.
- **Carbon Capture, Utilization and Storage (CCUS):** CCUS technology is intended to capture CO₂ emissions from combustion of fossil fuels.
- It will absorb 85-95% of CO₂ emissions within the atmosphere.
- The method starts with the capture of generated CO₂ that

undergoes a compression method to make a dense fluid.

- This eases the transport and storage of the captured CO_2 .
- The dense fluid is transported via pipelines and so injected into an underground storage facility.
- Captured CO_2 may also be used as a staple in alternative industrial processes like bicarbonates.

Topic 26. KAZIRANGA NATIONAL PARK IS A NET CARBON EMITTER

Importance for Prelims: Environment



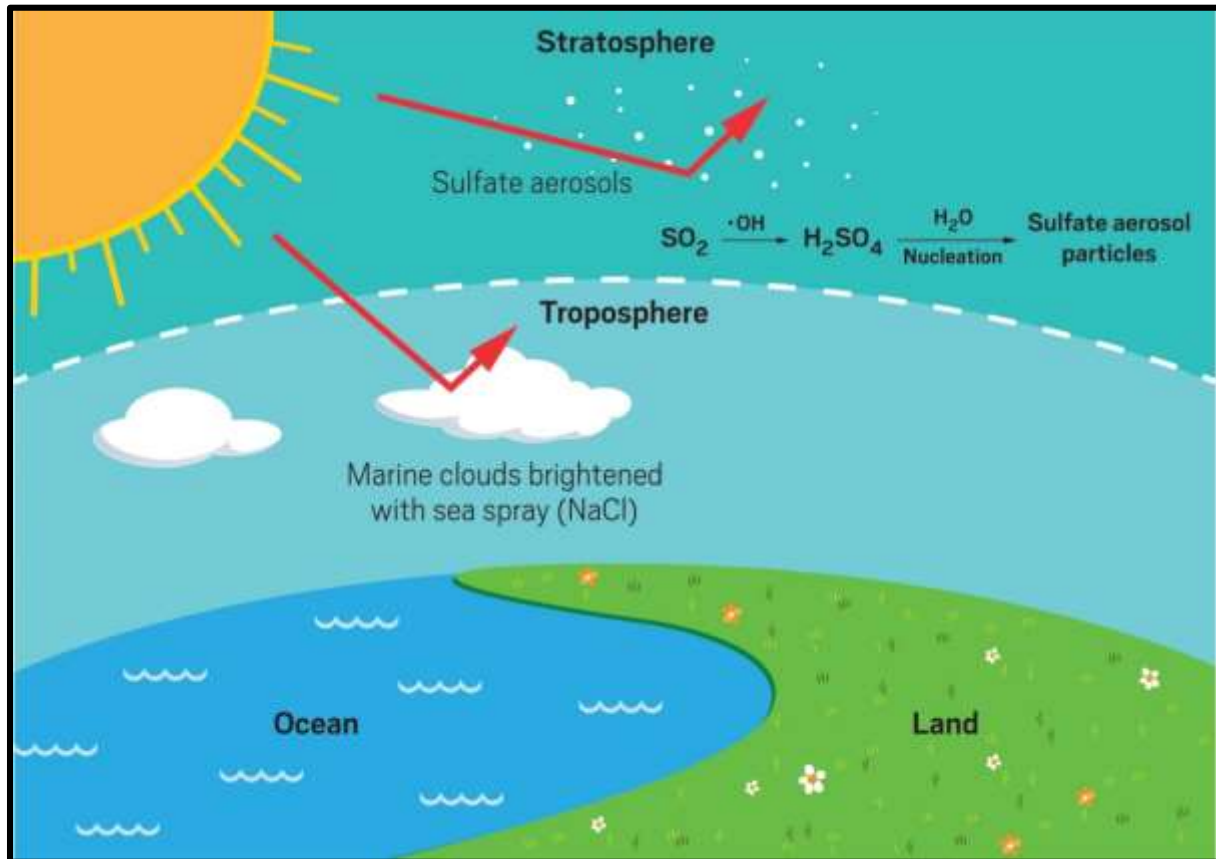
The soil in Kaziranga is home to a large population of bacteria that unharness carbon dioxide as they breathe, adding to what trees and others emanate.

Why Kaziranga a internet Carbon emitter:

- This is principally thanks to decreasing rainfall within the region, that has already been determined within the last few decades.
- It is thanks to the distinctive soil of the deciduous forest.
- The soil is home to a large population of bacteria that unharness carbon dioxide as they breathe, that adds to the carbon dioxide being emanated by different organisms, as well as trees.
- This is consistent with latest analysis conducted by a group of scientists from the Indian Institute of Tropical Meteorology, Pune, Maharashtra and Tezpur University in Tezpur, Assam.
- Usually, forests absorb additional carbon than they unharness, that makes them carbon sinks and that they are globally promoted to counter the carbon dioxide emissions from totally different human activities.
- The main method by that a forest absorbs carbon is that the process of photosynthesis that trees use to provide food for themselves and for different organisms within the forest.
- **Kaziranga national park:** Kaziranga National Park in assam, home to the largest-population of the onehorned rhinoceros within the world.
- It was declared as a park in 1974. it's been declared a tiger reserve since 2007.
- It features a total tiger reserve area of 1,030 sq km with a core area of 430 sq. km.
- It was declared a UNESCO World Heritage site in 1985.
- It is recognized as a vital Bird area by BirdLife International.

Topic 27. SOLAR GEOENGINEERING

Importance for Prelims: Science & Tech



Scientists are calling on political institutions to position limits on solar geoengineering analysis so it can't be deployed unilaterally by countries, corporations or individuals.

- Solar Geoengineering: Geoengineering is additionally called climate engineering.
- It could be a abstract technique of reducing the negative effects of climate change by removing the carbon dioxide from the atmosphere or by limiting the quantity of sunlight reaching the planet's surface.
- Solar geoengineering could be a specific type of albedo modification within which extremely reflective particles i.e. aerosols are introduced into the atmosphere to extend Earth's albedo.
- This would cut back incoming light (radiation) from the sun, and thereby

decrease the quantity of energy (heat) reaching Earth's surface. radiation Management and Ocean Iron Fertilization are types of geoengineering or climate engineering.

- Solar geoengineering's leading proposal of injecting billions of aerosol particles into the Earth's stratosphere may have severe, uncaused and unforeseen consequences.
- The color of the sky may change.
- The chemical composition of the ozone layer and oceans is also for good altered.
- Photosynthesis, that depends on sunlight, could prevent, probably harming diversity and agriculture.
- And world weather patterns may change erratically.

Topic 28. SOVEREIGN GREEN BONDS

Importance for Prelims:Economy

Despite govt's climate focus, grants to key adaptation fund are sliding. The Union Budget 2022-23 stressed sovereign green bonds and thematic funds for blending finance in areas as well as climate action.

Sovereign green Bonds:

- Green bonds, issued through the reserve bank of India, are part of the government's overall borrowing programme and used for comes resulting in a less carbon economy.
- The take are deployed in public sector comes that facilitate in reducing the carbon intensity of the economy.
- The announcement is in set with India's commitment to achieving net-zero carbon emissions by 2070.
- **Green Bonds:** Green bonds are issued by firms, countries and multilateral organisations to completely fund comes that have positive environmental or climate edges and supply investors with fastened income payments.
- The comes will embrace renewable energy, clean transportation and inexperienced buildings, among others.
- Proceeds from these bonds are earmarked for inexperienced comes.
- This is not like normal bonds, the take of which may be used for numerous functions at the discretion of the issuer.

Topic 29. GOVERNOR V/S FEDERAL STRUCTURE

Importance for Prelims: Polity

Governor R.N. Ravi returning the National Eligibility-cum-Entrance test (NEET) Bill passed by the Tamil Nadu Assembly and therefore the running battle between province Governor Jagdeep Dhankhar and Chief Minister Mamata Banerjee underline once more the problematic role that governors play in Indian politics.

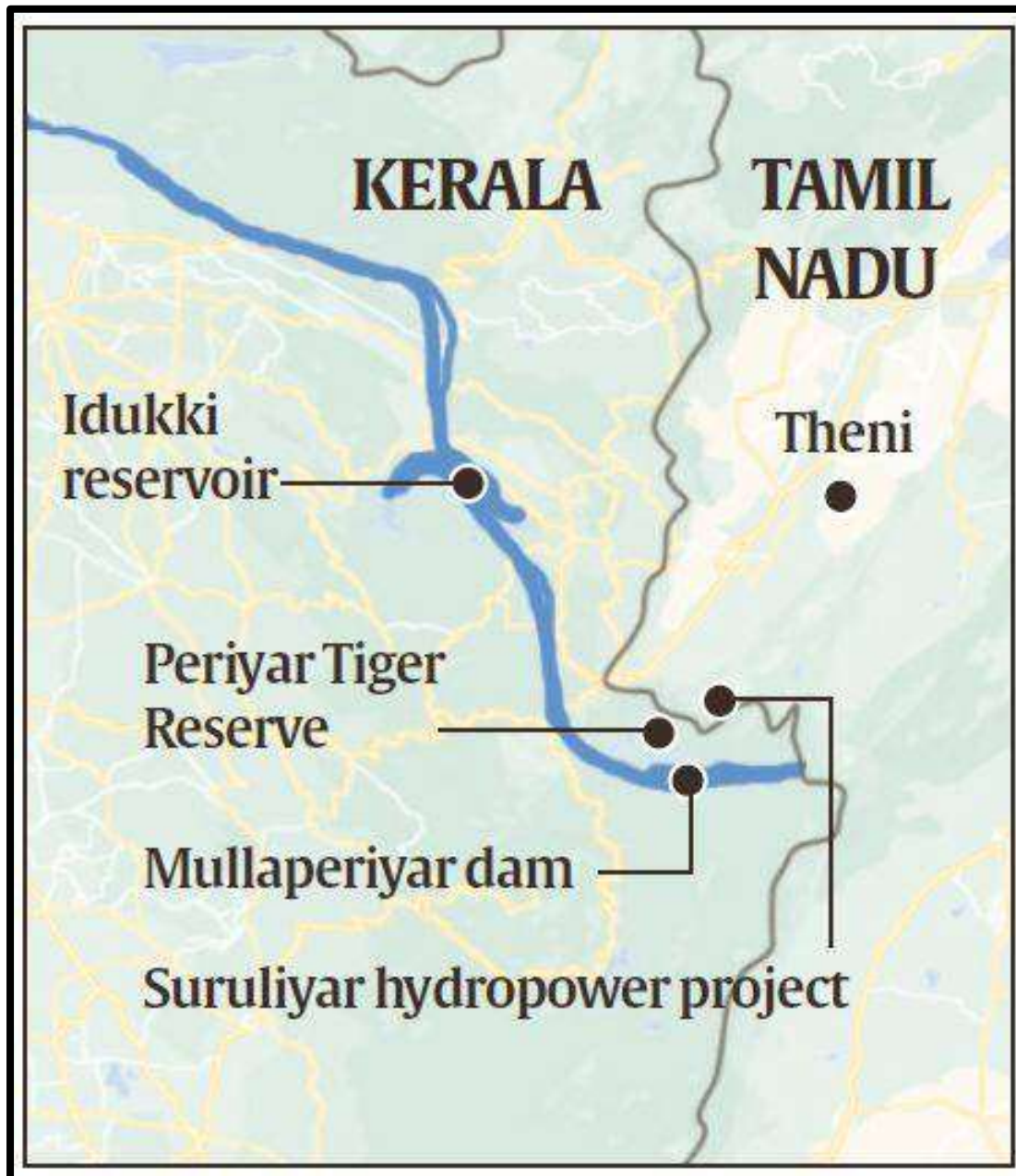
Constitutional Position of Governor:

- The provisions of Articles 154, 163, and 164 of the Constitution empower the constitutional post of Governor.
- **Article 153** of the Indian Constitution mandates the appointment of a Governor in every state. The 7th modification to the Constitution but, permits for the appointment of constant person as Governor of 2 or additional states.
- **Article 154:** The Governor shall have executive power over the state, that he shall exercise either directly or through officers subordinate to him in conformity with this Constitution.
- **Article 163:** There shall be a council of ministers, led by the Chief Minister, to help and advise the Governor within the exercise of his powers, except once he's compelled to execute his functions at his discretion.
- **Article 164:** The council of ministers is jointly accountable to the state's assembly.
- This provision is that the cornerstone of the state's parliamentary system of governance.
- **Constitutional Provisions for federalism in India:** The several legislative powers of states and Centre are traceable to Articles 245 to 254 of the Indian Constitution.

- The Seventh Schedule of the Constitution contains 3 lists that distribute power between the Centre and states (Article 246).
- The SC in *SatPal v State of Punjab and Ors* (1969), control that the Constitution of India is additional Quasi-federal than federal or unitary.
- A Federal theorist K.C. Wheare has argued that the nature of Indian Constitution is quasi-federal in nature.

Topic 30. MULLAPERIYAR DAM

Importance for Prelims: Environment





In January this year, the Central Water Commission told Supreme Court that no review on the security of Mullaperiyar was exhausted the past 12 years. However, it additionally maintained that reports indicate that the dam is safe all told respects, hydrologically, structurally, and seismically.

- Though placed geographically in Kerala, the 126-year-old Mullaperiyar Dam is owned, operated, and maintained by the province government and has been a degree of dispute between the 2 neighbouring states for decades.
- **About Mullaperiyar Dam:** The Mullaperiyar dam is found on the confluence of the Mullayar and Periyar rivers in Kerala's Idukki district.
- The dam stands at the peak of 53.66 metres and 365.85 metres long.
- It is operated and maintained by the province for meeting the drink and irrigation requirements of 5 of its southern districts.
- According to a 999-year lease agreement created during the british rule the operational rights were handed over to province.

- The dam intends to divert the waters of the west-flowing stream Periyar eastward to the arid rain shadow regions of the province.
- Periyar river The Periyar river is that the longest river within the state of Kerala with a length of 244 km.
- Periyar river originates from Sivagiri hills of Western Ghats and flows through the Periyar national park.
- It is additionally called '**Lifeline of Kerala**' because it is one among the few perennial rivers within the state.
- **The main tributaries of Periyar are:** Muthirapuzha, Mullayar, Cheruthoni, Perinjankutti.

Topic 31. INDO PACIFIC REGION

Importance for Prelims:IR



The United States remains focussed on the Indo-Pacific region despite considerations over Russian aggression toward Ukraine.

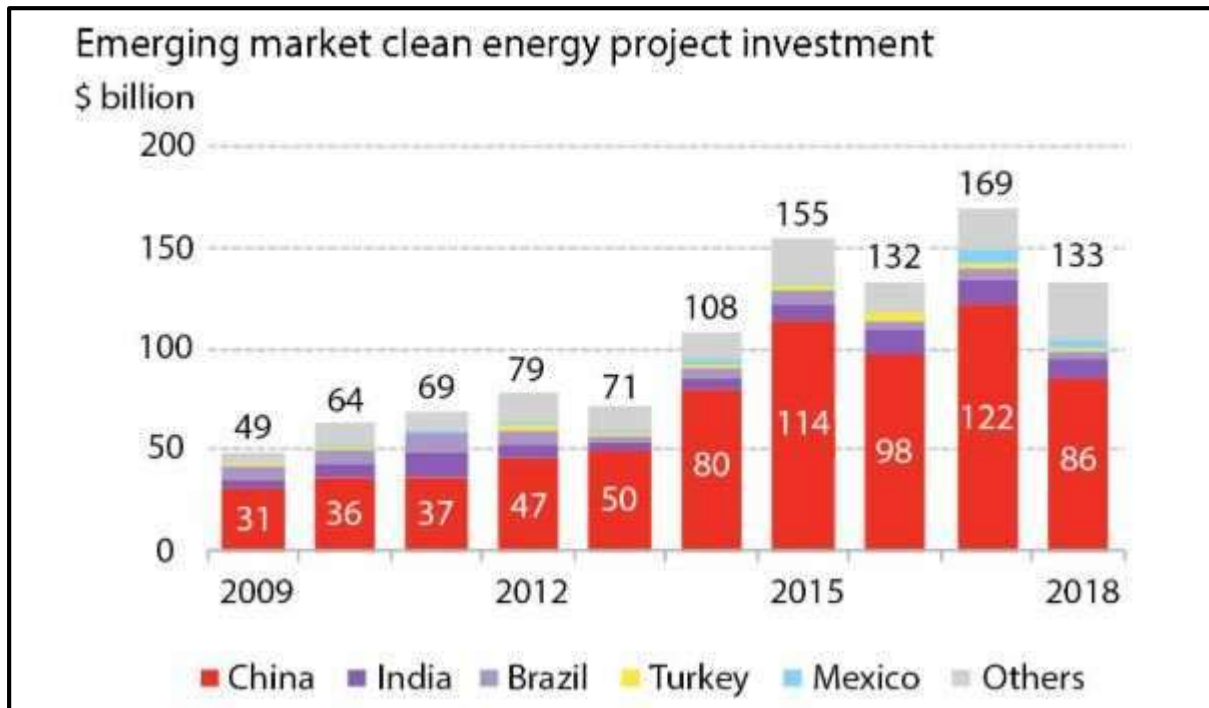
Indo Pacific:

- The plan of the Indo-Pacific as one strategic space is an outgrowth of China's growing influence within the Indian Ocean region.
- It signifies the interconnectedness of the Indian and Pacific Oceans, the importance of the oceans to security and commerce.
- The Indo-Pacific provides a geographic and strategic expanse, with the two oceans being joined along by the 10 ASEAN countries.
- The Indo-Pacific is that the fastest growing region within the world, accounting for 2 - thirds of worldwide economic growth over the past 5 years and residential to 0.5 the world's population.
- The Indo-Pacific region is very heterogeneous in terms of economic size and level of development, with vital variations in security institutions and resources.

- India has been a full of life participant in mechanisms just like the Indian Ocean Rim Association (IORA), the East Asia Summit, Association of Southeast Asian Nations (ASEAN) Defence Ministers Meeting plus.

Topic 32. INDIA INVESTING IN NUCLEAR POWER TO PROVIDE CLEAN ELECTRICITY

Importance for Prelims: Environment



The Government of India has undertaken a nuclear power expansion programme to supply the country with clean electricity. India is following an indigenous three-stage nuclear energy programme. Besides, light water reactors based on foreign cooperation are being found out as additionalities.

- The actual industrial generation of nuclear energy has inflated to 43,918 million units in 2021, from 34,162 million units in 2014.
- The share of nuclear energy within the total electricity generation within the country has remained around 3-3.5 per cent since 2014.
- India's Three-Stage nuclear energy Programme: India's three-stage nuclear power programme was developed by Homi Bhabha within the Fifties to secure the country's long run energy independence, through the use of metallic element and metal reserves found within the mineral sands of coastal regions of South India.
- **Stage 1-Pressurized heavy water reactor (PHWR):** The first stage

involved mistreatment natural uranium to fuel PHWR to supply electricity and Plutonium-239 as a byproduct. additionally the byproduct plutonium-293 would be used in the second stage.

- **Stage 2-Fast breeder reactor (FBR):** The second stage involves using plutonium239 to supply fuel, which might be utilized in quick breeder Reactors. plutonium 239 undergoes fission to supply energy. Once a sufficient quantity of plutonium-239 is made up, Th are going to be utilized in the reactor, to supply Uranium-233. This uranium is crucial for the third stage.
- **Stage 3-Advanced moderator Reactor (AHWR):** the most purpose of stage-3 is to realize a property nuclear fuel cycle. The advance nuclear system would be used a mixture of Uranium-233 and Th. Th absorbs the neutrons, which can additional expeditiously turn out additional element in quick reactor for a quicker growth. Thus, the ultimate objective of the on top of programme is to make capability to use Thorium for sustainable production of nuclear energy and make India energy independent.

Topic 33. KOALAS

Importance for Prelims: Environment



Australia has currently formally listed Koalas as ‘Endangered’ species when widespread bushfires, drought and land clearing for agriculture and urban

settlements that destroyed much of their surroundings.

- As per WWF report, koala population underpopulated elements of Australia 25 million years past however, nowadays just one species remains- the *Phascolarctoscinereus*.
- Koalas are found within the southeast and eastern sides of Australia – in coastal Queensland, New South Wales, south australia and Victoria.
- They survive on a strict diet of up to a kilo of eucalyptus leaves per day.
- Due to low nutrition worth of those leaves, Koalas tend to sleep for extended periods (often up to 18 hours a day) to conserve energy.

Why Australian government declared Koalas Endangered?

- Koalas has been on the row of extinction for over 20 years.
- According to The Guardian report, Koalas declined between 33rd and 61 since 2001 in office and decreased by a minimum of half in Queensland.
- In 2012, Koalas were classified as “Vulnerable”. 2019 harmful bushfires (now called “Black Summer”) wedged 60,000 Koalasby destroying their Eucalyptus wealthy surroundings.
- Another major threat is that the unfold of Chlamydia, a sexually transmitted malady that causes blindness and cysts in Koalas reproductive tract.

How Change in status makes difference?

- Endangered standing can ensure greater protection of Koalas and their forest home beneath Australia’s environmental law.
- In different words, the standing won't only shield the iconic animal however several different species living aboard them.
- Established in 1964, the International Union for Conservation of Nature’s Red List of vulnerable Species has evolved to become the world’s most comprehensive data supply on the global extinction risk standing of animal, plant life and plant species.

- The IUCN Red List could be an essential indicator of the health of the world's variety.
- Far from the global of species and their standing, it's a strong tool to inform and turn action for biodiversity conservation and volte-face, essential to protecting the natural resources we want to survive.
- It provides information regarding vary, population size, environs and ecology, use and/or trade, threats, and conservation actions that may facilitate inform necessary conservation choices.
- The IUCN Red List classes and Criteria are meant to be an simply and wide understood system for classifying species at high risk of global extinction.
- **It divides species into 9 categories:** Not Evaluated, knowledge Deficient, Least Concern, close to threatened, Vulnerable, Endangered, Critically endangered, and Extinct within the Wild and Extinct.

Topic 34. WHAT IS ESSENTIAL PRACTICE TEST?

Importance for Prelims: Polity

The action of some pre-university colleges in Karnataka refusing entry to Muslim lady students carrying hijabs, or head-scarves, has currently become a national dispute. The Karnataka high court, by an interim order, has directed that students shouldn't wear apparel linked to any faith till it resolves the legal queries arising from the problem.

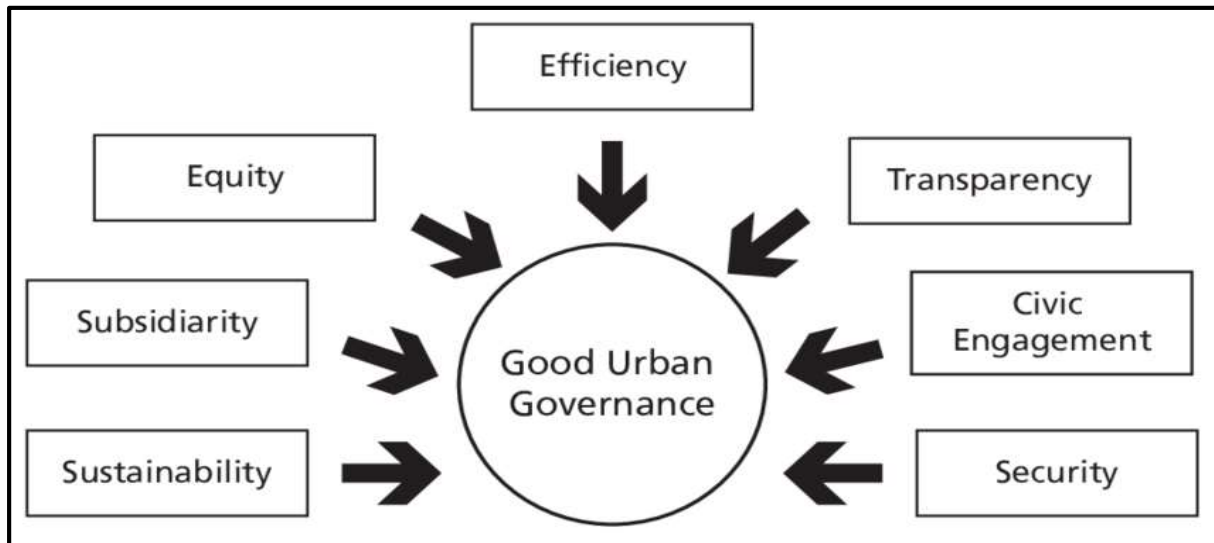
What is the constitutional position?

- Bijoe Emmanuel vs. State of Kerala (1986) pertained to a few children belonging to the Jehovah's Witnesses sect refusing to sing the anthem throughout the morning assembly.
- The Supreme Court ruled within the students' favour, holding that their expulsion desecrated their freedom of expression under Article 19(1)(a) as well as their right to freely practise and profess their religion under Article 25(1).
- The freedom of conscience and to profess, practise and propagate faith is warranted by Article 25.
- This freedom is subject to 'public order, morality and health'.
- It also makes it clear that there are often a law control any economic, financial, political or alternative profane activity which can be related to religious apply or to produce for welfare and reform, including throwing open Hindu non secular institutions of a public character to any or all categories and sections of Hindus.
- Kerala court Judgement judgment in 2016 allowed 2 Muslim students to require the All India Pre-medical check whereas carrying a hijab, once holding that it had been an important a part of Islam.
- In a unique case, the Kerala court declined to intervene in favour of a Muslim student who wasn't allowed to wear a head-scarf by a faculty.

- Essential apply check to spot matters of religion and matters aside from religion.
- The ‘essential practice’ doctrine emerged in 1954 within the ‘Shirur Mutt’ case.
- This proceeding concerned action sought to be taken by the Madras government against a mutt over some disputes over the handling of nancial affairs.□
- It was during this context that the Supreme Court said: “In the rst place, what constitutes the essential a part of a religion is primarily to be observed with regard to the doctrines of that religion itself.”□
- Hence, some acts obtained constitutional protection by being declared “essential” to the apply of that religion and a few were denied protection on the bottom that they weren't essential to that.
- In 1983, the Supreme Court upheld the police call to interdict ‘Tandava’, a dance performed with a bone and a knife, publically places as a part of a procession by Ananda Margis, holding that the ‘Tandava’ wasn't an important religious apply among those within the sect.
- In the Sabarimala case (2018), the majority dominated that the bar on entry of ladies within the age-group of ten to fifty wasn't an important or integral a part of the religion, and also denied the standing of a separate religious denomination of devotees of Lord Ayyappa.

Topic 35. URBAN GOVERNANCE

Importance for Prelims: Governance



Finance Minister Nirmala Sitharaman announced a high-level committee ve centres of excellence and a rethinking of urban designing in her Budget 2022-2023 speech.

- By 2050, 500th of India's population are urban. India is longer reaching to be a rural economy and is moving towards an urban economy.
- Role of NIUA National Institute of Urban affairs is an institute for analysis, coaching and information dissemination in urban development and management.
- It is found in New Delhi, India.
- It was established in 1976 as an autonomous body under the Societies Registration Act.
- The Institute is supported by the Ministry of Housing and concrete Affairs, Government of India, State Governments, urban and regional development authorities and different agencies involved with urban issues.
- NIUA will be an someone or knowledge supplier to the quite 4,000 urban local bodies.

Topic 36. UNIFORM CIVIL CODE (UCC)

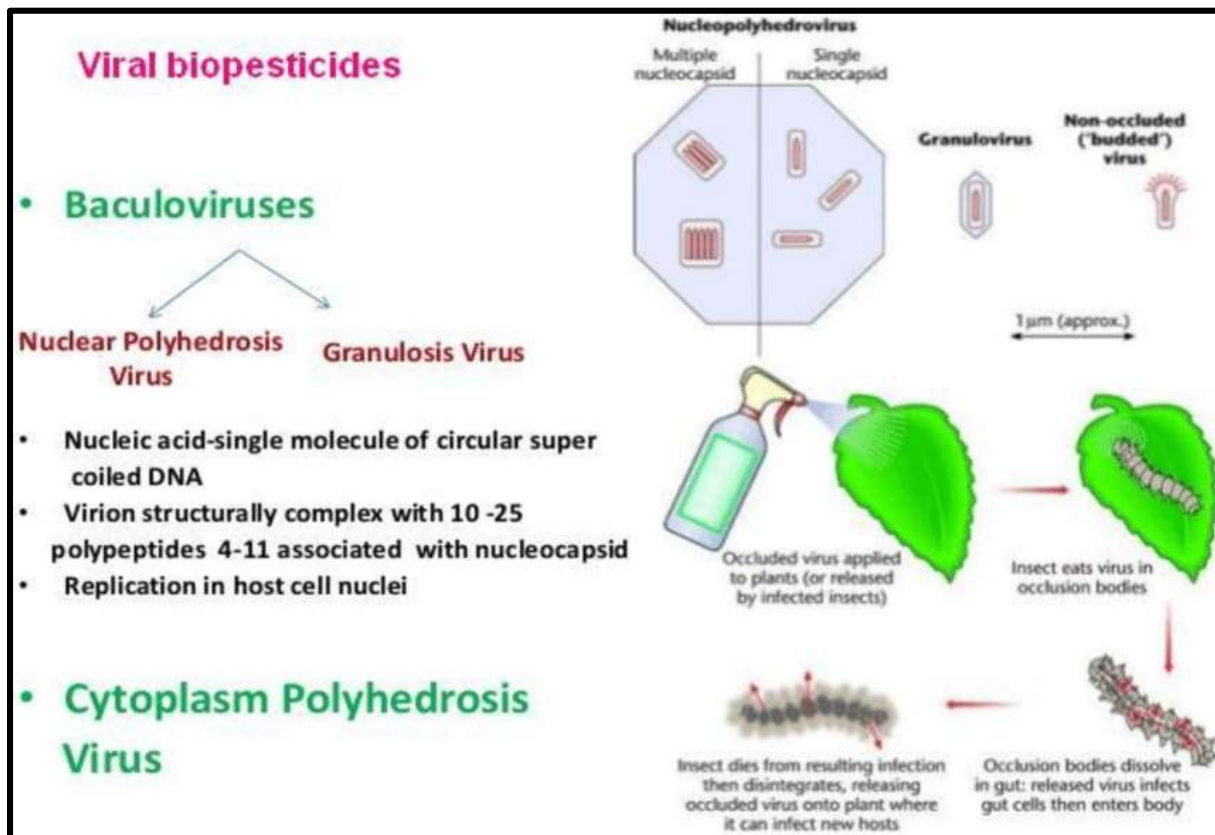
Importance for Prelims: Polity

Uttarakhand's Chief Minister Pushkar Singh Dhami's declared that the BJP, if voted to power, can type a committee to prepare a draft of the Uniform Civil Code (UCC) within the State.

- UCC in States: 6/10 UCC is one that will give for one law for the complete country, applicable to all or any spiritual communities in their concern like marriage, divorce, inheritance, adoption etc.
- Goa's Portuguese Civil Code of 1867 is an example of a standard family law prevailing in a State.
- The promulgation of the UCC emerges as a positive obligation and not duty of the State under Article 44 of the Constitution within the Directive Principles of State Policy (DPSP).
- Article 44 says "the State shall endeavour to secure a UCC for the voters throughout the territory of India". Does "State" in Article 44 mean the Union or the States?
- Technically, Article 12 of the Constitution defines the "State" to include the Union and State governments, Parliament and State Legislatures, and even local authorities.
- Besides, entry five of the Concurrent List in the Seventh Schedule of the Constitution empowers both the Union and States to make laws on marriage, divorce, infants, minors, adoption, wills, intestacy and succession.
- The Jose Paulo Coutinho judgment of the court in 2019, in fact, found Goa a "shining example of an Indian State that includes a UCC".
- However, Supreme Court advocate Kaleeswaram raj argues that promulgation of a UCC by a private State might clash with Central statutes governing marriage and succession.

Topic 37. BIOPESTICIDES

Importance for Prelims:Agriculture



As the government has changed the narrative towards a chemical-free farming, It must allow import of recent tech in biopesticides'

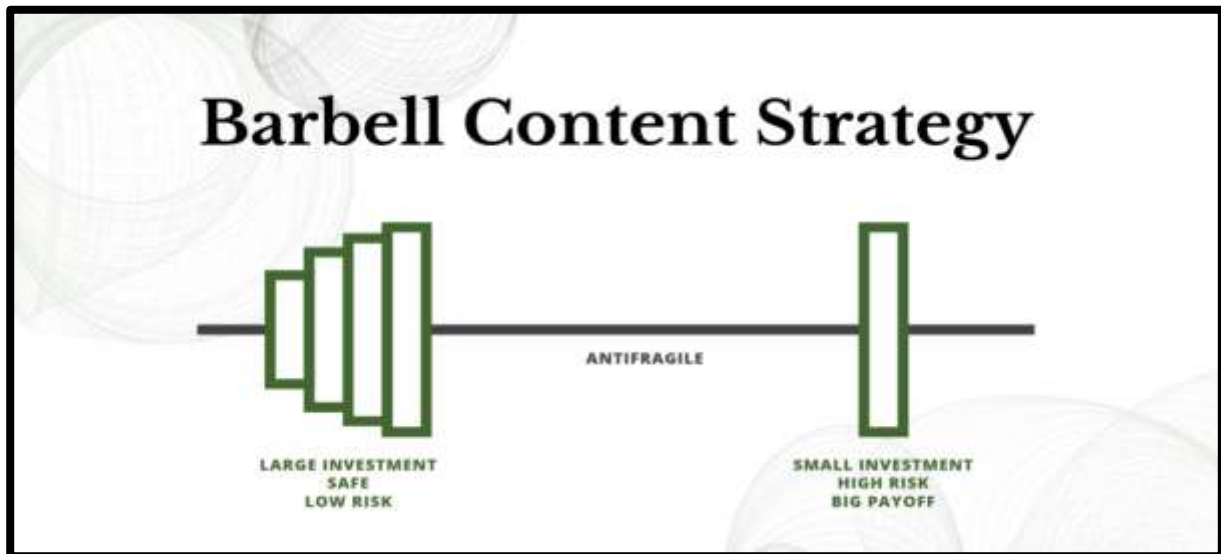
- **Biopesticides:** Biopesticides are biologically based agents used for the control of plant pests.
- They may be living organisms (nematodes or micro-organisms) or present substances, like plant extracts or insect pheromones.
- Biopesticides are typically inherently less toxic than typical pesticides.
- Biopesticides typically affect only the target blighter and closely connected organisms, in distinction to broad spectrum, typical pesticides which will affect organisms as completely different as birds, insects and mammals.
- Biopesticides usually are effective in terribly tiny quantities and infrequently decompose quickly, leading to lower exposures and mostly

avoiding the pollution issues caused by typical pesticides.

- **Types of Biopesticides biochemical Pesticides:** they're present substances that management pests by non-toxic mechanisms. biochemical pesticides embrace substances that interfere with mating, like insect sex pheromones, further as varied scented plant extracts that attract insect pests to traps.
- **Microbial Pesticides:** They comprises a organism (e.g. a bacterium, fungus, virus or protozoan) because the active ingredient.
- Microbial pesticides will management many various styles of pests, though every separate active ingredient is relatively specific for its target pest(s).
- For example, there are fungi that management bound weeds and alternative fungi that kill specific insects.
- The most widely used microbic pesticides are subspecies and strains of bacillus thuringiensis, or
- **Bt. Plant Incorporated Protectants:** they're pesticidal substances that plants produce from genetic material that has been another to the plant.

Topic 38. BARBELL STRATEGY

Importance for Prelims:Economy



This year's Budget and Economic Survey used terms like barbell Strategy, Agile Response, and Bayesian change of knowledge to inform however the government has improved its decision-making in response to Covid-19.

Barbell Strategy:

- The barbell strategy is an approach to uncertainty (risk) that uses 2 extremes – like weights on the other ends of a barbell – to avoid ruin and at the same time expose yourself to a speculative upside. On one finish of the barbell is extreme risk aversion (safety).
- On the other finish is extreme risk loving (speculation). What you avoid is that the “middle” of the barbell – a moderate risk angle that's extremely at risk of error.
- It could be a method that consists of taking each a attitude and an to a fault aggressive one at an equivalent time, by protective assets from all sources of uncertainty whereas allocating alittle portion for bad strategies.(a monetary market concept) g.
- A retail investor secures 80 per cent of his capital by investment in FDs and invests the remaining in speculative stocks or crypto-currencies.

- If Bitcoin goes to zero, investor loses simply twenty per cent of the money. however a couple of lucky ones saw the Bitcoin returns up by hundred times.
- The plan is to focus on extreme ends and avoid medium-risk ways.
- Agile Framework: Agile approach is predicated on feed-back loops, period monitoring of actual outcomes, versatile responses, safety-net buffers and then on.
- It was developed in 2001 and is predicated on twelve principles, that include customer satisfaction, collaboration, adapting to alter, feed- back loops and breaking project silos.
- The “Agile framework: is especially relevant these days as a result of the explosion of realtime information that enables for constant monitoring.
- The flexibility of Agile improves responsiveness and aids evolution, however it doesn't conceive to predict future outcomes.
- This is why the other leg of the barbell strategy is additionally required.
- It cushions for unpredictable negative outcomes by providing safety nets.

What was the framework that India followed earlier?

- India and most countries across the world generally follow the waterfall Approach.
- This involves analysis of the issue, elaborated coming up with and meticulous implementation.
- India's earlier five-year plans were supported this.
- Waterfall Framework is linear and is developed consistently from phase to phase.
- This approach works best for comes with concrete timelines, well-de ned deliverables and tiny uncertainties.

□ **Topic 39. CHARAK SHAPATH**

Importance for Prelims: Art & Culture

The National Medical Commission has created a suggestion that the Hippocratic oath taken by doctors throughout their graduation ceremony should get replaced by a CharakShapath.

About Charaksamhita:

- Charaka-samhita, also Caraka-samhita or Caraka-sahita, may be a elaborated text on ancient Indian medication attributed to Charaka, a practitioner of ayurveda, India's traditional medical system.
- Maharishi CharakShapath is mentioned in Charaka Samhita.
- The Charaka-samhita, in its current type, is believed to own originated within the 1st century CE.
- Charaka is assumed to own flourished someday between the second century BCE and also the 2nd century CE.
- According to ancient Indian medication studies, the initial text was written by Agnivesha, one among six disciples of Ayurvedic scholar PunarvasuAtreya, many centuries ago (the other 5 disciples were Bhela, Jatukarna, Parashara, Harita, and Ksharapani).
- It became referred to as the Charaka-samhita when Charaka refined and annotated it.
- Although Charaka studied all aspects of drugs, including the logic and philosophy behind the Indian healthful method, he centered on unwellness identification and viewed piece of writing as a holistic health-care system that addressed each preventive and curative aspects.
- He also went into great detail regarding foetal generation and growth, human anatomy, and also the role and malfunction of the body according to the tridosha (body's 3 humours)—vata, pitta, and kapha.