

WEEKLY CURRENT AFFAIRSMAGAZINE for



U.P.S.C. - C.S.E.

NOVEMBER-VOL-IV-2020

23 November to 30 November



-
- UPSC/MPSC/NDA/CDS
 - PUNE/THANE/DADAR/ANDHERI
 - Offline/Online batches/Video course
 - www.pioneeracademypace.com/.in
 - IVR No. - 80 80 046 046
-

PIONEER ACADEMY

PUNE



PUNE Address:

301/5 3rd Flr, Pinnacle Prestige (Near Durvankur Hotel), Above Cosmos Bank, Opp. Maharashtra Electronics, Tilak Road, Sadashiv Peth, Pune - 411 030
Mob.: 91453 39324 / 25

THANE



THANE Address:

201/202, 2nd Floor, Laizer Arcade, Raghoba Shankar Road, Chendani, Thane(W) - 400 601.
Mob.: 75060 10635

Email : pioneeracademypace@gmail.com

Website: www.pioneeracademypace.com / .in

IVR Number : 8080 046 046

ANDHERI



ANDHERI Address:

3rd Flr, Syndicate Chamber, Above Vaibhav Restaurant, Next To Better Home Hotel, Opp. Andheri (E) Station, Andheri (E) - 400 601
Mob. 84518 55673 / 70302 92316

DADAR



DADAR Address:

306/7/8, 3rd Flr, Blue Pearl Society, Senapati Bapat Road, Plot No. 14, Near Janata Cloth Market, Near Dadar Railway Station, Dadar (W), Mumbai-400 028
Mob : 93241 69627 / 91375 41508

Success is born of action...

Topic 1: ROSHNI ACT

Importance for Prelims: Government Schemes

The Jammu and Kashmir administration on Monday published on its website the list of beneficiaries under the **Roshni Act**.

- The Roshni Act envisaged the transfer of ownership rights of state land to its occupants, subject to the payment of a cost, as determined by the government.
- It set 1990 as the cutoff for encroachment on state land.
- The government's target was to earn Rs 25,000 crore by transferring 20 lakh kanals (one-eighth of an acre) of state land to existing occupants against payment at market rates.
- The government said the revenue generated would be spent on commissioning hydroelectric power projects, hence the name "Roshni".

Amendments

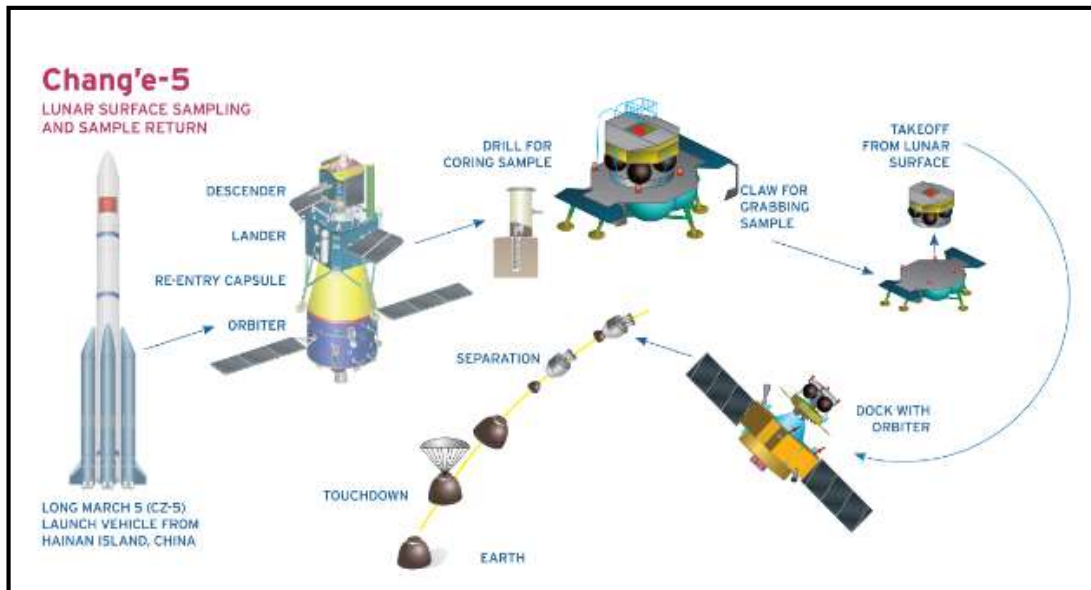
In 2005 the government relaxed the cutoff year to 2004.

Subsequently with new govt coming to power the cutoff was relaxed further to 2007.

The government also gave ownership rights of agricultural land to farmers occupying it for free, charging them only Rs 100 per kanal as documentation fee

Topic 2: CHANG'E 5

Importance for Prelims: Science and technology



China is preparing to launch an unmanned spacecraft to bring back lunar rocks, the first attempt by any nation to retrieve samples from the moon in four decades.

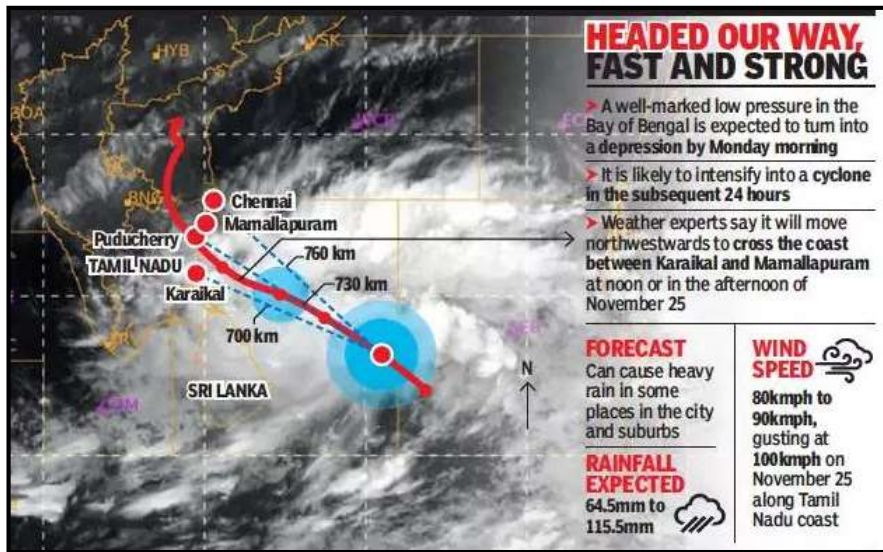
- The Chang'e-5 probe, named after the mythical Chinese moon goddess, **aims to shovel up lunar rocks** and soil to help scientists learn about the moon's origins, formation and volcanic activity on its surface.
- The mission is set to take off from the Wenchang Space Center on the southern island province of Hainan, according to the official Xinhua news agency.
- If successful, **China will be the third country** to have retrieved samples from the moon, following the U.S. and the Soviet Union in the 1960s and 1970s.
- The Chinese probe will collect 2 kg of surface material from a **previously unexplored** area known as Oceanus Procellarum or "**Ocean of Storms**" **which consist of a vast lava plain**, according to the science journal Nature.

Additional Information:

- Beijing is pouring billions into its military-run space programme, with hopes of having a crewed space station by 2022 and of eventually sending humans to the moon.

Topic 3: CYCLONE NIVAR

Importance for Prelims: Geography



The Bay of Bengal will see its second Severe Cyclone of the year, after Super Cyclone Amphan formed in May. It is likely to hit Tamil Nadu coast by midweek.

- The depression will intensify into a cyclone. At this stage, the wind speed will range between 70 to 80 km/hr gusting to 90km/hr.
- The cyclone will further gain strength into a Severe Cyclone category (90 to 100 km/hr gusting to 110 km/hr).

Tropical Cyclones

- Tropical cyclones are violent storms that originate over oceans in tropical areas and move over to the coastal areas bringing about large scale destruction caused by violent winds, very heavy rainfall and storm surges.
- Tropical Cyclones are one of the most devastating natural calamities in the world.
- Tropical cyclones originate and intensify over warm tropical oceans.
- The conditions favourable for the formation and intensification of tropical storms are:
 - Large sea surface with temperature higher than 27° C.

- Presence of the Coriolis force.
- Small variations in the vertical wind speed.
- A pre-existing weak low- pressure area or low-level-cyclonic circulation.
- Upper divergence above the sea level system.

Nomenclature of Tropical Cyclones

- The naming of tropical cyclones is a recent phenomenon. The process of naming cyclones involves several countries in the region and is done under the aegis of the World Meteorological Organization (WMO).
- For the Indian Ocean region, a formula for naming cyclones was agreed upon in 2004. Eight countries in the region – Bangladesh, India, Maldives, Myanmar, Oman, Pakistan, Sri Lanka and Thailand – all contributed a set of names which are assigned sequentially whenever a cyclonic storm develops.
- Hudhud, Titli, Phethai, Fani, Vayu , Amphan and **Nivar** are among the names of cyclones in the Indian Ocean region.

Worldwide Terminology of Tropical Cyclones

- They are given many names in different regions of the world – eg. they are known as **Typhoons** in the China Sea and Pacific Ocean; **Hurricanes** in the West Indian islands in the Caribbean Sea and Atlantic Ocean; **Tornados** in the Guinea lands of West Africa and southern USA.; **Willy-willies** in north-western Australia and **Tropical Cyclones** in the Indian Ocean.

Topic 4: NATIONAL CRISIS MANAGEMENT COMMITTEE

Importance for Prelims: Governance



The National Crisis Management Committee (NCMC) reviewed the cyclone preparedness of Andhra Pradesh, Tamil Nadu and Puducherry which are facing the threat of a severe cyclone.

- At the national level, Cabinet Committee on Security (CCS) and National Crisis Management Committee (NCMC) are the key committees involved in the top-level decision-making wrt Disaster Management (DM).
- It deals with major crisis which have serious or national ramifications.

Key functions:

- Oversee the Command, Control and Coordination of the disaster response.
- Give direction to the Crisis Management Group (CMG) as deemed necessary.

Composition:

- Cabinet Secretary (Chairperson).
- Secretaries of Ministries / Departments and agencies with specific Disaster

- management responsibilities.

Topic 5: PERMANENT COMMISSION FOR WOMEN

Importance for Prelims: Security



1992: Centre notifies women eligible for appointment as officers for five years in the Army Postal Service, Judge Advocate General Department, Army Education Corps, Signal Corps, Intelligence Corps, Corps of Engineers, Corps of Electrical and Mechanical Engineering and Regiment of Artillery, among other Corps

Dec. 1996: Ministry of Defence deletes the five-year clause for enrollment

Nov. 2005: The initial process of induction of women officers under the WSES was replaced by SSCs with an

outer period of 14 years. The first batch of women officers under the new scheme entered the Army in 2008

2003 and 2006: Writ petitions filed in the Delhi High Court by advocate Babita Puniya and several SSC women Army officers for permanent commission and equality of opportunity in the Army

March 2010: Delhi HC holds that women SSC officers of the Air Force and Army who had opted for PC, but not granted that status would be entitled to PC at par with male SSC officers with all consequential benefits. Contempt proceedings were then initiated by the women officers against the Union of India for non-compliance with the HC judgment. Contempt was later stayed

September 2, 2011: The case reaches the Supreme Court in appeal

Women Army officers moved the Supreme Court to debunk the defence establishment's announcement that only 422 of 615 women officers screened have been found fit for a Permanent Commission (PC). .

Issue:

- Under the Short Service Commission scheme, women were commissioned into the Army for a period of 10 years, extendable up to 14 years.
- Women were, however, restricted to roles in specified streams such as Army Education Corps, Corps of Signals, Intelligence Corps and Corps of Engineers.
- These specified streams excluded combat arms such as infantry and armoured corps.
- While male SSC officers could opt for permanent commission at the end of 10 years of service, this option was not available to women officers. Women officers were kept out of any command appointment and could

not qualify for a government pension, which starts only after 20 years of service as an officer.

- In February 2020, the SC held that there is a need for an administrative will and ‘change of mindset’ and directed the government to grant PC and command postings in all services other than combat to women Army officers.

Permanent Commission for Women

- The Ministry of Defence has taken steps to ensure implementation of the grant of PC to women officers and all three services have allowed permanent recruitment of women in select streams including medical, education, legal, signals, logistics and engineering.
- **Indian Air Force:** Women Officers recruited through the SSC in the IAF have the option of seeking PC in all streams except the flying branch.
- **Indian Navy:** In March 2020, the SC cleared the way for PC to women in Indian Navy as well.
- The Navy has allowed PC of women in a host of departments such as logistics, naval designing, air traffic control, engineering and legal.
- **Indian Army:** Women officers are granted PC in the Indian Army in all the ten branches where women are inducted for SSC.

Implications

- The women officers will be eligible to occupy all the command appointments, at par with male officers, which would open avenues for further promotions to higher ranks for them.
- If women officers had served only in staff, they would not have gone beyond the rank of Colonel.
- After implementation, women can rise to the rank of Colonel and above based on merit, like their male counterparts.
- At the rank of Colonel, an officer picks up a substantive command and

would be delegated to carry out independent tasks.

- A Colonel commands a battalion, which typically consists of 850 men. A woman officer who is successful in this position could technically rise to the highest ranks of the Army, though, women officers will not be inducted into the combat arms such as the infantry, artillery or armoured corps.

Topic 6: POSHAN ABHIYAAN

Importance for Prelims: Government Schemes



The National Nutrition Mission or the Poshan Abhiyaan, the world's largest nutrition programme for children and mothers, must be stepped up to meet the targets set by the Centre to reduce stunting, wasting and anaemia by 2022, says a report by NITI Aayog.

- POSHAN Abhiyaan (National Nutrition Mission) was launched by the government on March 2018.
- The Abhiyaan targets to reduce **stunting, undernutrition, anemia (among young children, women and adolescent girls) and reduce low birth weight by 2%, 2%, 3% and 2% per annum** respectively.
- The target of the mission is to bring down stunting among children in the age group 0-6 years from 38.4% to 25% by 2022.
- POSHAN Abhiyaan aims to ensure service delivery and interventions by use of technology, behavioural change through convergence and lays-down specific targets to be achieved across different monitoring parameters.
- Under the Abhiyaan, Swasth Bharat Preraks will be deployed one in each

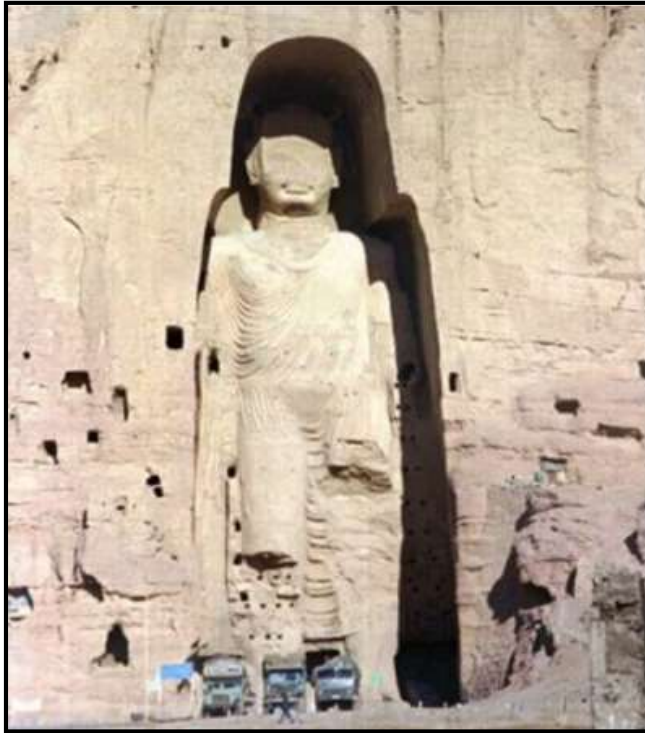
district for coordinating with district officials and enabling fast and efficient execution of the Abhiyaan across the country. Swasth Bharat Preraks would function as catalyst for fast tracking the implementation of the Abhiyaan.

National Council on India's Nutrition Challenges

- Set up under the Poshan Abhiyaan, the Council is also known as National Council on Nutrition (NCN).
- The NCN is **headed by the Vice-Chairman of the NITI Aayog**.
- It provides policy directions to address nutritional challenges in the country and review programmes.
- It is a national level coordination and convergence body on nutrition. \$200 million loan from World Bank will be used for implementing the National Nutrition Mission.

Topic 7: BAMMIYAN BUDDHA

Importance for Prelims: Culture



At least 14 people were killed in central Afghanistan when two blasts ripped through the historic city of Bamiyan (known for Bamiyan Buddha), home to many members of the mainly Shiite Hazara ethnic minority.

- The Buddhas of Bamiyan were located in the Bamiyan Valley of central Afghanistan. These were 2 statues of Buddha carved into a rocky cliff.
- These monuments dated back to the 6th century. The smaller statue (Shahmama) measured 35m high while the larger statue (Sosol) was 53m high- some of the largest examples of carved standing Buddhas in the world.

Gandhara Art

- The Buddhas of Bamiyan were an example of the Gandhara style of art. It is also called Greco-Buddhist art, showing influences of the Hellenistic styles of classical Greek sculptures.
- It is a blend of western and eastern art forms. The style is said to have

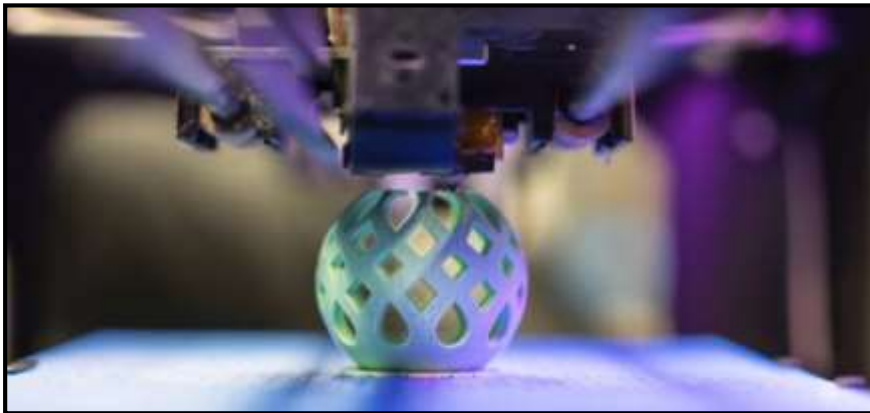
originated in Afghanistan.

Destruction in 2001

- The Buddhas of Bamiyan were destroyed by the Taliban regime under its supreme leader, Mullah Omar. They were destroyed over several weeks using dynamites, anti-aircraft guns, artillery, anti-tank missiles, etc.

Topic 8: 3D PRINTING

Importance for Prelims: Science & tech



Researchers published the results of clinical trials on an innovation: 3D printed nasal swabs as an alternative to commercial swabs to test for Covid-19.

- The cost of materials per 3D-printed nasal swab ranges from 26 to 46 cents; commercial swabs cost about \$1 each, the authors said.

3D Printing

- Three-dimensional printing (3-D printing), also known as Additive manufacturing (AM) is a process of joining materials to make objects from 3D model data, usually layer upon layer. It is basically a process of making three dimensional solid objects from a digital file.
- This is opposite of 'Subtractive Manufacturing' which works on removal of material to create a desired object. It is similar to a man who cuts a stone to create a sculpture.

Process of 3D Printing:

- 3D printing starts by making a virtual design of the object to be created. Virtual design can be made using a 3D modelling program such as CAD (Computer Aided Design) or 3D scanners.
- The 3D digital copy is then put into a 3D modelling program. The model is then sliced into hundreds or thousands of horizontal layers in

preparation for printing.

- This prepared file is thus uploaded in the 3D printer which reads each slices in 2D format and then proceeds to create the object layer by layer and the resulting object has no sign of layering visible, but a 3 dimensional structure.

Topic 9: 5G NETWORK

Importance for Prelims: Schemes



5G or fifth generation is the latest upgrade in the long term evolution (LTE) mobile broadband networks.

- The first generation of networks allowed only mobile voice calls to be made, while the second generation allowed mobile voice calls as well as sending of short text messages.
- It was the third generation or 3G network which allowed web browsing on mobile devices, the speed and latency of which improved with fourth-generation or 4G networks.
- The 5G networks will have even faster speeds with **latency down to between 1-10 milliseconds**.
- **Latency** is the time a device takes to communicate with the network, which stands at an average of up to 50 milliseconds for 4G networks across the world.

How does it works?

- All 5G networks chiefly operate on three spectrum bands.
- The low-band spectrum has been proven to have great coverage and

works fast even in underground conditions. However, the maximum speed limit on this band is 100 Mbps (Megabits per second).

- In the mid-band spectrum, though the speeds are higher, telcos across the world have registered limitations when it comes to coverage area and penetration of telephone signals into buildings.
- The high-band spectrum offers the highest speed but has extremely limited network coverage area and penetration capabilities.
- The telcos using this band rely on **the existing LTE networks** and will need to install a number of smaller towers to ensure adequate coverage and high-speed performance.

What does it mean to be 5G ready?

- Globally many companies have been deploying 5G networks across their service areas as early as 2018.
- Not only the network, but the devices will also have to be 5G ready for customers to be able to enjoy the maximum benefits of the latest upgrade in mobile broadband.
- One of the major improvements in 5G is the use of beam tracking to follow all devices on the network to ensure consistent connection in real-time for the device.
- 5G networks are also designed to multiple-input multiple-output (MIMO) efficient which improves signal throughput for all devices on the network.

India's position on the deployment of 5G:

- Companies, both telecom service providers and their equipment vendors, have completed lab trials of 5G network components but are yet to commence field trials, which were initially scheduled to happen last year.
- For the same, telecom companies are awaiting allocation of test spectrum from the Department of Telecommunications (DoT).

- The service providers have already tied up with equipment makers like Nokia, Ericsson, etc for deploying their 5G networks.

Topic 10: FOREIGN PORTFOLIO INVESTMENT

Importance for Prelims: Economics



Foreign portfolio investors (FPIs) have been making record investments in Indian equities the last few weeks taking their exposure to a lifetime high of about ₹1.5- lakh crore in the eight months into the current fiscal year.

- Foreign portfolio investment (FPI) consists of securities and other financial assets passively held by foreign investors. It includes both individuals and foreign institutional investors.
- It does not provide the investor with direct ownership of financial assets and is relatively liquid depending on the volatility of the market.
- FPI is **part of a country's capital account** and is shown on its Balance of Payments (BOP).
- The BOP measures the amount of money flowing from one country to other countries over one monetary year.
- The investor does not actively manage the investments through FPIs, he does not have control over the securities or the business.

- The investor's goal is to create a quick return on his money.
- FPI is often referred to as “**hot money**” because of its tendency to flee at the first signs of trouble in an economy.
- **FPI is more liquid and less risky** than Foreign Direct Investment (FDI).
- A **Foreign Direct Investment** (FDI) is an investment made by a firm or individual in one country into business interests located in another country.
- FDI lets an investor purchase a direct business interest in a foreign country.
- FPI and FDI are both important sources of funding for most economies. Foreign capital can be used to develop infrastructure, set up manufacturing facilities and service hubs, and invest in other productive assets such as machinery and equipment, which contributes to economic growth and stimulates employment.
- Securities and Exchange Board of India (SEBI) brought new FPI Regulations, 2019, replacing the erstwhile FPI Regulations of 2014.

Topic 11: SAMVIDHAN DIWAS

Importance for Prelims: Polity



The nation is celebrating the Constitution Day, also known as Samvidhan Diwas on 26th November to commemorate the adoption of the Constitution of India.

- The Constitution Day is observed annually on November 26 to mark the anniversary of the adoption of Indian Constitution on November 26, 1949 by the Constituent Assembly of India, which came into effect on 26 January 1950.
- The Government of India declared 26 November as Constitution Day in 2015 by a gazette notification.
- The year of 2015 was the 125th birth anniversary of Ambedkar, who played a key role in the drafting of the constitution. Previously this day was celebrated as National Law Day.
- **Article 394** of the Constitution states that **Articles 5, 6, 7, 8, 9, 60, 324, 367, 379** and 394 came into force since the adoption of the Constitution on 26th November 1949 and the rest of the provisions on 26th January 1950.

Topic 12: NATIONAL PORTAL FOR TRANSGENDER PERSONS

Importance for Prelims: Governance

Union Minister for Social Justice & Empowerment launched a 'National Portal for Transgender Persons'.

- This National Portal for Transgender Persons has been developed within 2 months of Notification of Transgender Persons (Protection of Rights) Rules, 2020 on 29 September, 2020.
- This Portal would help a transgender person in applying for a Certificate and Identity card digitally from anywhere in the country.
- The most important benefit is that it helps the transgender person to get the ICard without any physical interface and without having to visit any office.
- Through the Portal, they can monitor the status of their application that ensures transparency in the process.
- Getting Transgender Certificate and Identity Cards as per their self-perceived identity is an important provision of The Transgender Persons (Protection of Rights) Act, 2019.

Topic 13: RE-INVEST 2020

Importance for Prelims: Economy



Prime Minister inaugurated the virtual 3rd Global Renewable Energy Investment Meeting and Expo (RE-Invest 2020).

- The summit is organised by the Ministry of New and Renewable Energy and will be held from 26 – 28 November 2020.
- The theme for RE-Invest 2020 is ‘ **Innovations for Sustainable Energy Transition**’.
- It will feature a 3-day conference on renewables and future energy choices, and an exhibition of manufacturers, developers, investors and innovators.
- It aims to build upon the success of the first two editions held in 2015 and 2018 and provide an international forum for investment promotion in renewable energy.

Topic 14: SIMULTANEOUS ELECTIONS

Importance for Prelims: Polity



Prime Minister Narendra Modi on Thursday again pitched for **‘One Nation, One Election’**, at the concluding session of the 80th All India Presiding Officers Conference via videoconference.

- ‘Simultaneous Elections’ is defined as structuring the Indian election cycle in a manner such that elections to Lok Sabha and State Assemblies are synchronized together.
- Elections to **Local bodies, which is a state subject**, are not included in it.

Advantages

- Frequent elections impose a burden on human resources.
- They also impede the development process due to the promulgation of Model Code of Conduct.
- The idea of ‘one nation, one election’ will drastically cut the election expenditure.
- The government will be able to focus on legislation and governance.
- Now, they are deviated in the campaign mode periodically.

Concerns and Challenges:

- **Tenure** – Synchronisation would involve curtailment or extension of the tenure of a House.
- It is proposed that the Assemblies would be bunched into two categories.
- This will be based on whether their terms end close to the 2019 or the 2024 Lok Sabha elections.
- The legal validity of this process is however questionable.
- **Constitutional** – The move requires amendment to the Representation of Peoples's Act 1951.
 - But attempting to draft a constitutional amendment would highlight the hollowness of the whole idea.
 - Discussions with the public, political parties and all other stakeholders would have to be reflected in the bill.
 - Significantly, it requires changes to the Constitution's basic structure, posing a challenge.
- **Difficulties** – The Election Commission sometimes holds elections to even one state in many phases. Given this, holding simultaneous elections for the whole country has many practical difficulties.
- **Dissolution** – It is possible for Lok Sabha to be prematurely dissolved on account of a vote of no-confidence.
 - It is still uncertain if all Assemblies would also be dissolved in that case.
 - And in case of a mid-term election, the term of such a House would only be for the remainder of its tenure.
- **Defection** – Allowing a one-time waiver of the anti-defection law in the event of a hung House is another proposal.
 - This is to enable the House to elect a leader.
 - However, these reforms can be adopted even without simultaneous elections.

Topic 15: PROBLMES IN INDUSTRIES OWNED BANKS

Importance for Prelims: Economy

An internal working group of the RBI has recently made a recommendation to permit industrial houses to own and control banks.

- The problem with banks owned by corporate houses is that they tend to engage in connected lending.

Over-financing of risky activities

- Lending to firms that are part of the corporate group allows them to undertake risky activities that are not easily financeable through regular channels.
- Precisely because these activities are risky, they often do not work out.
- And when that happens, it is typically taxpayers who end up footing the bill.
- In principle, connected lending can be contained by the regulatory authority.
- However, experiences in other nations show that regulating connected lending is impossible convincing most advanced countries that regulating connected lending is impossible.
- Indonesia tried to regulate the practice: It banned the practice.
- Regulation and supervision need to be strengthened considerably to deal with the current problems in the banking system before they are burdened with new regulatory tasks.

Lack of exit

- The economic landscape is littered with failed firms, kept alive on life support, making it impossible for more efficient firms to grow and replace them.
- While some progress was initially made under the Insolvency and

Bankruptcy Code (IBC), this had stalled even before the pandemic, largely because existing promoters and owners mounted a stiff resistance.

- If industrial houses get direct access to financial resources, their capacity to delay or prevent exit altogether will only increase.

Increasing dominance

- The Indian economy already suffers from over-concentration.
- We not only have concentration within industries, but in some cases the dominance of a few industrial houses spans multiple sectors.
- If large industrial houses get banking licences, they will become even more powerful, not just relative to other firms in one industry, but firms in another industry.

Impact on quality of credit

- Indian financial sector reforms have aimed at improving not just the quantity, but also the quality of credit.
- The goal has been to ensure that credit flows to the most economically efficient users, since this is the key to securing rapid growth.
- If India now starts granting banking licences to powerful, politically connected industrial houses we will effectively be abandoning that long-held objective.

Topic 16: BRAHMOS MISSILE

Importance for Prelims: Defence


BrahMos-A

The air-launched version of BrahMos
**Will arm Su-30MKI of IAF as
a standoff weapon**

25 June 2016:
Successful demonstration flight
carried out at HAL Nashik

22 November 2017
**Specially modified Su-30 MKI
of IAF test fired the Brahmos A
missile on a ship stationed
280 km away
in the Bay of Bengal**

*India became a part of elite group of nations
who have capability to launch air launched cruise missile*



Specifications

Missiles per aircraft	One
Length	8550 mm
Diameter	648 mm
Weight	2550 kg
Range	up to 290 km
Velocity	up to 2.8 Mach
Ground Clearance	-1000 mm
Release Height	500 m-9000 m
Release Speed	0.55-0.8 Mach
Free fall	100-150 m
Altitude-	up to 14000 m
cruise phase	

India successfully test fired the surface-to-surface supersonic cruise missile BrahMos as part of a series of planned trials of the weapon, known for its precision strike capabilities, official sources said.

- BRAHMOS supersonic cruise missile featuring Indian propulsion system, airframe, power supply, and other major indigenous components has been successfully test-fired.
- BRAHMOS is a joint venture between the Defence Research and Development Organisation of India (DRDO) and the NPOM of Russia.
- Brahmos is named on the rivers Brahmaputra and Moskva.
- It is a **two-stage (solid propellant engine in the first stage and liquid ramjet in second)** air to surface missile with a flight range of around 300 km.
- Brahmos is the heaviest weapon to be deployed on Su-30 MKI fighter

aircraft, with a weight of 2.5 tonnes.

- Brahmos **is a multiplatform** e it can be launched from land, air, and sea and multi capability missile with pinpoint accuracy that works in both day and night irrespective of the weather conditions.
- It operates on the “**Fire and Forgets**” **principle** e it does not require further guidance after launch.
- Brahmos is one of the fastest cruise missile currently operationally deployed with speed **of Mach 2.8**, which is 3 times more than the speed of sound.
- Advanced versions of range above 1000kms and speed upto Mach 5 are under development.

Topic 17: BLUE TIDES

Importance for Prelims: Environment



The tide that produces a fluorescent blue hue—bioluminescence, made an appearance on Tuesday night on Juhu beach in Mumbai and Devgad beach in Sindhudurg along Maharashtra's coastline.

- The natural phenomenon is characterised by the emission of light produced by phytoplanktons (microscopic marine plants), commonly known as dinoflagellates.
- The light is produced through a series of chemical reactions due to luciferase (oxidative enzymes) protein.
- Marine scientists said one of the main factors for its occurrence could be eutrophication – the reduction of oxygen in the water – which makes the phytoplanktons very dominant.
- This is a recurring phenomenon which is caused by a **bioluminescent plankton called Noctiluca scintillans**, commonly known as sea sparkle.
- While smaller blooms may be harmless, slow moving larger blooms may cause severe hypoxic conditions that result in fish die-offs in an area.

- Similar to the blue tide, there exists another such **phenomenon called red tide or harmful algal blooms** that emits red light.
- It is rare occurrence caused when colonies of algae—simple plants that live in the sea and freshwater—grow out of control while producing toxic or harmful effects on people, fish, shellfish, marine mammals, and birds.

Topic 18: SDGs INVESTOR MAP FOR INDIA

Importance for Prelims: Economy



United Nations Development Programme (UNDP) and Invest India have launched the Sustainable Development Goals (SDGs) Investor Map for India.

- It laid out 18 Investment Opportunities Areas (IOAs) in six critical SDG enabling sectors, that can help the country push forward on the trajectory of Sustainable Development.
- The six focus sectors identified in the map include education, healthcare, agriculture and allied activities, financial services, renewable energy and alternatives and sustainable environment.
- Of the 18 IOAs identified, 10 are already mature investable areas that have seen robust Private Equity and Venture Capital activity. The remaining eight IOAs are emerging opportunities, which have seen traction from early-stage investors.
- The map has also identified eight ‘white spaces’, which have seen investor interest and have the potential to grow into IOAs in five to six years with policy support and private sector participation.
- **Invest India** is the **national investment promotion agency** under the Commerce & Industry Ministry.

Topic 19: CLIMATE EMERGENCY

Importance for Prelims: International Events

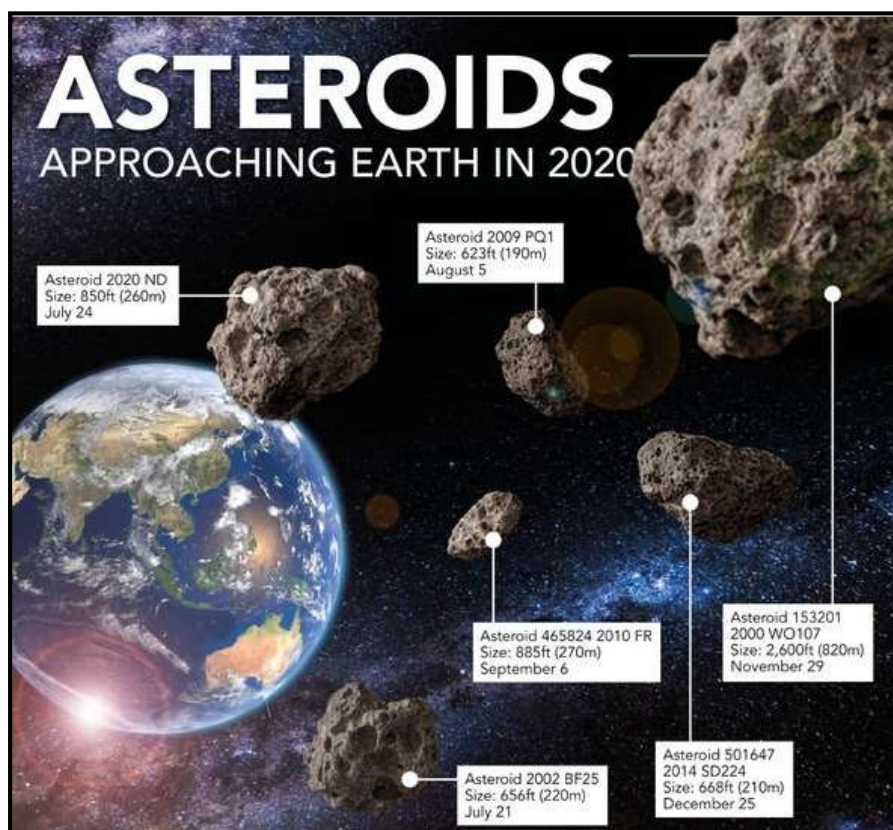


New Zealand's government will decide next week if a climate emergency should be declared in the country or not.

- In 2019, the Oxford dictionaries declared “climate emergency” to be the word of the year, a word that reflects “the ethos, mood, or preoccupations of the passing year, and have lasting potential as a term of cultural significance”.
- It defines climate emergency as “a situation in which urgent action is required to reduce or halt climate change and avoid potentially irreversible environmental damage resulting from it”.
- Some of the countries that have **declared a climate emergency in recent years include the UK, Portugal, Canada, France and, most recently, Japan.**
- Last November, the parliament of **New Zealand passed the Zero-Carbon Act**, which commits New Zealand to zero carbon emissions by 2050 or sooner.

Topic 20: ASTEROID 153201

Importance for Prelims: Science & tech



A large asteroid – named (153201) 2000 WO107 – will sweep past Earth in late November, providing astronomers with a good opportunity to study it. Closest approach to Earth will happen on November 29, 2020.

- The asteroid is expected to be a real monster, estimated to range anywhere between 12,00ft to 2,5700ft across (370m and 820m).
- To put this into perspective, the rogue space rock at it widest is almost the height of Dubai's iconic Burj Khalifa skyscraper. However , it is not a hazardous asteroid.
- NASA has also forecast how the asteroid is currently speeding through space at a whopping 25.07km/s – the equivalent of 56,000mph.
- The asteroid will not be visible to the eye, but people with small telescopes might catch it.

- Astronomers are gearing up to observe this asteroid further, in part because of its relatively large size, and in part, because subsequent passes of 2000 WO107 will be closer than this year's pass.
- It is a **Near Earth Object (NEO)**.
- NASA defines a Near-Earth Object (NEO) as any asteroid or comet coming within 1.3 AU of Earth.

Near-Earth Objects (NEOs):

- **NEOs are comets and asteroids pushed by the gravitational attraction of nearby planets into orbits** which allow them to enter the Earth's neighbourhood.
- These objects are composed mostly of water ice with embedded dust particles.
- NEOs occasionally approach close to the Earth as they orbit the Sun.
- NASA's Center for Near-Earth Object Study (CNEOS) determines the times and distances of these objects, when their approach to the Earth is close, through the Asteroid Watch Widget.

Topic 21: DISQUALIFICATION

Importance for Prelims: Polity

India's first Member of Parliament to have been disqualified (Mr. Lalduhoma) from the Lok Sabha has now been disqualified as an MLA in Mizoram.

- The disqualification was on the ground that he had declared himself as a representative of the Zoram People's Movement (ZPM) despite being elected as an independent candidate from the Serchhip constituency.
- "He lost the character of an independent legislator because of the declaration," Mr. Speaker said.

Anti-defection law (Tenth schedule)

- The **Tenth Schedule** was inserted in the Constitution in 1985 by the 52nd Amendment Act.
- It lays down the process by which legislators may be disqualified on grounds of defection by the Presiding Officer of a legislature based on a petition by any other member of the House.
- The decision on question as to disqualification on ground of defection is referred to the Chairman or the Speaker of such House, and his decision is final.
- The law applies to both Parliament and state assemblies.

Disqualification:

- If a member of a house belonging to a political party: Voluntarily gives up the membership of his political party, or Votes, or does not vote in the legislature, contrary to the directions of his political party.
- However, if the member has taken prior permission, or is condoned by the party within 15 days from such voting or abstention, the member shall not be disqualified.
- If an independent candidate joins a political party after the election.

- If a nominated member joins a party six months after he becomes a member of the legislature.

Exceptions under the law:

- Legislators may change their party without the risk of disqualification in certain circumstances.
- The law allows a party to merge with or into another party provided that at least two-thirds of its legislators are in favour of the merger.
- In such a scenario, neither the members who decide to merge, nor the ones who stay with the original party will face disqualification.

Decision of the Presiding Officer is subject to judicial review:

- The law initially stated that the decision of the Presiding Officer is not subject to judicial review. This condition was struck down by the Supreme Court in 1992, thereby allowing appeals against the Presiding Officer's decision in the High Court and Supreme Court. However, it held that there may not be any judicial intervention until the Presiding Officer gives his order.

Topic 22: ASIAN DEVELOPMENT BANK

Importance for Prelims: International Organization

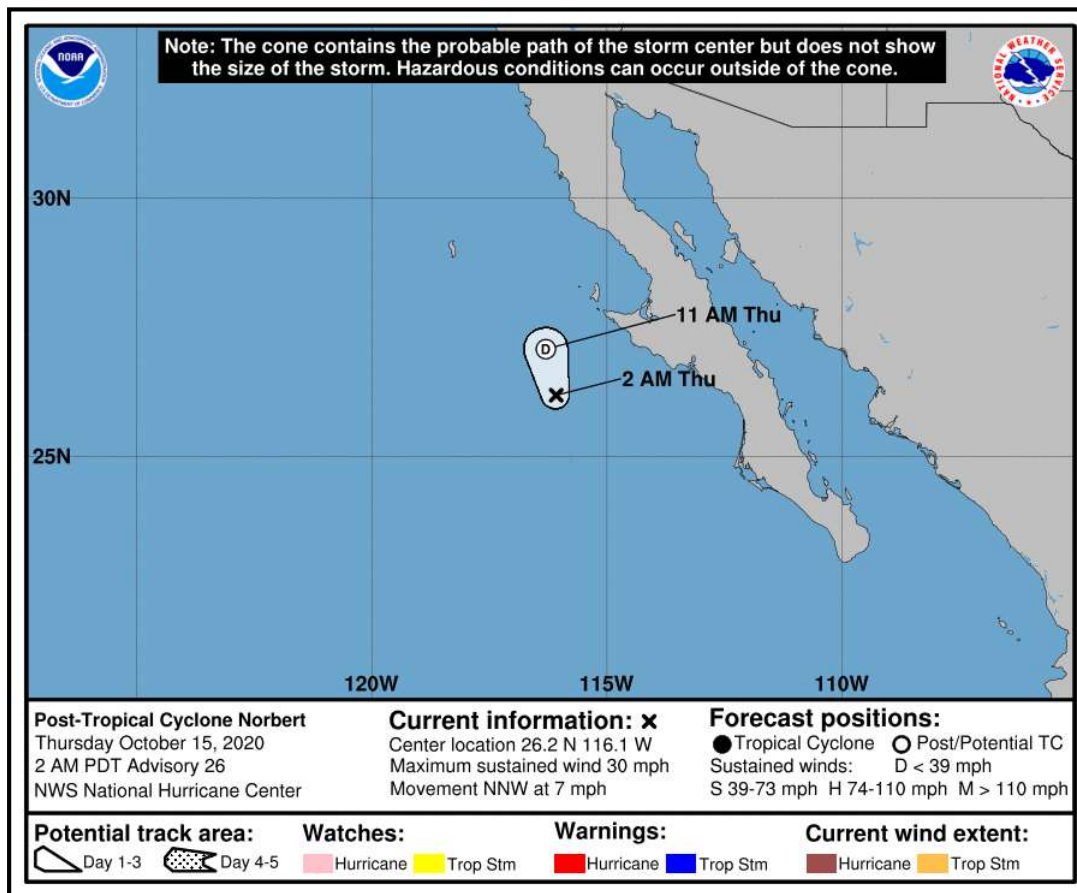


The Asian Development Bank has approved a \$300 million policy-based loan to Pakistan to help promote macroeconomic stability in the cash-strapped country.

- ADB is a regional development bank established on 19th December 1966.
- ADB now has 68 members, 49 from within Asia.
- ADB's five largest shareholders are Japan and the United States (each with 15.6% of total shares), the People's Republic of China (6.4%), **India (6.3%)**, and Australia (5.8%).
- It aims to promote social and economic development in Asia.
- ADB is committed to achieving a prosperous, inclusive, resilient, and sustainable Asia and the Pacific, while sustaining its efforts to eradicate extreme poverty.
- ADB is headquartered in **Manila, Philippines**.

Topic 23: CYCLONE FORECASTING

Importance for Prelims: Geography



Over the years, India's ability to track the formation of cyclones has improved significantly. There is a network of 12 doppler weather radars (DWR) along India's coast if one were to begin counting from Kolkata and trawl up to Mumbai — there are 27 in all in the country.

- Depending on where a storm is forming, these radars send pulses of radio waves to gauge the size as well as the speed at which water droplets are moving.
- The earlier generation of radars was unable to track such progress in real time, but with DWRs, now the base standard of weather radars, it is usually possible to detect a potential storm at least four-five days in advance.

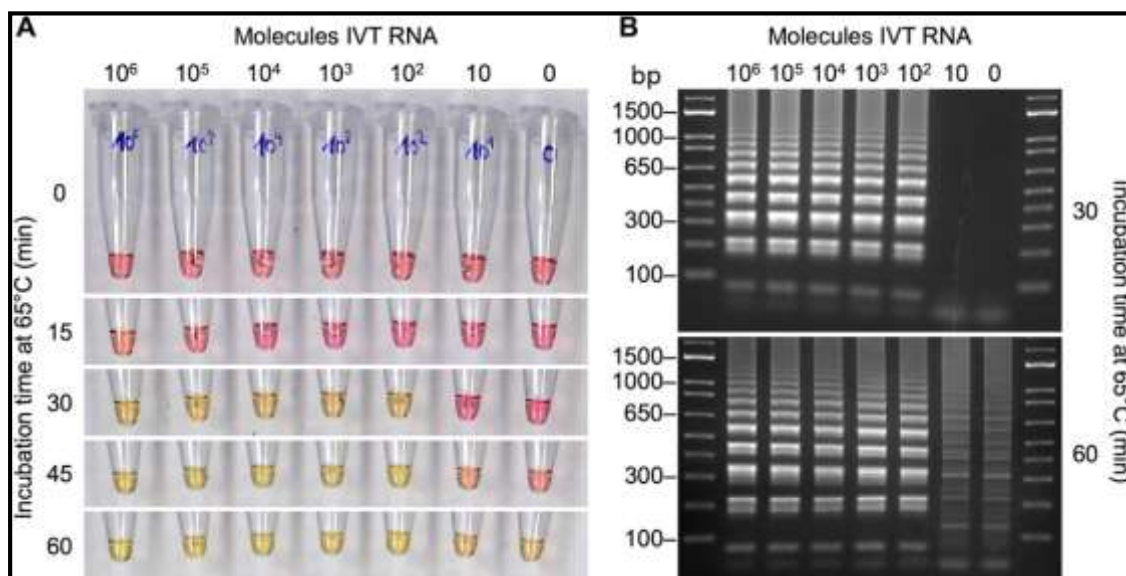
- The IMD also collaborates with similar international networks, such as the Japan Meteorological Agency, the U.S. National Hurricane Center, and the U.S. Central Pacific Hurricane Center, and these bodies constantly send warnings and forecasts about changes in the ocean weather.
- The near ubiquity of ocean-buoys that track changes in ocean sea surface temperatures as well as dedicated meteorological satellites improve the odds of early detection.
- The IMD follows a five-stage classification for cyclones, with the lowest a 'cyclonic storm' generating wind speeds of 62-87 kmph, and the highest a 'super cyclonic storm', generating winds over 222 kmph.

Cyclone Nivar :

- April-June and October-December are India's cyclone seasons. The arriving monsoon, as well as its retreat, stir up the surrounding seas and generate cyclones.
- Though the Bay of Bengal is three times more likely to generate cyclones, the ones that originate in the Arabian Sea are trickier, as the cyclone, while ostensibly moving away from India's western coast, can suddenly 'recurve' and move back in.
- There are also fewer radars along India's west coast than the eastern coast, and all these reasons make the Bay of Bengal cyclones more tractable.
- In this context, Nivar, because it conformed to a fairly predictable trajectory and was not super cyclonic in intensity, gave State administrations in Puducherry, Tamil Nadu and Andhra Pradesh time to prepare, and was far less damaging than Amphan.
- However, the cyclone season is not yet over and more systems are likely to form in the coming weeks, according to the IMD.

Topic 24: RT LAMP TEST

Importance for Prelims: Science & tech



About RT-LAMP Technology: RT- LAMP stands for Reverse Transcription Loop-Mediated Isothermal Amplification which produces a high DNA yield (>10μg).

- This method can produce results in significantly less time, which will increase the throughput of labs in India.
- The test uses an isothermal setup to create copies of viral DNA for detection, which significantly reduces the complexity of the overall process compared to the prevalent Real-Time PCR technology.
- This test also uses proprietary magnetic nanoparticle-based RNA extraction, which gives a highly purified and concentrated level of RNA.

Advantages:

- The LAMP technology has many advantages over RT-PCR technology. The RTPCR test needs different temperatures in one cycle. The temperature of the solution has to be changed from 92 degrees C to 56 degrees C and again to 72 degrees C every two minutes, and this cycle has to be repeated. Thus, the PCR test needs expensive thermal cycler as

well as the real time PCR machines.

- On the other hand, the new RT-LAMP technology is done at 65 degrees C, where the DNA amplification is done at a constant temperature (isothermal), so that expensive thermal cycler is not required.
- Moreover, the quantity of DNA amplified in the LAMP technology is hundred thousand times more than that is taking place in PCR.
- An equally important advantage of the LAMP technology is that the assay is so fast that results can be obtained within 30 minutes and positive samples are amplified as early as 10 minutes. .
- Yet another advantage of LAMP is that the reagents are to be stored at 4 degree C (ordinary fridge), whereas the PCR-based reagents are to be stored and transported at -20 degrees C, which needs deep freezers that escalate the cost.
- The LAMP technology does not need laborious preparation as in the case of RTPCR.
- LAMP is cost effective and does not need complex expensive equipment. Assays can be performed with minimum skill and minimum infrastructure.

Topic 25: SCO SUMMIT

Importance for Prelims: International Events



India will host the Heads of Government Council meeting of the eight-nation Shanghai Cooperation Organisation (SCO) , but Prime Minister Narendra will not attend the meeting, which will be chaired by Vice-President instead.

- It will be the first time that a summit-level meeting will be held under India's chairmanship, since it gained full membership of the organisation in 2017.
- This summit is held annually at the level of Prime Ministers of SCO and deals primarily with the trade and economic agenda of the organisation.

Shanghai Cooperation Organisation

- SCO is a permanent intergovernmental international organisation.
- It's a Eurasian political, economic and military organisation aiming to maintain peace, security and stability in the region.
- The SCO Charter was signed in 2002, and entered into force in 2003.
- The SCO's official languages are Russian and Chinese. It has two Permanent Bodies, **SCO Secretariat** in Beijing, and Executive

Committee of the **Regional Anti-Terrorist Structure (RATS)** in Tashkent.

- The Chairmanship of SCO is by rotation for a year by Member States.

Genesis:

- Prior to the creation of SCO in 2001, Kazakhstan, China, Kyrgyzstan, Russia and Tajikistan were members of the Shanghai Five.
- Shanghai Five (1996) emerged from a series of border demarcation and demilitarization talks which the four former Soviet republics held with China to ensure stability along the borders.
- Following the accession of Uzbekistan to the organisation in 2001, the Shanghai Five was renamed the SCO.
- India and Pakistan became members in 2017.

Topic 26: CHINA'S SUPER DAM

Importance for Prelims: International Events



China will build a “super” dam on the lower reaches of the YarlungZangboriver close to the Line of Actual Control (LAC) in Tibet, in a move that could have a far-reaching impact on northeast India’s water security.

- Originating in the Tibet Autonomous Region (TAR), the trans-border YarlungZangbo flows into Arunachal Pradesh where it is called Siang and then to Assam as Brahmaputra before flowing into Bangladesh.
- The dam could come up in the Medog county of TAR, which is close to Arunachal Pradesh.
- China has already built several smaller dams on the YarlungZangboriver.
- The new dam’s ability to generate hydropower could be three times that of central China’s Three Gorges Dam, which has the largest installed hydropower capacity in the world.

Topic 27: PULICAT LAKE

Importance for Prelims: Environment



The Union Ministry of Environment, Forests and Climate Change grants environment clearance for opening the bar mouth in pulicat lake permanently at a cost of ₹27 crore, the State government has informed the Madras High Court.

- Over 90,000 birds, including storks and pelicans, have come from faraway places to the lake this year attracting both domestic and foreign tourists.
- Pulicat Lagoon is the **second largest brackish water lagoon in India**, after Chilika Lake. It is present in the Coromondal Region i.e. Andhra Pradesh–Tamil Nadu Border.
- The barrier island of Sriharikota separates the lake from the Bay of Bengal and is home to the Satish Dhawan Space Centre.
- The primary inflows to the Pulicat Lake are Arani, Kalangi and Swarnamukhi.
- About 96% of the Pulicat Lake is present in Andhra Pradesh while only 3% is present in Tamil Nadu.

Topic 28: OIC

Importance for Prelims: International Organizations



India, 'strongly' rejected the criticism of its Kashmir policy by the Organisation of Islamic Cooperation (OIC).

- The Organisation of Islamic Cooperation (OIC) is the second largest intergovernmental organization after the United Nations with a membership of 57 states.
- It is **the collective voice of the Muslim world**. It endeavors to safeguard and protect the interests of the Muslim world in the spirit of promoting international peace and harmony among various people of the world.
- It was established upon a decision of the historical summit which took place in Rabat, Kingdom of Morocco on the 25th of September 1969. Headquarters: Jeddah, Saudi Arabia.
- **India is not a member of the OIC**. However, India was invited as a guest of honor at 46th Session of the Council of Foreign Minister in 2019.
- 2019 is the 50th anniversary of OIC.

Topic 29: POINT CALIMERE

Importance for Prelims: Environment



The arrival of flamingos from far flung areas has started at Point Calimere, one of the popular destinations in the State for the winged visitors.

- It is located in Nagapattinam district of Tamil Nadu spreads across an area of 30 sq.km and comprises sandy coastal, saline swamps and thorn scrub forests around the backwater.
- It is a **protected area(Wildlife Sanctuary) and a Ramsar site.**
- It harbors the single-largest stretch of the unique dry-evergreen forest in the country besides open grasslands and tidal mudflats is of interest to tourists.
- Around 100 species of birds including the Greater Flamingo, Painted Stork, Little Sting, Sea Gull and Brown-headed gull have been making their presence felt since September.
- **Blackbuck** (AntelopeCervicapra) is the flagship species of the sanctuary.
- Other important animals are the spotted deer, black-napped hare, wild

boar, Indian jackal, feral horses, palm civet, short-nosed fruit bat, jungle cat and monitor lizard.

Topic 30: ECO BRIDGE

Importance for Prelims: Environment



In a first-of-its-kind initiative, the Uttarakhand Forest Department has built a special eco bridge in the Ramnagar forest division of Nainital district for reptiles to cross over the busy jungle road.

- The highway to Nainital is a very busy one and a large number of vehicles ply on it during the tourist season. The jungle next to it is home to many reptiles including pythons and monitor lizards.
- This is a dense forest, and elephants, leopards, deer, and blue bulls move in this area.
- Drivers can see them from some distance and slow down or stop, but they rarely do for snakes, lizards, monitors, or squirrels.
- So, the bridge was built to provide a safe passage for the reptiles from the vehicles coming from both sides.
- The bridge will have four camera traps for monitoring purposes and it will be studied as a model by the Forest Department, Ramnagar Divisional Forest Officer (DFO).

Eco- Bridge:

- An eco-bridge or the eco conduct is an overpass that allows easy crossing

of animals across human-made barriers.

- The intervention requires the laying of fertile soil to grow grass and plants over the structure, so that fragmentation of the reserve forest is camouflaged.