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U.S. sanctions Indian petrochemical company for Iran oil purchases

For Prelims

About JCPOA:

- The Joint Comprehensive Plan of Action (JCPOA) was signed by President Barack Obama, in 2015 and dismantled in 2018 by President Donald Trump.
- The JCPOA resulted from prolonged negotiations from 2013 and 2015 between Iran and P5+1 (China, France, Russia, the United Kingdom, the United States + Germany).
- Iran had agreed to significantly cut its stores of key components for nuclear weapons like centrifuges, enriched uranium and heavy water in return for the West's promise to lift the economic sanctions.
- The International Atomic Energy Agency (IAEA) played an important role in enforcing the deal, keeping a check on Iran and inspections.
- US has withdrawn from the deal in 2018 but UN sanctions remain lifted but they would automatically "snap back" in place for 10 years, with the possibility of a five-year extension, if Iran violates any aspect of the deal.



About CAATSA:

- Countering America's Adversaries Through Sanctions Act (CAATSA) is a law enacted by the US congress in 2017 and was meant to punish countries having deep engagements with Russia, North Korea, and Iran through economic sanctions.
- The CAATSA contains 12 types of sanctions on persons engaged in a "significant transaction" with Russia, North Korea, and Iran.
- The US President was given the authority in 2018 to waive CAATSA sanctions on a case-by-case basis.

For Mains

India-Iran Relations:

- India and Iran have been sharing close civilizational ties since the times of the Mesopotamian Civilisation and Indus Valley Civilisation.
- The "Tehran Declaration" was signed during the Prime Ministership of Atal Bihari Vajpayee's visit to Iran which affirmed the shared vision of the two countries for an "equitable, pluralistic and co-operative international order."
- Till 2019 Iranian Oil made up about 11% of India's oil intake which has since been reduced to negligible levels.

Reserve Bank raises rates by 50 bps, brings down growth outlook to 7%

For Prelims

About Monetary Policy Committee.

- The Monetary Policy Committee (MPC) is created to set the policy interest rates as a part of its monetary policy.
- It is headed by the Governor of the Reserve Bank of India (RBI) and has another 5 members out of whom 3 are nominated by the government and the other three will be from RBI.

- No government official will be nominated to the MPC.
- The government nominees to the MPC will be chosen by a Search-cum-Selection Committee under Cabinet Secretary and consisting of RBI Governor and Economic Affairs Secretary and three experts in the field of economics or banking or finance or monetary policy.
- Members of the MPC are appointed for a period of four years and shall not be eligible for reappointment.
- Decisions are taken by majority vote with each member having a vote.
- It is set up based on the recommendation of the Urjit Patel Committee.
- The Monetary Policy Committee (MPC) was set up under Section 45ZB of the RBI Act of 1934 by the Union government.
- The Monetary Policy Committee (MPC) is required to meet at least four times a year.
- The quorum required for the meeting of the MPC is four members.
- Each member of the MPC has one vote, and in the event of an equality of votes, the Governor has a second or casting vote.
- Once every six months, the Reserve Bank is required to publish a document called the Monetary Policy Report.



India's Actions at UNSC

Context:

- India was among four countries that abstained on a draft resolution at the United Nations Security Council (UNSC) condemning the so-called referenda organized by Russia across four regions of Ukraine.

Background:

- Based on the results of local elections held by the Russian government in Kherson, Zaporizhzhia, Luhansk, and Donetsk, Russian President Vladimir Putin “annexed” these four districts inside the internationally recognized borders of Ukraine.
- Despite receiving 10 votes in favour, the UNSC resolution sponsored by the United States and Albania rejected by the 15-member Council recently after Russia exercised its veto to stop it.



What is in the resolution?

- The resolution urges Russia to withdraw its military from Ukraine and urges the international community to reject any changes made to Ukraine's territory.
- At the Friday vote, China, Brazil, and Gabon were the additional nations to abstain.
- According to India's Permanent Representative to the UN, it decided to abstain from voting on the resolution “taking in view the entirety of the evolving circumstances” (UNPR)

Challenges:

- The global order should be based on the U.N. Charter, international law and the respect for sovereignty and territorial integrity.

- India seeks that the issue should be resolved through peace talks and bring immediate ceasefire.
- Some accuse USA of its double standards, as USA had supported Taiwan when it declared that it would use force to protect its territorial integrity.
- But when it comes to the case of Russia, US is being taking a different stand.

Corbett Tiger Reserve (CTR)

Context:

- The much-awaited tiger safari project of the Uttarakhand government is under scanner after a Forest Survey of India (FSI) report stated that over 6,000 trees were illegally cut in the Corbett Tiger Reserve (CTR) against the permission for 163 for the Pakhru Tiger Safari.



About Jim Corbett National Park:

- Jim Corbett National Park is a forested wildlife sanctuary in northern India's Uttarakhand State. Rich in flora and fauna, it's known for its Bengal tigers. Animals, including tigers, leopards and wild elephants.
- This national park has the distinction of being recognized as the first National Park to be established in mainland Asia.
- The park was then named as the 'Hailey National Park' and was later renamed as '**Corbett National Park**' after James Edward **Corbett** the noted hunter turned conservationist of the area. The area came under 'Project Tiger' in 1971 when Gov. of India launched this ambitious conservation project.

Where is it located?

- Jim Corbett National Park is located between the Shiwalik Himalayas and the terai region in Uttarkhand.

What is there in the report?

- The Forest Survey Institute which was tasked to conduct the survey has come out with the report.
- According to the report the area cleared under the Corbett Tiger Reserve (CTR) is estimated to be about 16.21 hectares.
- When it comes to the number of trees which were cut off is estimated to be about 6,093

PM launches 5G, calls it start of a new era

For Prelims:



About 5G:

- 5G or the 5th generation mobile network. It is the new global wireless standard after 1G, 2G, 3G, and 4G networks.
- It helps in the creation of a new kind of network that is designed to connect virtually everyone and everything together including machines, objects, and devices in a new interconnected technology called the Internet of Things (IoT).

For Mains

Advantage of 5G:

- 5G is expected to create a cumulative economic benefit of \$1 trillion in India by 2035, according to a report by a government-appointed panel.
- Global telecom industry GSMA has forecast that India will have about 70 million 5G connections by 2025.
- 5G would be able to support a much larger range of applications and services, including driverless vehicles, tele-surgery and real time data analytics.
- 5G can also help to make transport infrastructure more efficient by making it smart.
- 5G will enable vehicle-to-vehicle and vehicle-to-infrastructure communication, making driverless cars, among other things, a reality.



The challenges in implementing 5G:

Frequency allocation:

- Indian operators have far less spectrum in comparison to international operators. The high investment cost which makes telecom companies unsure about Return on Investment.

Network investment:

- In India, the telecom sector is facing capital augmentation issues which need to be resolved. Non-availability of funds for investment: Many of the Indian operators are also weighed down by debt.

Regulatory restrictions:

- Faster rounds of new technology introduction when prior technology investments have not been recouped add further complexity.

Technical Challenges:

- Designing IT architecture that can be deployed globally, while still allowing for localized technology to cater for different regions is a challenge.

Lack of Government incentives:

- Government has little incentive to forgo revenues, given the increasing pressure on its revenues, especially after the covid-19 induced slowdown.

Light Combat Helicopter (LCH)

For Prelims

About Light Combat Helicopter (LCH):

- LCH is designed and developed indigenously by the Hindustan Aeronautics Limited (HAL's) helicopter division.
- LCH is a twin-engine dedicated combat helicopter of 5 to 8-tonne class.
- The LCH incorporates advanced technologies and stealth features for effective combat roles and has the capability to carry out advanced combat roles such as anti-tank combat, counter surface force operations, counterinsurgency, destruction of enemy air defence, search and rescue etc.
- The LCH is the only attack helicopter in the world that is able to land and take off at an altitude of 5,000 m while carrying a considerable load of weapons and fuel.
- It is able to effectively operate even in temperatures ranging from minus 50 degrees Celsius on snow peaks to 50 degrees Celsius in the desert.
- LCH has been formally inducted into the 143 Helicopter Unit 'Dhanush' at the Jodhpur Air Force Station.
- The helicopter has an effective combat radius of 500 km and a service ceiling of 21,000 feet which makes it ideal to operate at high altitude areas of the Siachen glacier.
- The LCH is armed with 20 mm nose gun, 70 mm rockets, anti-tank guided missile 'Dhruvastra' and air-to-air missile 'Mistral-2' of MBDA which has a maximum interception range of 6.5 km.

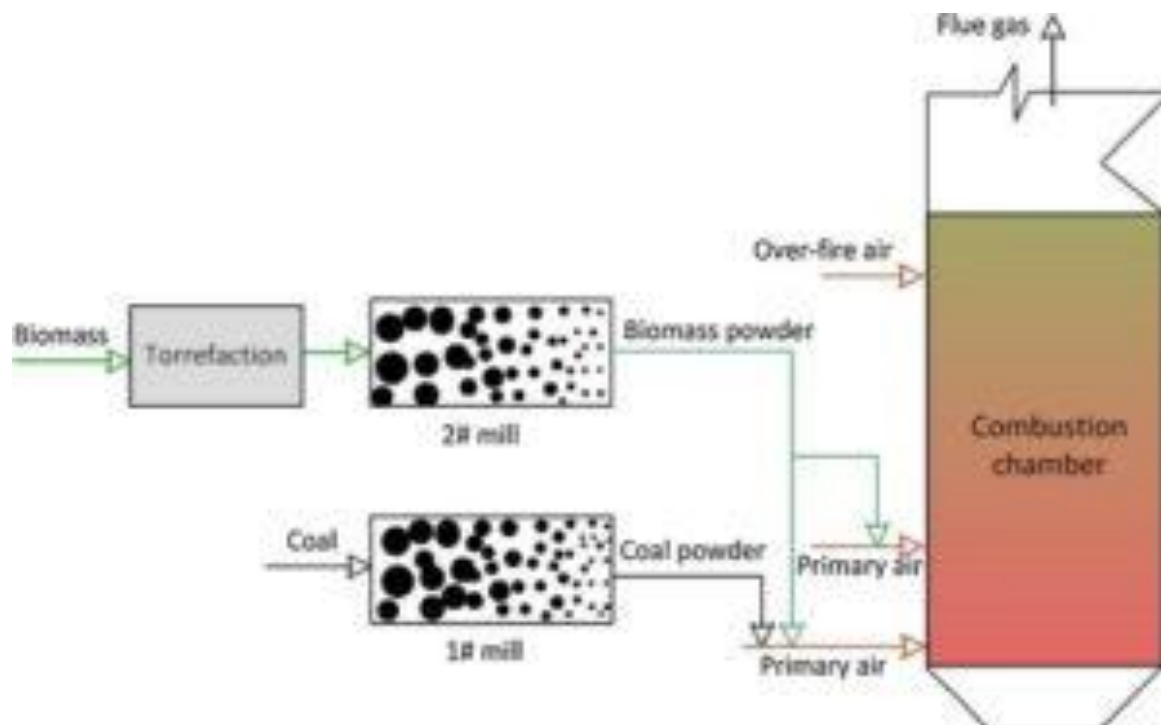


Biomass Co-firing

For Prelims:

About Biomass Co-Firing:

- Biomass co-firing is the practice of substituting a part of the fuel with biomass at coal thermal plants.



About Biomass:

- Biomass is plant or animal material used as fuel to produce electricity or heat. Examples include wood, energy crops and waste from forests, yards, or farms.
- Approximately 32% of the total primary energy use in the country is still derived from biomass and more than 70% of the country's population depends upon it for its energy needs.
- However this number is slightly misleading as most of this represent inefficient and pollution causing fuels such as fire wood or cow dung.

For Mains

How does Biomass co-firing work?

- Biomass co-firing stands for adding biomass as a partial substitute fuel in high efficiency coal boilers.
- This process is done in the following steps:
- Coal and biomass are burned together in boilers that have been designed to burn coal.
- The existing coal power plant needs to be partly reconstructed and retrofitted in order to suit this function.

Advantages of Biomass co-firing:

- Co-firing is an option to convert biomass to electricity, in an efficient and clean way, and to reduce GHG (Greenhouse Gases) emissions of the power plant.
- Biomass co-firing is a globally accepted cost-effective method for decarbonising a coal fleet.
- Biomass co-firing can help to find a profitable solution to the problem of stubble which is causing massive air pollution in the NCR region.
- According to experts Biomass can replace between 20% and 50% of the coal used in thermal power generation.
- However currently India is aiming to replace 5-7 per cent of coal with biomass which can save 38 million tonnes of carbon dioxide emissions as well as millions in foreign exchange.

Challenges in meeting the target:

- According to the 'National Mission on use of biomass for coal thermal power plants' set up by the Union Ministry of Power around 95,000-96,000 tonnes of biomass pellets are required per day for co-firing.
- But India's pellet manufacturing capacity is 7,000 tonnes per day at present even though a surplus 228 million tonnes of agricultural residue is available in the country.

Govt. may lift AFSPA in 4 States after Naga peace pact

For Prelims:

About AFSPA:

- Armed Forces (Special Powers) Act (AFSPA) grants special powers to the Indian Armed Forces and the state and paramilitary forces in areas classified as “disturbed areas.”
- AFSPA allows armed forces to open fire, even causing death, against any person in violation of the law or carrying arms and ammunition.
- It gives them powers to arrest individuals without warrants, because of “reasonable suspicion,” and search premises without warrants.
- Currently, AFSPA remains in force in parts of Assam, Nagaland and Manipur as well as in parts of Arunachal Pradesh and Jammu & Kashmir.
- It can be imposed by the Centre or the Governor of a state, on the state or parts of it, after these areas are declared “disturbed” under Section 3.
- The 1972 amendment allows the Central government and the States to declare an area as “disturbed”.
- The Union Home Ministry issues periodic “disturbed area” notification to extend AFSPA only for Nagaland and Arunachal Pradesh.
- The notification for Manipur and Assam is issued by the State governments.
- The Act gives powers to the central government to unilaterally impose AFSPA without consultation with the state government.
- While the Act gives powers to security forces to open fire, they must give prior warning to the suspect.
- As per the act, once the suspects are apprehended, the security forces must hand them over to the local police station within 24 hours.

For Mains

The history of AFSPA:

- The Armed Forces (Assam and Manipur) Special Powers Act, 1958, was enacted as a successor to the Assam Disturbed Areas Act of 1955 to deal with the uprising in the Naga Hills and adjoining areas.

- The Act was replaced by the AFSPA for so that it may apply to a wider area. A similar Act specific to Jammu and Kashmir was enacted in 1990.
- The AFSPA was first revoked from 60% of Assam on April 1, 2022.

OPEC Plus decides to cut production

For Prelims

About OPEC:

- The Organisation of the Petroleum Exporting Countries is a permanent, intergovernmental organization, created at the Baghdad Conference in 1960, by Iran, Iraq, Kuwait, Saudi Arabia, and Venezuela.
- It was created with the aim to maintain the supply of oil in order to control the price of crude oil in the world market, in order to avoid fluctuations that might affect the economies of both producing and purchasing countries.
- The organisation is headquartered in Vienna, Austria.
- OPEC membership is open to any country which is a substantial exporter of oil, and which shares the ideals of the organization.
- OPEC currently has a total of 14 Member Countries which are, Iran, Iraq, Kuwait, United Arab Emirates (UAE), Saudi Arabia, Algeria, Libya, Nigeria, Gabon, Equatorial Guinea, Republic of Congo, Angola, Ecuador and Venezuela.

About OPEC plus:

- The non-OPEC countries which export crude oil are termed as OPEC plus countries.
- OPEC plus countries include Azerbaijan, Bahrain, Brunei, Kazakhstan, Malaysia, Mexico, Oman, Russia, South Sudan and Sudan.
- OPEC Plus was created in 2016 when OPEC countries decided to ally with other oil-producing countries outside the group to cut down the global output of oil.
- OPEC countries and their allies, in a ministerial meeting held in 2019, accepted a 'Charter of Cooperation', to institutionalise the cooperation.

For Mains

The importance of OPEC to India:

- India is the world's third-largest importer of crude oil in the world.
- India imports about 84% of its oil and we are heavily reliant upon West Asian supplies to meet over three-fifths of its demand.
- Crude Oil also forms the largest component of India's import bill and an increase in crude prices can make India's current account deficit higher.
- The cut in OPEC Plus production can create upward pressure on oil prices which have fallen to about \$90 per barrel from about \$120 per barrel in early June.

The criterion for SC status

For Mains:

Who are currently included in the consideration for Scheduled Caste status?

- The initial Constitution (Scheduled Castes) Order of 1950, provided for recognising only Hindus as Scheduled Castes.
- This Order was later amended in 1956 to include Dalits who had converted to Sikhism and again amended in 1990 to include Dalits who had converted to Buddhism.
- Currently Dalit Christians are excluded from being considered as Scheduled Caste due to Imperial Order of 1936 of the then colonial government, which was the first document which classified a list of the Depressed Classes and it had specifically excluded "Indian Christians" from it.

Why are Sikhs and Buddhists included in the list?

- The decision to include Dalit Sikhs and Dalit Buddhists were taken based on the reports of the Kaka Kalelkar Commission in 1955 and the High Powered Panel (HPP) on Minorities, Scheduled Castes and Scheduled Tribes in 1983 respectively.

Why are Dalit Christians not added to the list?

- The Office of the Registrar General of India (RGI) has been historically reluctant in expanding the ambit of the Order beyond members of Hinduism or Sikhism.
- RGI had cautioned the government that Scheduled Caste status is meant for communities which suffer from social disabilities arising out of the practice of untouchability, which is not prevalent amongst Christians.

- It must be noted that such an addition would significantly swell the population of SCs across the country.
- Clause (2) of Article 341 requires that for any community to be added to SC status, they must belong to a “single ethnic group.”
- However, Dalits who converted to Islam or Christianity belonged to different sets of caste groups and not just one.

Why they need to be included?

Several Commissions have reported that even after conversion, members who were originally from SCs continued to experience the same social disabilities among Indian Christians and Indian Muslims.

Some of which are:

- First Backward Classes Commission’s report in 1953,
- the Report of the Committee on Untouchability Economic and Educational Development Of the Scheduled Castes in 1969,
- the HPP report on SCs, STs, and Minorities in 1983,
- the Mandal Commission Report, the report of the Prime Minister’s High-Level Committee formed in 2006,
- a 2008 study conducted by the National Commission for Minorities,
- the Ranganath Misra Commission Report

What is the Insolvency and Bankruptcy Code?

For Prelims:

What is insolvency?

- Insolvency is when a situation arises where individuals or companies are unable to repay their outstanding debt.

What is Bankruptcy:

- Bankruptcy is a situation whereby a court of competent jurisdiction has declared a person or other entity insolvent, having passed appropriate orders to resolve it and

protect the rights of the creditors. Hence it is the legal declaration of one's inability to pay off debts.

About IBC:

- Insolvency and Bankruptcy Code, helps to provide a time-bound process for resolving insolvency in companies and among individuals.
- Insolvency and Bankruptcy Code (IBC) was implemented to consolidate all laws related to insolvency and bankruptcy and to tackle Non-Performing Assets (NPA).

For Mains

Objectives of IBC:

- To consolidate and amend all existing insolvency laws in India.
- To simplify and expedite the Insolvency and Bankruptcy Proceedings in India.
- To protect the interest of creditors including stakeholders in a company.
- To revive the company in a time-bound manner.
- To promote entrepreneurship.
- To get the necessary relief to the creditors and consequently increase the credit supply in the economy.
- To work out a new and timely recovery procedure to be adopted by the banks, financial institutions or individuals.
- To set up an Insolvency and Bankruptcy Board of India.
- Maximization of the value of assets of corporate persons.

Challenges for IBC:

- In FY22, it took 772 days to resolve cases involving companies that owed more than ₹1,000 crore even though the legal limit was set at 330 days.
- The average number of days it took to resolve such cases increased rapidly over the past five years.
- Parliamentary Standing Committee on Finance pointed out in 2021, that in the five years of the IBC, creditors on an average had to bear an 80% haircut in more than 70% of the cases.
- In the cases involving 33 out of 85 companies so far which owed more than ₹1,000 crore, lenders had to take above 90% haircuts.

India's Services Sector

Context:

- India's services sector stuttered in September as new business and output growth grew at the slowest pace since March, as per the S&P Global India Services Purchasing Managers' Index (PMI), which eased to 54.3 from August's robust 57.2 level.



Background:

- India's services sector has been the major contributor to India's GDP since the past two decades.
- The services industry not only makes up the majority of India's GDP, but it has also drawn substantial foreign investment, made a big contribution to exports, and created a significant amount of jobs.
- The services industry in India encompasses a broad range of activities including trade, lodging and dining, transportation, storage, and communication, financing, insurance, real estate, commercial services, community, social, and personal services, as well as services related to construction.

What is there in the report?

- As per the S&P Global India Services Purchasing Managers' Index (PMI), Although the services sector had growth in September for the fourteenth month running, price pressures, more competition, and "unfavourable public policies hampered progress," according to the survey-based PMI
- The slowdown in growth also slowed the increase in employment from August. Though mood in the business sector continued to improve last month, it was at its highest point in more than 7.5 years.
- While selling price growth declined to its slowest rate since March, input cost inflation stayed similar to August levels.
- The steepest increase in user fees assessed by businesses was in the areas of transportation, information, and communication, whereas the largest increase in cost burdens was in the consumer services sector due to rising energy, food, labour, and material costs.

Way Forward:

- As Indian economy is heavily dependent on the services sector, this latest data from the index is worrying.
- Apart from this the weak external demand weighed on overall sales, with international orders declining further will pose a challenge further and also the depreciation of Rupee will be an additional challenge.

Uighurs of Xinjiang

For Prelims:

About Uyghurs

- The Uyghurs alternatively spelled Uighurs, Uygurs or Uigurs, are a Turkic ethnic group originating from and culturally affiliated with the general region of Central and East Asia.
- The Uyghurs have traditionally inhabited a series of oases scattered across the Taklamakan Desert within the Tarim Basin.
- The Uyghurs are recognized as native to the Xinjiang Uyghur Autonomous Region in Northwest China.



- They are one of China's 55 officially recognized ethnic minorities.

For Mains:

Why Uyghurs are in News?

- India has abstained from UNHRC vote on Uighur Muslims brought by the US, Britain and Canada.
- The motion failed to pass since it only was able to gain 17 votes in favor and 19 against while 11 countries abstained from voting.
- India said that it is sticking to its policy of not voting against any country in institutions like the UNHRC.

Why was the motion brought?

- Human rights groups believe China has detained more than one million Uyghurs against their will over the past few years in a large network of what the state calls “re-education camps”, and sentenced hundreds of thousands to prison terms.
- The leading human rights groups Amnesty and Human Rights Watch have published reports accusing China of crimes against humanity.

Nobel Peace Prize

For Prelims:

About Nobel Peace Prize:

- The Nobel Peace Prize is awarded on the day of Alfred Nobel's death, the 10th of December, since 1901.
- The Nobel Peace Prize has been awarded 103 times to 140 Nobel Prize laureates between 1901 and 2022, 110 individuals and 30 organizations.
- The Nobel Peace Prize is one of the five Nobel Prizes established by the will of Swedish industrialist, inventor and arms (military weapons and equipment) manufacturer Alfred Nobel, along with the prizes in Chemistry, Physics, Physiology or Medicine and Literature.

About Alfred Nobel:

- Alfred Bernhard Nobel was a Swedish chemist, engineer, inventor, businessman, and philanthropist.
- Nobel is most famous for inventing dynamite, which allowed for a safer and easier means of harnessing the explosive power of nitro-glycerine which was patented in 1867.
- He was called “the merchant of death” due to his weapon manufacturing companies, the creations of which led to widespread destruction in the 19th Century CE.
- He decided to posthumously donate the majority of his wealth to found the Nobel Prize due to a desire to leave behind a better legacy.



Who are the Winners of Nobel Peace Prize 2022?

About Ales Bialiatiski:

- Ales Viktaravich Bialiatiski is a Belarusian pro-democracy activist and prisoner of conscience known for his work with the Viasna Human Rights Centre.
- Bialiatiski has been supporting Pro-Democracy movements in Belarus since the 1980s, during the later years of Soviet Union.
- Belarus is currently wildly known as the last dictatorship in Europe.

About Memorial:

- Memorial is an international human rights organisation, founded in Russia during the fall of the Soviet Union to study and examine the human rights violations and other crimes committed under Joseph Stalin's reign.

About The Centre for Civil Liberties:

- The Centre for Civil Liberties is a human rights organization led by the Ukrainian lawyer Oleksandra Matviichuk.
- Them winning the Nobel Peace Prize was the first ever Nobel Prize awarded to a Ukrainian citizen or organization.

The Crimea Bridge

Context:

- The road-and-rail bridge linking Russia and the Crimean Peninsula was damaged in a powerful blast on recently, hitting a crucial supply route for Russian forces in Ukraine.

Importance of the Bridge:

- The bridge is essential for the delivery of goods such as food, fuel, and other necessities to Crimea, where the Black Sea Fleet of Russia has historically called the port of Sevastopol home.
- After Moscow invaded Ukraine on February 24 and sent forces from the Crimea to take control of much of the Kherson region and some of the neighbouring Zaporizhzhia province, it also became a crucial supply route for Russian forces.
- According to the Russian Defense Ministry, existing land and maritime channels could supply those troops with whatever they needed.



Location:

- This 19 km long bridge is constructed over the Kerch Strait.

The Kerch Strait –

- The Kerch Strait is a strait in Eastern Europe. It connects the Black Sea and the Sea of Azov, separating the Kerch Peninsula of Crimea in the west from the Taman Peninsula of Russia's Krasnodar Krai in the east.
- The strait is 3.1 kilometres to 15 kilometres wide and up to 18 metres deep.

Crimean Peninsula:

- Crimea is a peninsula in Eastern Europe, on the northern coast of the Black Sea. It has a population of 2.4 million, made up mostly of ethnic Russians, with significant Ukrainian and Crimean Tatar minorities.
- The peninsula is almost entirely surrounded by the Black Sea and the smaller Sea of Azov.

Palaeogenomics

Context:

- The Nobel Prize for Physiology this year has been awarded to Svante Pääbo, Swedish geneticist, who pioneered the field of palaeogenomics, or the study of ancient hominins by extracting their DNA.

Importance of the work:

- In the past, studying ancient humans has mostly involved examining their skeletons and the items they used to live, such as tools, utensils, weapons, and houses.
- Pääbo was the first to use DNA, the genetic code found in all living things, to investigate the relationships between numerous ancient human species.
- He established that Neanderthals, a relative of the human species that appeared 100,000 years earlier, interbred with humans and that between 1-4% of their genes are still present in people with European and Asian ancestry.
- Later, it was determined by Pääbo's team that a 40,000-year-old finger bone from a Siberian cave belonged to a new species of human known as Denisova.

Challenges to Extract DNA from Fossils:

- The difficulty with recovering DNA from fossils is that there isn't much viable material and the DNA degrades quite quickly.
- Given that such bones may have been handled by multiple people, the likelihood that human and other bacterial DNA will have been introduced increases.
- One of the biggest obstacles to analysing DNA from fossils has been this.
- In his early career, Pääbo made the controversial and career-boosting decision to harvest DNA from a 2,500-year-old Egyptian mummy.
- However, much later in life, he said that the mummy-DNA was probably polluted.

Distribution of Sodium on the Moon's surface

Context:

- Scientists from Indian Space Research Organisation (ISRO) have mapped out the global distribution of sodium on the Moon's surface.
- They used the CLASS instrument (Chandrayaan-2 large area soft X-ray spectrometer) carried by the second Indian Moon mission, Chandrayaan-2.

How was it done?

- This is the first effort to provide a global-scale measurement of sodium on the lunar surface using X-ray fluorescent spectra.
- Non-destructively analysing the composition of materials is a popular application for X-ray fluorescence.
- When the sun emits solar flares, the moon is exposed to a significant amount of X-ray radiation, which causes X-ray fluorescence.
- The CLASS counts the total amount of X-ray photons arriving from the moon and assesses their energy.
- The intensity is a measurement of how many atoms are present, and the energy of the photons reveals the number of atoms (for example, sodium atoms release X-ray photons of 1.04 keV).

Other Findings:

- Rock samples were returned from earlier lunar trips like Apollo-11, Luna, and Chang'e-5.
- The sodium content of the rocks was properly measured in those missions.
- Apart from the trace amounts detected in lunar rocks, a recent analysis by the Chandrayaan group reveals that there is a thin veneer of sodium atoms that are weakly linked to the lunar surface (as mentioned earlier).
- When enough energy is provided to them by solar UV light and solar wind ions, these sodium atoms on the surface are released.

Way Forward:

- This achievement by Indian Space Research Organization (ISRO), is a great step towards scientific exploration of lunar surfaces.
- The scientists of Indian Space Research Organization (ISRO) have stated that “As the solar cycle is in its ascending phase, we expect more solar flares that would ensure a larger coverage of all elements on the moon by CLASS at the highest spatial resolution ever”.

Early Warning System for Heatwaves

Context:

- Total duration of heatwaves has increased by about three days during the last 30 years and a further increase of 12-18 days is expected by 2060.
- In future climate, heatwaves will be spread to new areas including southern parts of India. Climate change is causing heatwaves more frequently, and they are much stronger and can last for more days.

Background:

- A heatwave is a stretch of unseasonably high temperatures that normally lasts three days or longer.

- Heatwaves typically occur in India between March and June. Every season, two to three heatwave incidents are typical.
- Due to favourable meteorological conditions, heatwaves are primarily witnessed over two regions: central and northwest India and the coasts of Andhra Pradesh and Odisha.

Causes:

- Heat waves have numerous, interconnected effects on the economy, environment, agriculture, energy, and water.
- Devastating effects were caused by the recent March–April 2022 heatwave in Pakistan and India.
- At least 90 deaths are thought to have resulted from it in Pakistan and India. In northern Pakistan, it also caused a severe Glacial Lake Outburst Flood.

Early Warning System in India:

- The India Meteorological Department (IMD), the National and State disaster management authorities, and municipal entities are all part of the country's robust national framework for heat response plans.
- The core of this heat action plan is the early warning system.
- The Ministry of Earth Sciences (MoES) had set up an advanced forecasting system for early warnings of heatwaves as part of the National Monsoon Mission.
- IMD has the capacity to reasonably accurately forecast the genesis, length, and intensity of heatwave events up to four or five days in advance.

Delhi's air pollution

For Prelims:



About Graded Response Action Plan:

- Supreme Court's in M. C. Mehta vs. Union of India (2016) expressed concerns regarding air quality in the National Capital Region of Delhi.
- The action plan was formulated in 2016 and notified in 2017 for Delhi and the National Capital Region (NCR) due to this judgement.
- GRAP was formulated after several rounds of meetings were held between the EPCA and state government representatives and domain experts.

The GRAP for Delhi-NCR is divided into four stages of air quality:

- Stage one for “poor” Air Quality Index (AQI) ranging between 201 and 300,
- Stage two for “very poor” AQI of 301-400,
- Stage three for “severe” AQI of 401-450 and
- Stage four for “severe plus” AQI more than 450.

For Mains:

What does each stage entail:

Stage 1:

- In stage one, a ban on construction and demolition activities at specific sites will be implemented.
- Also, agencies should ensure that all solid waste is lifted from dedicated dump sites, and none is dumped on open land.
- Heavy fines are to be imposed for openly burning municipal solid waste and biomass.
- Roads will be mechanically cleaned and water sprinkled from time to time.
- The ban on firecrackers should be followed as per the directions of respective courts.

Stage 2:

- In stage two, mechanised sweeping of roads will be done daily, while water will be sprinkled using dust suppressants at least on alternate days.
- Authorities would need to ensure an uninterrupted power supply to discourage the use of generators.

Stage 3:

- At stage three, the frequency of cleaning roads intensifies.
- Water would be sprinkled daily before peak traffic hours.
- Authorities will levy different rates on public transport services to encourage off-peak travel.
- A strict ban will be enforced on all construction activities, except ongoing construction of railway, metro, airport and hospital projects.
- The State government will be empowered to impose restrictions on BS-III petrol and BS-IV diesel light motor vehicles (LMVs).

Stage 4:

- During stage four, when the air quality rises to dangerous levels, entry of all trucks, except those carrying essential commodities, will be restricted.
- Four-wheeler diesel LMVs would also be banned except those used for essential or emergency services.
- All construction and demolition activities would have to be stopped.
- The respective governments could, meanwhile, take a call on allowing public, municipal and private offices to work on 50% strength.
- Additional emergency measures like closing schools, non-emergency commercial activities and plying of vehicles on an odd-even basis may also be enforced.

The GRAP includes a graded advisory for the public including properly tuning engines of their vehicles, ensuring accurate air pressure in tyres and updating PUC (pollution under control) certificates.

Heroin seized in Kerala

For Prelims:

What is Heroin:

- Heroin is an opioid drug made from morphine, a natural substance taken from the seed pod of the various opium poppy plants grown in Southeast and Southwest Asia, Mexico, and Colombia.
- Heroin is a highly addictive substance and is known to cause harmful side effects if consumed consistently.

For Mains:

Side effects of Heroin use:

Short-Term Effects

People who use heroin report feeling a “rush” (a surge of pleasure, or euphoria). However, there are other common effects, including:

- dry mouth
- warm flushing of the skin
- heavy feeling in the arms and legs
- nausea and vomiting
- severe itching
- clouded mental functioning
- going “on the nod,” a back-and-forth state of being conscious and semiconscious

Long-Term Effects

People who use heroin over the long term may develop:

- insomnia
- collapsed veins for people who inject the drug
- damaged tissue inside the nose for people who sniff or snort it
- infection of the heart lining and valves
- abscesses (swollen tissue filled with pus)
- constipation and stomach cramping
- liver and kidney disease
- lung complications, including pneumonia
- mental disorders such as depression and antisocial personality disorder
- sexual dysfunction for men
- irregular menstrual cycles for women

Injection Drug Use, HIV, and Hepatitis

- People who inject drugs such as heroin are at high risk of contracting the HIV and hepatitis C (HCV) virus.
- These diseases are transmitted through contact with blood or other bodily fluids, which can occur when sharing needles or other injection drug use equipment.
- HCV is the most common bloodborne infection in the United States.
- HIV (and less often HCV) can also be contracted during unprotected sex, which drug use makes more likely.

Other Potential Effects

- Heroin often contains additives, such as sugar, starch, or powdered milk, that can clog blood vessels leading to the lungs, liver, kidneys, or brain, causing permanent damage.
- Also, sharing drug injection equipment and having impaired judgment from drug use can increase the risk of contracting infectious diseases such as HIV and hepatitis (see “Injection Drug Use, HIV, and Hepatitis”).

UN Peacekeeping Forces

For Prelims:

About UNPKF:

- The first time UN Peacekeeping Forces were first deployed in 1948 when the UN Security Council authorized the deployment of UN military observers to the Middle East.



Three basic principles of UNPKF:

- Consent of the parties;

UN peacekeeping operations are deployed with the consent of the main parties to the conflict. This requires a commitment by the parties to a political process.

- Impartiality;

United Nations peacekeepers should be impartial in their dealings with the parties to the conflict, but not neutral in the execution of their mandate.

- Non-use of force except in self-defence and defence of the mandate.

UN peacekeeping operations are not an enforcement tool. However, they may use force at the tactical level, with the authorization of the Security Council, if acting in self-defence and defence of the mandate.

- UNPKF brings together the General Assembly, the Security Council, the Secretariat, troop and police contributors and the host governments in a combined effort to maintain international peace and security.
- The Security Council determines when and where a UN peace operation should be deployed.
- The Security Council establishes a peace operation by adopting a Security Council resolution. The resolution sets out that mission's mandate and size.
- The Security Council can vote to extend, amend or end mission mandates as it deems appropriate.
- Currently there are 12 UN peacekeeping operations deployed on three continents.
- UNITED NATIONS MILITARY OBSERVER GROUP IN INDIA AND PAKISTAN (UNMOGIP) is deployed in Jammu & Kashmir to supervise the ceasefire between India and Pakistan on 24 January of 1949.
- The UN Peacekeeping force is supplemented by personnel from member nations on a volunteer basis.

Department of Peace Operations (DPO):

- DPO provides political and executive direction to UN peacekeeping operations around the world and maintains contact with the Security Council, troop and financial contributors, and parties to the conflict in the implementation of Security Council mandates.

SC Collegium

For Prelims

About Collegium:

- Collegium is a mechanism developed by the judiciary through judgements delivered by the Supreme Court to recommend Judges to Supreme Court and the various High Courts.
- Presently the Collegium consists of the Chief Justice of India and four senior most Judges of the Supreme Court.
- The recommendation of Collegium is binding on the President.
- The person to be recommended has to get the approval of at least 4 out of the 5 members of Collegium.
- If even 2 of the judges are against the opinion, the CJI will not recommend them to the President.

For Mains

Evolution of Collegium:

- Article 124 of constitution says that “Every Judge of the Supreme Court shall be appointed by the President by warrant under his hand and seal after consultation with such of the Judges of the Supreme Court and of the High Courts in the States as the President may deem necessary for the purpose.”

EVOLVING SYSTEM	
Pre-1993 Law minister selected judges in 'consultation' with judiciary	been associated with that particular HC in the past. SC appointments cleared by 5-member collegium including CJI and 4 other seniormost judges
Post-1993 Judiciary assumed 'primacy' by creating collegiums in Supreme Court and high courts. HC judge is appointed after a collegium of judges of that court suggests his/her name, which then has to be cleared by a three-member SC collegium. The 3 judges include the CJI and at least one SC judge who has	2014 Proposed judicial appointments commission seeks to make selection process more transparent. To have 6 members, including law minister, CJI, 2 SC judges and 2 'eminent persons'. At least 5 members will have to agree on each judge's appointment

First Judges Case, 1982:

- In this judgement the Supreme Court held that the “primacy” of the CJI’s (Chief Justice of India) recommendation on judicial appointments and transfers can be refused for “cogent reasons.”

Second Judges Case (1993):

- Supreme Court held that under article 124 “consultation” really meant “concurrence”.
- Supreme court also stipulated that CJI’s opinion alone is not enough and a collegium consisting of CJI and two senior most judges of the Supreme Court must give the recommendation.

Third Judges Case (1998):

- Supreme Court expanded the collegium to CJI along with four senior most Judges of Supreme Court.

National Judicial Appointments Commission

- National Judicial Appointments Commission was created by the Ninety-Ninth Constitutional Amendment Act of 2014.

Composition of NJAC

- The Chief Justice of India
- 2 senior-most judges of the Supreme Court
- The Law Minister of India
- 2 eminent members that are chosen by the Selection Committee

Fourth Judges Case (2015):

- Also known as National Judicial Appointments Commission Act (NJAC) case.
- Supreme Court declared NJAC as unconstitutional and independence of Judiciary as a basic Structure of the Constitution.

SCO anti-terror exercise

For Prelims

About Shanghai Cooperation Organisation:

- SCO is a permanent intergovernmental international organization.
- The SCO Charter was signed in 2002 and entered into force in 2003.
- Kazakhstan, China, Kyrgyzstan, Russia and Tajikistan were members of the Shanghai Five which was the predecessor of SCO.



About RATS:

- Regional Anti-Terrorist Structure (RATS) is a permanent body of the SCO and is intended to facilitate coordination and interaction between the SCO member states in the fight against terrorism, extremism and separatism.
- The SCO Regional Anti-Terrorist Structure was established by the member states of the Shanghai Convention on 15 June, 2001, in Bishkek, the Kyrgyz Republic.
- The Executive Committee of the Regional Anti-Terrorist Structure (RATS) of the Shanghai Cooperation Organisation (SCO) is the permanent body of the SCO RATS based in Tashkent, the capital of Uzbekistan.

About Manesar Anti-terror 2022:

- Manesar Anti-terror 2022 is a multilateral anti-terror exercise under the framework of Shanghai Cooperation Organisation (SCO) Regional Anti-Terrorist Structure (RATS).
- The exercise is aimed at exchanging expertise, best practices and build synergy between the Counter Terrorism Forces of the SCO RATS Member Countries to enhance

capabilities for conducting Anti-Terrorist operations and countering other security threats collectively.

For Mains:

The main tasks and duties of RATS are as follows:

1. Maintaining working relations with competent institutions of the member states and international organisations tackling issues of fighting terrorism, separatism and extremism;
2. Assistance in interaction among the member states in preparation and staging of counter-terrorism exercises at the request of concerned member states, preparation and conduct of search operations and other activities in the field of fighting terrorism, separatism and extremism,
3. Joint drafting of international legal documents concerning the fight against terrorism, separatism and extremism,
4. Gathering and analysis of information coming to the RATS from the member states, formation and filling of RATS data bank,
5. Joint formation of a system of effective response to global challenges and threats,
6. Preparation and holding of scientific conferences and workshops, assistance in sharing experience in the field of fighting terrorism, separatism and extremism.

Decentralised Governance

For Prelims:

About 73rd Constitutional Amendment Act:

- The 73rd Constitution Amendment Act was passed in 1992 and it took effect on April 24, 1993.
- The Act empowered state governments to take the necessary steps that would lead to the formalisation of the gram panchayats and help them operate as units of self-governance.

The chief features of the act are mentioned below:

- This Act made the Panchayati Raj institutions in the country constitutional bodies.

- Under Article 243-B, it has become mandatory for each state to establish panchayats in their territories.
- Article 243-G makes it compulsory for the state governments to devolve powers, responsibilities and authority to the panchayats.
- The gram panchayats are to have a fixed tenure of 5 years.
- State election commissions have been created with the mechanism to conduct independent elections to the village panchayats.
- Article 243-D gives provisions for the ample representation of women and SC/STs.
- The State Finance Commission is created to evaluate the financial position of the panchayats every five years.

About 74th Constitution Amendment Act

- The 74th Amendment Act established a mandate for decentralizing powers and authorities to Urban Local Bodies (ULB) at various levels.
- However, responsibility for giving it a practical shape rests with the States.

The act classifies the municipalities into the of the following three-types:

- Nagar panchayat,
- municipal council,
- municipal corporation

The major provisions of the Act:

- Article 243S of the Constitution make the provisions for constitution and composition of Wards Committees, etc. consisting of one or more wards, within the territorial area of a Municipality having a population of three lakhs or more.
- Article 243T makes the provisions for the reservation of seats. Seats are reserved for the Scheduled Castes and the Scheduled Tribes in every Municipality and the number of seats so reserved shall bear, as nearly as may be, the same proportion to the total number of seats to be filled by direct election in that Municipality as the population of the Scheduled Castes in the Municipal area or of the Scheduled Tribes in the Municipal area bears to the total population of that area and such seats may be allotted by rotation to different constituencies in a Municipality.
- Not less than one-third of the total number of seats reserved Scheduled Caste are reserved for women belonging to the Scheduled Castes or, as the case may be, the Scheduled Tribes.
- Not less than one-third (including the number of seats reserved for women belonging to the Scheduled Castes and the Scheduled Tribes) of the total number of seats to be filled by direct election in every Municipality are reserved for women and such seats may be allotted by rotation to different constituencies in a Municipality.
- The superintendence, direction and control of the preparation of electoral rolls and the conduct of all elections to the municipalities shall be vested in the state election commission.

Next Chief Justice of India

For Prelims:

Appointment of CJI:

- As per Article 124(2) of the Constitution the Chief Justice of India (CJI) is appointed by the President.
- Supreme Court in the Second Judges Case (1993) declared that the senior most Judge of Supreme Court must be appointed as the CJI.

Functions of the Chief Justice:

- The Chief Justice is in charge of allocating cases and appointing constitutional benches that deal with key legal issues as Master of the Roster of the Supreme Court.
- CJI delegates all duties to the other justices in line with Article 145 of the Constitution and the Supreme Court Rules of Procedure of 1966.

The CJI is responsible for the following administrative tasks:

- Maintenance of the roster; appointment of court officials;
- Other general and incidental topics concerning the Supreme Court's supervision and operation.

Qualifications to become a Supreme Court Judge:

- He/she must be an Indian citizen.
- He/she must have served as a judge of a High Court (or High Courts in succession) for at least five years, or he/she must have served as an advocate of a High Court (or High Courts in succession) for at least ten years, or he/she must be a distinguished jurist in the president's judgment.

Supreme Court Judges have to retire by the age of 65 years.

RTI pleas pile up

For Prelims

About RTI Act:

- The right to information is a fundamental right under Article 19 (1) of the Indian Constitution as per the Supreme Court in Mr. Kulwal v/s Jaipur Municipal Corporation case.
- The Right to Information Act, 2005 (RTI Act 2005) was enacted by the Indian Parliament to give legal framework to this fundamental right.
- It replaced the former Freedom of Information Act, 2002.

The Objectives of the Right to Information (RTI) Act:

- Allow the citizens of the country to question the working government.
- Promote transparency and answerability of the working government.
- Check corruption prevailing in the government to serve the citizens better.
- Make citizens well-informed about the functioning of the government system.

International Conventions on Right to Information:

- Universal Declaration of Human Rights in 1948 provided everyone the right to seek, receive, information and ideas through any media and regardless of frontiers.
- This formed the basis of Right to Information becoming part of the Fundamental Rights.
- The International Covenant on Civil and Political rights 1966 states that everyone shall have the right to freedom of expression, the freedom to seek and impart information and ideas of all kinds.

For Mains

Rising RTI cases:

- The number of appeals and complaints pending in 2019, from data obtained from 26 information commissions was 2,18,347.
- In 2020, the number climbed up to 2,33,384 with data obtained from 23 information commissions, in 2021 the number was 2,86,325 with data from 26 commissions and in 2022, it was 3,14,323.
- The highest number of pending cases was in Maharashtra at 99,722, followed by Uttar Pradesh at 44,482, Karnataka at 30,358, the Central Information Commission at 26,724 and Bihar at 21,346.

Other matters of concern:

- Two information commissions (Jharkhand and Tripura) out of 29 across the country have been completely defunct for 29 months and 15 months respectively.
- Manipur, Telangana, West Bengal and Andhra Pradesh are without chiefs at the moment.
- Only 5% of all the positions in commissions are being occupied by women.
- Also, multiple information commissions, including the Central Information Commission, are working at reduced capacity with less than the stipulated number of members being in office.
- The commissions did not impose penalties in 95% of the cases where penalties were potentially imposable.
- This data has been collected by Satark Nagrik Sangathan, which is a citizens' group working to promote transparency and accountability in government functioning and to encourage active participation of citizens in governance in India.

IMF cuts India's growth forecast

For Prelims:



About IMF:

- The International Monetary Fund (IMF) is an intergovernmental organization which has 190 member countries.

- The idea of the creation of IMF was conceptualised in 1944 at the Bretton Woods Conference.
- IMF came into operation on 27th December 1945.

Mission of IMF:

- furthering international monetary cooperation,
- encouraging the expansion of trade and economic growth, and
- discouraging policies that would harm prosperity.

IMF helps countries going through a foreign currency shortage by giving them long term loans with low interest rates.

SDR:

- Special Drawing Rights (SDR) is an international reserve asset created by the IMF.
- SDR basket contains US dollar, euro, Japanese yen, and British pound sterling and Chinese Renminbi as standard currencies.
- The two criteria to be included in SDR basket are the export criterion and the freely usable criterion.
- A currency meets the export criterion if its issuer is an IMF member or a monetary union that includes IMF members and is also one of the top five world exporters.
- For a currency to be determined “freely usable” by the IMF, it has to be widely used to make payments for international transactions and widely traded in the principal exchange markets.

For Mains

Why IMF cut India's growth forecast:

IMF has forecasted lower growth rates across the globe since:

- the impact of the Russia-Ukraine war,
- tightening monetary conditions globally,
- the highest inflation in decades, and
- lingering effects of the pandemic.

Projections of IMF

- India is projected to grow at 6.8% in the current fiscal year, following 8.7% growth in fiscal year that ended March 31 as per figures released in the IMF's October 2022 World Economic Outlook.
- The IMF has also projected 6.9% consumer price inflation this year and 5.1% next year.
- For the world as a whole, growth will slow down from 6.0% in 2021 to 3.2% in 2022 and 2.7% in 2023.

Conference on Interaction and Confidence Building Measures in Asia (CICA)

For Prelims

About CICA:

- The Conference on Interaction and Confidence-Building Measures in Asia is an inter-governmental forum for enhancing cooperation towards promoting peace, security and stability in Asia.
- To be a member of CICA, a state must have at least a part of its territory in Asia.
- The Secretariat of CICA is located in Astana, Kazakhstan.

Member states:

- Afghanistan, Azerbaijan, Bahrain, Bangladesh, Cambodia, China, Egypt, India, Iran, Iraq, Israel, Jordan, Kazakhstan, Kyrgyzstan, Kuwait, Mongolia, Pakistan, Palestine, Qatar, Russia, South Korea, Sri Lanka, Tajikistan, Thailand, Turkey, United Arab Emirates, Uzbekistan, Vietnam. (28 Countries)

Observer states

- Belarus, Indonesia, Japan, Laos, Malaysia, Philippines, Turkmenistan, Ukraine, United States. (9 Countries)

Observer organizations:

- International Organization for Migration, League of Arab States, Organization for Security and Co-operation in Europe, Parliamentary Assembly of Turkic Speaking Countries, United Nations. (5 Organisations)

The origin of CICA

- The idea of convening the CICA was first proposed by Kazakhstan President Nursultan Nazarbayev on 5 October 1992, at the 47th Session of the United Nations General Assembly.
- The first meeting of the CICA Ministers of Foreign Affairs was held on 14 September 1999 with participation of 15 Member States.
- The 'Declaration on Principles Guiding Relations between CICA Member States' was adopted at this meeting.
- The first CICA summit was held on 4 June 2002 with participation of 16 Member States and Almaty Act, the charter of the CICA, was adopted in this summit.

Interpol General Assembly

For Prelims

About Interpol:

- International Criminal Police Organization is an inter-governmental organization having 195 member countries.
- It was created in the year 1923 as the International Criminal Police Commission and was renamed to Interpol in 1956.
- Its headquarters is located in Lyon, France.
- India became a member of the organisation in 1949 and is one of its oldest members.
- All contact of a country's law enforcement agency with Interpol is through the highest investigating body of the land. The CBI assumes this role in India.



About Interpol General Assembly:

- The General Assembly is the governing body of Interpol, and it brings all countries together once a year to take decisions.
- Each member country may be represented by one or several delegates who are typically chiefs of police and senior ministry officials.
- It determines the principles and measures for the Organization to reach its objectives and reviews and approves the programme of activities and financial policy for the next year.
- The head of Interpol is the President who is elected by the General Assembly for a period of four years.
- The day-to-day activity of Interpol is overseen by a full-time Secretary General elected by the General Assembly, who holds office for five years.
- The General Assembly takes decisions in the form of Resolutions and each member country represented has one vote.
- The General Assembly of the International Criminal Police Organisation (Interpol) is meeting in Delhi for four days from October 18.
- This is the second time since 1997 the 195 member-strong body is holding such a large conference in India.

Notices of Interpol:



- INTERPOL Notices are international requests for cooperation or alerts allowing police in member countries to share critical crime-related information.
- Notices are issued by the General Secretariat at the request of a member country's INTERPOL National Central Bureau and are made available for all the member countries.
- They can also be issued at the request of the United Nations in relation to the implementation of sanctions imposed by the Security Council.
- Most Notices are for police use only and are not available to the public.
- However, an extract of the Notice can be published on this site if the requesting country wishes to alert the public or seek their help.
- All United Nations Special Notices are public.

ISRO's Next-Gen Launch Vehicle

For Prelims

About Next-Gen Launch Vehicle:

- The Indian Space Research Organisation (ISRO) is developing a Next-Gen Launch Vehicle (NGLV), which is expected to replace the current operational systems like the Polar Satellite Launch Vehicle (PSLV).
- NGLV is aimed to be a cost-efficient, three-stage, reusable heavy-lift vehicle with a payload capability of 10 tonnes to Geostationary Transfer Orbit.
- NGLV will feature semi-cryogenic propulsion for the booster stages which will be cheaper and efficient.
- The Low Earth Orbit (LEO) payload capability will be twice that of the Geostationary Transfer Orbit i.e., 20 tonnes.
- However, payload capability will be lower when the rocket is reusable.

Current Launch vehicles of ISRO:

About PSLV:

- Polar Satellite Launch Vehicle (PSLV) is the third generation launch vehicle of India.
- It is the first Indian launch vehicle to be equipped with liquid stages.
- It is a four stage launch vehicle.
- A large solid rocket motor forming the first stage,
- An earth storable liquid stage as the second stage,
- A high-performance solid rocket motor as third stage, and
- A liquid stage with engines as fourth stage.
- The vehicle successfully launched two spacecraft – Chandrayaan-1 in 2008 and Mars Orbiter Spacecraft in 2013.
- Since 1994 till 2017, PSLV has launched 48 Indian satellites and 209 satellites for customers from abroad.

About GSLV:

- The Geosynchronous Satellite Launch Vehicle (GSLV) project began in 1990 with the aim of acquiring an Indian launch capability for geosynchronous satellites.
- GSLV is a fourth generation launch vehicle and is a three stage vehicle with four liquid strap-ons and the indigenously developed cryogenic Upper Stage (CUS) powers its third stage.

GSLV Mk III

- GSLV Mk III is a three-stage heavy lift launch vehicle developed by ISRO.
- The vehicle has two solid strap-ons, a core liquid booster and a cryogenic upper stage.

- GSLV Mk III is designed to carry 4 ton class of satellites into Geosynchronous Transfer Orbit (GTO) or about 10 tons to Low Earth Orbit (LEO), which is about twice the capability of the GSLV Mk II.
- The first developmental flight of GSLV Mk III, the GSLV-Mk III-D1 successfully placed GSAT-19 satellite to a Geosynchronous Transfer Orbit (GTO) on June 05, 2017 from SDSC SHAR, Sriharikota.
- GSLV MkIII-D2, the second developmental flight of GSLV MkIII successfully launched GSAT-29, a high throughput communication satellite on November 14, 2018 from Satish Dhawan Space Centre SHAR, Sriharikota.
- GSLV MkIII-M1, successfully injected Chandrayaan-2, India's second Lunar Mission, in to Earth Parking Orbit on July 22, 2019 from Satish Dhawan Space Centre SHAR, Sriharikota.

Global Hunger Index

For Prelims:

About Global Hunger Index:

- Global Hunger Index is published by Concern Worldwide and Welthungerhilfe (NGOs) jointly.
- It is published every October starting from 2006.
- It's aimed to comprehensively measure and track hunger at the global, regional, and country levels.

It is calculated on the basis of four indicators:

- Undernourishment: Share of the population with insufficient caloric intake.
- Child Wasting: Share of children under age five who have low weight for their height, reflecting acute undernutrition.
- Child Stunting: Share of children under age five who have low height for their age, reflecting chronic undernutrition.
- Child Mortality: The mortality rate of children under the age of five.

For Mains:

About Global Hunger Index 2022:

- India has been categorised as 'serious' category at rank 107 out of 121 countries.
- Afghanistan is the only South Asian country that lags behind India in the listing.

- Sri Lanka (64), Nepal (81), Bangladesh (84) and Pakistan (99) ranked higher than India.
- China is among the countries collectively ranked between 1 and 17 having a score of less than five.
- India's child wasting rate (low weight for height), at 19.3%, is worse than the levels recorded in 2014 (15.1%) and even 2000 (17.15), and is the highest for any country in the world and drives up the region's average owing to India's large population.
- Prevalence of undernourishment, which is a measure of the proportion of the population facing chronic deficiency of dietary energy intake, has also risen in the country from 14.6% in 2018-2020 to 16.3% in 2019-2021.
- This means that 224.3 million people in India considered undernourished.
- But India has shown improvement in child stunting, which has declined from 38.7% to 35.5% between 2014 and 2022, as well as child mortality which has also dropped from 4.6% to 3.3% in the same comparative period.
- On the whole, India has shown a slight worsening with its GHI score increasing from 28.2 in 2014 to 29.1 in 2022.

INS Arihant

For Prelims:

About INS Arihant:



- INS Arihant is the lead ship of India's Arihant class of nuclear-powered ballistic missile submarines.
- The vessel was built under the Advanced Technology Vessel (ATV) project at the Ship Building Centre in the port city of Visakhapatnam.
- INS Arihant is designated S2 Strategic Strike Nuclear Submarine.
- INS Arihant is the first of the planned five in the class of submarines designed and constructed as a part of the Indian Navy's Advanced Technology Vessel (ATV) project.
- The ship is powered by an 83 MW pressurised light-water reactor with enriched uranium fuel.
The hull for the vessel was built by L&T's Hazira shipbuilding facility.
- Tata Power Strategic Engineering Division (SED) built the control systems for the submarine.
- Arihant has four vertical launch tubes, which can carry 12 (three per launch tube) smaller K-15 missiles or four larger K-4 missiles.
- Arihant holds the distinction of being the first ballistic missile submarine to have been built by a country other than one of the five permanent members of the United Nations Security Council.

About Submarine Launched Ballistic Missile (SLBM):

- A submarine-launched ballistic missile (SLBM) is a ballistic missile capable of being launched from submarines.
- India uses its K family of missiles, (K for 'Kalam') as SLBMs to maintain second strike capability.
- The ability to launch nuclear missiles from Submarines is an important aspect of ensuring second strike capability and the most technologically advanced aspect of the nuclear triad.

About Nuclear Triad:

- A nuclear triad is a three-pronged military force structure that consists of land-launched nuclear missiles, nuclear-missile-armed submarines, and strategic aircraft with nuclear bombs and missiles.
- Specifically, these components are land-based intercontinental ballistic missiles (ICBMs), submarine-launched ballistic missiles (SLBMs), and strategic bombers.
- Presently only four countries are confirmed to be maintaining nuclear triad, which are China, India, Russia and United States.

Eco-sensitive zone

Why in News?

- The Supreme Court on 14-10-22 indicated it may consider taking up Kerala's review of the Supreme Court's judgment to have a one-km eco-sensitive zone ringing protected forests, national parks and wildlife sanctuaries across the country along with a plea for clarification sought by the Centre.

For Prelims

About Eco-sensitive zone:

- Eco-Sensitive Zones (ESZs) or Ecologically Fragile Areas (EFAs) are areas notified by the MoEFCC around Protected Areas, National Parks and Wildlife Sanctuaries.
- The basic aim of creating an Eco-sensitive zone is to regulate certain activities around National Parks and Wildlife Sanctuaries so as to minimise the negative impacts of such activities on the fragile ecosystem encompassing the protected areas.
- They also act as a transition zone from areas of high protection to areas involving lesser protection.
- The Environment (Protection) Act, 1986 does not mention the word "Eco-Sensitive Zones".
- An ESZ could go up to 10 kilometres around a protected area as provided in the Wildlife Conservation Strategy, 2002.

What activities are prohibited in ESZs?

- Commercial mining,
- sawmills,
- industries causing pollution (air, water, soil, noise etc),
- establishment of major hydroelectric projects (HEP),
- commercial use of wood.
- Tourism activities like hot-air balloons over the National Park,
- discharge of effluents or any solid waste or production of hazardous substances.

Activities which are regulated in ESZ:

- Felling of trees,
- establishment of hotels and resorts,
- commercial use of natural water,
- erection of electrical cables,
- drastic change of agriculture system, e.g., adoption of heavy technology, pesticides etc,
- widening of roads.

Activities which are permitted in ESZ:

- Ongoing agricultural or horticultural practices,
- rainwater harvesting,
- organic farming,
- use of renewable energy sources,

- adoption of green technology for all activities.

Neelakurinji Flowers

Context:

- Visitors are arriving in large numbers to witness the blooming of neelakurinji flowers in the state of Kerala.

Where is it found?

- Kallippara hills at Santhanpara in Idukki, Kerala.



About:

- The team comprising E. Kunjkrishnan and Jomy Augustine, a neelakurinji expert, recently identified the plant kinds.
- They claim that the flowers that are on bloom now belong to the *Strobilanthes kunthiana* variety.
- *Strobilanthes anamallai*, *Strobilanthes heyneanus*, *Strobilanthes pulneyensis*, and *Strobilanthes neoasper* are among the varieties of neelakurinji flowers that have been identified from the hill ranges in addition to *Strobilanthes kunthiana*.
- These neelakurinji species, which cover over 200 acres of the Kallippara hills, are entirely indigenous to the Western Ghats.
- In fact, after the protected regions of Munnar, the neelakurinji population here can be regarded as one of the largest of the species.

- On the slopes, a wide range of therapeutic plants have also been seen.
- The gregarious blossoming (large flowering at once) type is shown by the bloom that was observed at Kallippara.

Need for its Conservation:

- In the Western Ghats especially from Mangaladevi ranges to Coorg in Karnataka experts have identified nearly 100 populations of the *Strobilanthes kunthiana* variety.
- It is also found that isolated flowerings are being reported from other areas as well in the close by regions.
- This has been reported in Eravikulam National Park, the biggest sanctuary of neelakurinji flowers and Bhadrakali Shola at Puthumala.

Submarine Launched Ballistic Missile (SLBM)

Context:

- The Ministry of Defence (MoD) announced on Friday (October 14) that the indigenous ballistic missile nuclear submarine INS Arihant had successfully launched a nuclear capable Submarine Launched Ballistic Missile (SLBM) in the Bay of Bengal with “very high accuracy”.

Strategic Significance:

- In the context of establishing a nuclear triad, especially in light of India’s “No First Use” policy, the capacity to launch nuclear bombs from submarine platforms has enormous strategic significance.
- The second-strike capacity is considerably increased by the sea-based undersea nuclear capable capabilities, which supports the nuclear deterrence.
- These submarines are capable of “Credible Nuclear Deterrence,” which means they can not only withstand a first strike by the enemy but also launch a strike in reprisal.
- In light of India’s relations with Pakistan and China, it is crucial to enhance these capabilities.
- India’s capacity building on the nuclear-powered submarines and of the nuclear capable missile which can be launched from them is vital for nuclear deterrent given that China has deployed several of its submarines, including some that are nuclear powered and nuclear capable.

A Posture of 'No First Use':

- After the Cabinet Committee on Security (CCS) reviewed the progress in operationalizing India's nuclear strategy, it was made public in January 2003, and the MoD statement following Friday's launch from Arihant emphasised the strategic postures of "credible minimum deterrence" and "no first use."
- Building and maintaining a credible minimum deterrent, adopting a "no first use" posture, which means that nuclear weapons will only be used in retaliation against a nuclear attack on Indian territory or on Indian forces anywhere, and planning a massive nuclear response to a first strike with the intention of "inflicting unacceptable damage" were the main points of the doctrine that was made public at the time.

Economic Crisis in UK

Context:

- The U.K. economy has veered dangerously toward free fall in recent weeks as Ms. Truss and Mr. Kwarteng fumbled their way through defining a clear economic strategy, while persisting with their stated goal of spurring economic growth in the post-Brexit scenario.

Background:

- The newly elected Prime Minister Liz Truss has been facing the challenge of handling the vulnerable position of the Britain's economy.
- Her Cabinet was facing an impending energy crisis as she took office, which was being exacerbated in part by the unpredictability brought on by the interruptions in the energy supply caused by Russia's conflict in Ukraine.
- While she seemed to act swiftly in early September to reassure British families who were having trouble paying their gas bills that there would be an energy price guarantee and ensuing cost savings, her larger plan to cut income tax for the top earners in the U.K. and to abandon a corporate tax hike was the one that was under fire.

Implications:

- The "fantasy island economics" of cutting revenue sources without appropriately covering the large fiscal hole that such a give-away would produce is what Mr. Sunak has referred to as the main criticism of the Truss Cabinet.
- The recent proposals have also been criticised as having the wrong priority in light of the more pressing issue of runaway inflationary trends brought on by fluctuations in the price of commodities globally, turmoil in the energy market, and supply-side constraints resulting from a post-Brexit economic structure.

- The first measure proposed by the Truss-Kwarteng team to jump-start the British economy was a proposal to eliminate the 45% top rate of income tax for those with incomes of £1,50,000 or more.
- A second policy in a similar vein was the proposal to scrap a planned increase in corporate tax from 19% to 25% starting next April. Together, the two measures amounted to £45 billion in unfunded tax cuts.

Challenges in the Collegium System

Context:

- A meeting of the Supreme Court Collegium, comprising the Chief Justice of India (CJI), and four senior-most judges, which was called for September 30 but did not take place, was subsequently “closed without there being any further deliberation”.

Role of the Collegium:

- The Collegium system, in which the senior-most judges in a group select candidates for the higher judiciary, has been in use for about 30 years.
- Its significance stems from the fact that transfers and appointments to the Supreme Court and high courts are subject to its judgement.
- Its operational procedures are outlined in a “Memorandum of Procedure.”

How it came into existence?

- According to the Constitution, the President appoints Supreme Court judges after consulting with the Chief Justice of India.
- The court ruled in the “First Judges Case” that the consultation with the CJI must be “full and effective.”
- The collegium system was established in 1993 following the Second Judges case. On judicial nominations, it was decided that the Chief Justice of India would need to consult a collegium of his two senior-most justices in the Supreme Court.
- The collegium was expanded to include the CJI and four of his senior-most judges in the “Third Judges Case” case in 1998, which was a Presidential reference.

Lack of Transparency:

- The Collegium’s operation has come under fire for being unclear. The Supreme Court’s website hosts its resolutions and recommendations, providing pertinent details regarding its judgments.
- However, it is uncertain how the discussions are going or if there are any internal disagreements over a particular candidate’s appropriateness.
- It primarily operates on the basis of a system where resolutions are adopted and sent to the Union Law Ministry for further action.

- The Collegium may reject or resubmit a proposal for the appointment of a judge if it is sent back for review.
- The Collegium's decision is enforceable against the government if it is reaffirmed after reconsideration.

National Congress of the Chinese Communist Party (NCCCP)

For Prelims:

About NCCCP:

- National Congress of the Chinese Communist Party (NCCCP) is a party congress that is held every five years and is the highest decision-making body within the Chinese Communist Party (CCP).
- The Congress is the public venue for top-level leadership changes in the CCP and the formal event for changing the Party's Constitution.
- The Congress formally approves the membership of the Central Committee, a body composed of the top decision-makers in the party, state, and society.
- Since 1987 the National Congress has been held in the months of October or November.

About PLA:

- The People's Liberation Army (PLA) is the principal military force of the People's Republic of China and the armed wing of the Chinese Communist Party (CCP).
- The PLA consists of five service branches: the Ground Force, Navy, Air Force, Rocket Force, and Strategic Support Force.
- It is under the leadership of the Central Military Commission (CMC) with its chairman as commander-in-chief.
- The PLA is the world's largest military force (not including paramilitary or reserve forces) and constitutes the second largest defense budget in the world.

India's coal mines

For Prelims:

About Coal in India:

- Jharkhand is the largest coal-producing state in India.
- The top coal-producing states are Jharkhand, Orissa, Chhattisgarh, West Bengal, Madhya Pradesh, Telangana and Maharashtra.
- Coal accounts for approximately 55% of the country's energy needs.
- India is the second largest producer and consumer of coal after China.



Types of Coal:

Anthracite:

- Anthracite is the best quality of coal which carries 80 to 95 per cent carbon content.
- It ignites slowly with a blue flame and has the highest calorific value.
- It is found in small quantity in Jammu and Kashmir.

Bituminous:

- Bituminous carries 60 to 80 per cent of carbon content and a low level of moisture content.
- It is widely used and has high calorific value.
- It is found in Jharkhand, West Bengal, Odisha, Chhattisgarh and Madhya Pradesh.

Lignite:

- Lignite is often brown in colour. It carries 40 to 55 per cent carbon content.
- It is an intermediate stage which happens during the alteration of woody matter into coal.
- It has high moisture content, so it gives smoke when burnt.
- It is found in Rajasthan, Lakhimpur (Assam), and Tamil Nadu.

Peat:

- Peat has less than 40 per cent carbon content.
- It is in the first stage of transformation from wood to coal.
- It has low calorific value and burns like wood.

For mains:

Underutilisation of Coal fields:

- Global Energy Monitor (GEM), which is a firm that tracks utilisation of the fuel-source internationally has discovered that, on average, India's coal mines use only two-thirds of the capacity, with some large ones using only 1%.

What this signifies?

- This suggests that 99 of India's coal mine projects, expected to yield 427 million tonnes per annum (MTPA), under development are unnecessary, and opening new coal mines would not contribute to easing short-term supply-crunches.

The cause of underutilisation:

The major causes for the underutilisation of capacity are

- competition from renewables,
- infrastructure impasses, and
- land-use concerns for hindering output.

One Nation One Fertiliser

For Prelims:

About One Nation One Fertiliser scheme.

- It has been implemented under the fertiliser subsidy scheme named “Pradhanmantri Bhartiya Janurvarak Pariyojna” (PMBJP) of the Ministry of Chemicals and Fertilisers.
- Under ONOF companies are allowed to display their name, brand, logo and other relevant product information only on one-third space of their bags.
- The remaining two-thirds space was used to display the “Bharat” brand and Pradhanmantri Bharatiya Jan Urvarak Pariyojana logo.
- All subsidised soil nutrients – urea, di-ammonium phosphate (DAP), Muriate of Potash (MoP), and NPK – will be marketed under the single brand Bharat across the nation.
- This scheme applies to both public & private sector companies.

For Mains:

The benefits of ONOF:

- Since fertilizers of a particular category must meet the nutrient-content specifications of the Fertilizer Control Order (FCO), there is no product differentiation among different brands for each type of fertilizer.
- ‘One Nation, One Fertiliser’ will help farmers overcome their confusion over brand-specific choices.
- It has been found that brand preferences have resulted in fertilizer-supply delays to farmers and an extra burden on the exchequer due to increased freight subsidies needing to be paid for the long-distance crisscross movement of fertilizers.
- The One Nation One Fertiliser scheme will prevent the criss-cross movement of fertilisers and reduce high freight subsidies.

The concerns:

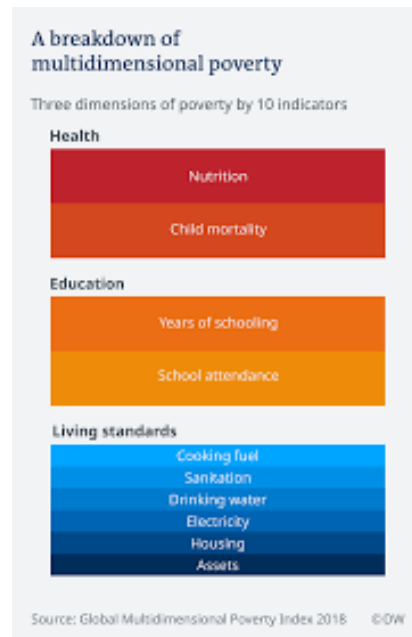
- It will disincentivise fertiliser companies from undertaking marketing and brand promotion activities.
- They will now be reduced to contract manufacturers and importers for the government.
- Currently, in case of any bag or batch of fertilisers not meeting the required standards, the blame is put on the company. But now, that may be passed on fully to the government.

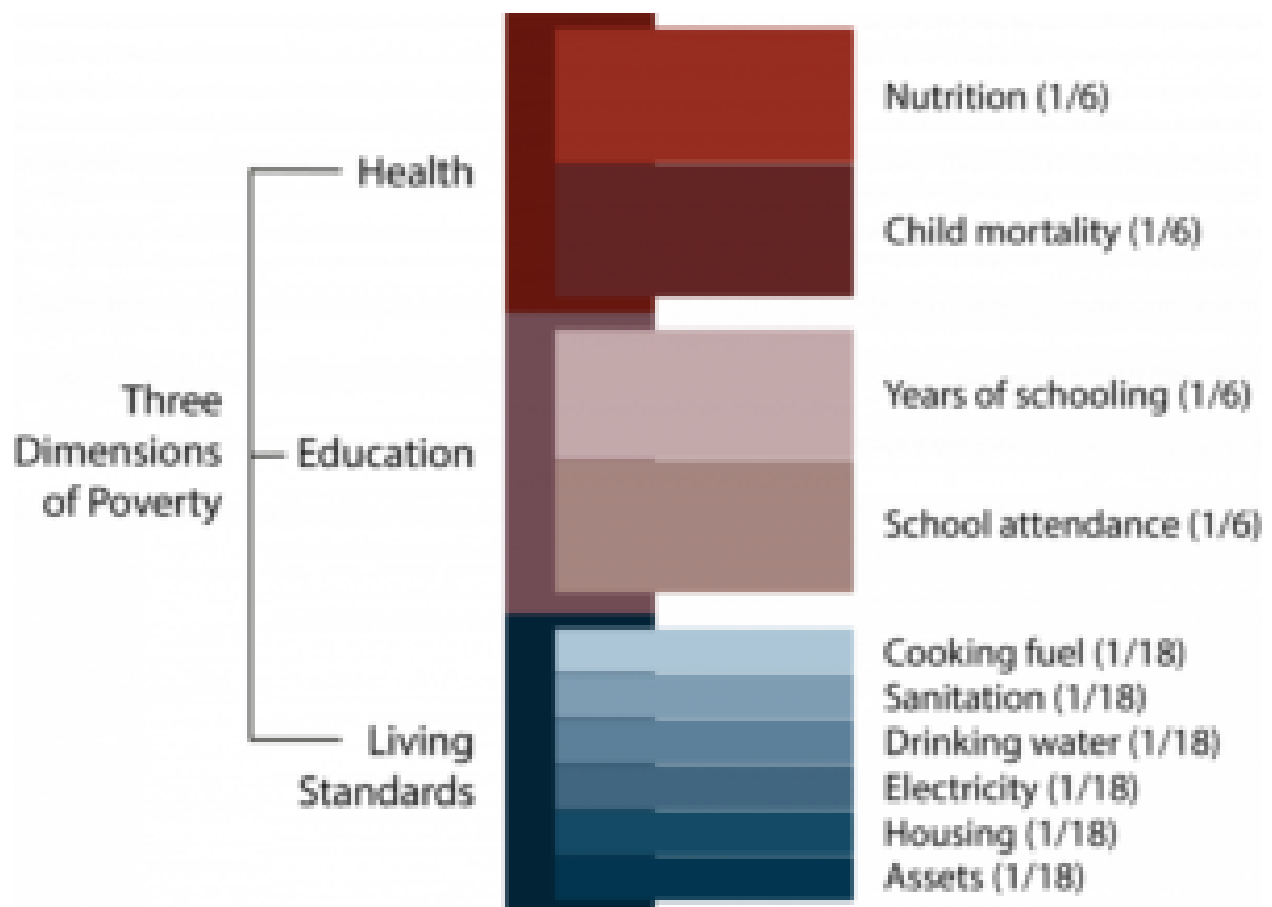
Multi-Dimensional Poverty Index

For Prelims

About Multidimensional Poverty Index (MPI):

- Multidimensional Poverty Index (MPI) is an annual report produced by the United Nations Development Programme (UNDP) and the Oxford Poverty and Human Development Initiative (OPHI).
- It replaced the Human Poverty Index.
- The MPI is published along with the HDI (Human Development Index) in the Human Development Report.





Global MPI – Dimensions, Indicators, Deprivation Cutoffs, and Weights

DIMENSIONS OF POVERTY	INDICATOR	DEPRIVED IF LIVING IN A HOUSEHOLD WHERE...	WEIGHT
Health (1/3)	Nutrition	Any person under 70 years of age for whom there is nutritional information is undernourished .	1/6
	Child mortality	A child under 18 has died in the household in the five-year period preceding the survey.	1/6

Education (1/3)	Years of schooling	No eligible household member has completed six years of schooling .	1/6
	School attendance	Any school-aged child is not attending school up to the age at which he/she would complete class 8 .	1/6
Living Standards (1/3)	Cooking fuel	A household cooks using solid fuel , such as dung, agricultural crop, shrubs, wood, charcoal, or coal.	1/18
	Sanitation	The household has unimproved or no sanitation facility or it is improved but shared with other households.	1/18
	Drinking water	The household's source of drinking water is not safe or safe drinking water is a 30-minute or longer walk from home, roundtrip.	1/18
	Electricity	The household has no electricity .	1/18
	Housing	The household has inadequate housing materials in any of the three components: floor , roof , or walls .	1/18
	Assets	The household does not own more than one of these assets : radio, TV, telephone, computer, animal cart, bicycle, motorbike, or refrigerator, and does not own a car or truck.	1/18

For Mains

What did the MPI report say about India?

- About 41.5 crore people exited poverty in India during the 15-year period between 2005-06 and 2019-21, out of which two-third exited in the first 10 years, and one-third in the next five years.

- Incidence of poverty fell from 55.1% in 2005-06 to 16.4% in 2019-21 in the country and that deprivations in all 10 MPI indicators saw significant reductions as a result of which the MPI value and incidence of poverty more than halved.
- Bihar, the poorest State in 2015-2016, saw the fastest reduction in MPI value in absolute terms.
- The incidence of poverty there fell from 77.4% in 2005-2006 to 34.7% in 2019-2021.
- India has the largest number of poor people worldwide at 22.8 crore, followed by Nigeria at 9.6 crore.
- There were also 9.7 crore poor children in India in 2019-2021 — more than the total number of poor people, children and adults combined, in any other country covered by the global MPI.
- South Asia for the first time is not the region with the highest number of poor people, at 38.5 crore, compared with 57.9 crore in Sub-Saharan Africa.

FATF grey list

For Prelims

About Financial Action Task Force:

- The Financial Action Task Force (FATF) is the global money laundering and terrorist financing watchdog.
- It is an inter-governmental body which sets international standards that aim to prevent these illegal activities and the harm they cause to society.
- The FATF was established in July 1989 at the G-7 Summit in Paris, with an aim to examine and develop measures to combat money laundering.
- After the 9/11 attacks, the FATF in October 2001 expanded its mandate to incorporate efforts to combat terrorist financing.
- In April 2012, it added efforts to counter the financing of proliferation of weapons of mass destruction.
- The FATF currently comprises 37 member jurisdictions and 2 regional organisations

The members of FATF:

- Argentina, Australia, Austria, Belgium, Brazil, Canada, China, Denmark, European Commission, Finland, France, Germany, Greece, Gulf Co-operation Council, Hong Kong (China), Iceland, India, Ireland, Israel, Italy, Japan, Republic of Korea, Luxembourg, Malaysia, Mexico, Kingdom of Netherlands, New Zealand, Norway, Portugal, Russian Federation, Saudi Arabia, Singapore, South Africa, Spain, Sweden, Switzerland, Türkiye, United Kingdom and United States.
- Indonesia is given observer status.

Categorisation by FATF:

Grey List:

- Countries which are considered safe haven for supporting terror funding and money laundering are put in the FATF grey list.
- Inclusion in Grey list serves as a warning to the country that it may enter the blacklist.
- They are officially referred to as “jurisdictions with strategic deficiencies.”

Black List:

- Countries known as Non-Cooperative Countries or Territories (NCCTs) are put in the blacklist.
- Currently, Islamic Republic of Iran and Democratic People's Republic of Korea (DPRK) are under High-risk Jurisdiction or blacklist.

AK-203 assault rifles

About AK 203:

- The AK-203 is a Russian gas-operated, magazine-fed, select fire assault rifle designed to chamber the 7.62×39mm cartridge.
- The AK-203 was developed in the 2010s by Kalashnikov Concern in Russia.
- AK-203 rifles are fitted with integral Picatinny rails for a convenient and easy mounting of sights and tactical accessories, enabling the effective use of weapons in various conditions.
- The Indian Army is procuring 670,000 AK-203 assault rifles to replace the INSAS, through a contract with Russia.
- The first 70,000 rifles were purchased from Russia and delivered in January 2022.
- The remaining 600,000 rifles will be manufactured in Amethi, India under a transfer of technology agreement, by joint venture company Indo-Russia Rifles Private Limited (IRRPL).

Indo-Russia Rifles Private Limited:

- To manufacture the rest of the rifles the Indo-Russia Rifles Private Limited was set up in 2019 which has set up Korwa Ordnance Factory in Amethi district.
- The Korwa Ordnance Factory is ready to start manufacturing Kalashnikov AK-203 assault rifles by the end of 2022.

- In future, the joint venture may increase production and modernise facilities to manufacture advanced rifles based on the Kalashnikov assault rifle platform.

About Rosoboronexport:

- Rosoboronexport is a state-owned company, which accounts for over 85 per cent of Russia's exports of arms and military equipment.
- The company has worked together with Indian authorities for the licensed production of multirole Su-30MKI fighter jets in India, and the modernisation and transfer of the Vikramaditya aircraft carrier to the Indian Navy.
- Rosoboronexport will be participating in the mega DefExpo 2022 due to begin in Gujarat on 18th October.

Six spider species discovered

For Prelims:

The new species discovered:



Siamspinops garoensis:

- It is the first spotting of the genus Siamspinops from India.
- It belongs to the family of flat spiders, Selenopidae.
- The species is endemic to Garo hills in Meghalaya.

Afraflacilla miajlaensis:

- It is part of family of jumping spiders Salticidae.
- It was discovered from the Thar desert of Rajasthan.
- It is characterised by white fine hairs on a black head and black horizontal lines on the abdomen.

Afraflacilla kurichadensis:

- It is part of family of jumping spiders Salticidae.
- It was discovered from the Kurichiyad forest ranges of the Wayanad Wildlife Sanctuary.
- This species is characterised by red patches around the eyes and white hairs on the abdomen.

Philoponella rostralis:

- This spider species lacks a venom gland and is characterised by a beak like structure on the male reproductive organ.
- It belongs to the family of feather- legged spiders (Uloboridae).
- This spider makes a special type of web under the leaves, and it can subdue the prey with the help of woolly silk produced from their cribellum (additional silk producing organ in front of the spinnerets).

Oxyopes peetham:

- This species is characterised by a yellowish body.
- It has been discovered from the Thumboormuzhi butterfly garden, near the Athirappilly waterfalls in Kerala.

Oxyopes thumboormuzhiensis:

- The members of this family are commonly known as lynx spiders because of their lynx-like feeding behaviour.
- It has been discovered from the Thumboormuzhi butterfly garden, near the Athirappilly waterfalls in Kerala.

FCRA

Context:

- The Ministry of Home Affairs has cancelled the Foreign Contribution (Regulation) Act (FCRA) license of Rajiv Gandhi Foundation (RGF) and Rajiv Gandhi Charitable Trust

(RGCT), organizations that are associated with the Nehru-Gandhi family, for alleged violations of the provisions of the Act.

What is FCRA- Foreign Contribution (Regulation) Act?

- The law seeks to regulate foreign donations to individuals and associations so that they function “in a manner consistent with the values of a sovereign democratic republic”.
- The law was enacted during the Emergency in 1976 amid apprehension that foreign powers were interfering in India’s affairs by pumping in funds through independent organisations.

What are the regulations required after amendment in 2020?

- It bars public servants from receiving foreign contributions.
- The foreign contribution must be received only in an account designated by the bank as FCRA account in such branches of the State Bank of India, New Delhi.
- No funds other than the foreign contribution should be received or deposited in this account.
- It allowed the government to restrict usage of unutilized foreign contribution.

Can Individuals receive money?

- Foreign funding in India is regulated under FCRA act. Individuals are permitted to accept foreign contributions without permission of MHA.
- However, the monetary limit for acceptance of such foreign contributions shall be less than Rs. 25,000.

Prohibitions under the act:

There are some provisions with respect to the foreign funds received, they must not be utilized by –

1. candidates for elections.
2. journalists or newspaper and media broadcast companies.
3. judges and government servants, members of legislature and political parties or their office-bearers, and organisations of a political nature.

India’s Trade Equation with China

Context:

- India's trade equation with China has been improving in recent years with outbound shipments rising faster than imports.

What is the reason?

- This growth in this short period of time is driven by import of some of the key raw materials and to meet demand from high-growth sectors such as telecom and power.

Composition of the trade:

- More than a third of India's imports from China are intermediate goods, and 19.3% are capital goods, with equipment for the power and telecom sectors being the main contributors.
- These imports helped India meet domestic demand in these quickly expanding sectors.
- Electronic components, computer hardware and peripherals, telecom equipment, telecom instruments, organic chemicals, industrial machinery for the dairy industry, residual chemicals and related goods, electronic instruments, bulk pharmaceuticals, and intermediates are the main imports from China.

What is the Value of the Bilateral Trade?

- With trade flows between the two nations increasing by 59% from roughly \$72 billion in 2014–15 (FY15) to \$115.4 billion in FY22, China is one of India's major trading partners.
- Since India-China commerce has increased, export growth has outpaced import growth by a significant margin.
- India's exports to China increased from \$11.9 billion in FY15 to \$21.25 billion last year, a 78.1% increase, while the country's imports increased by 55.8% to \$94.16 billion from \$60.4 billion in FY15.
- In comparison, China's imports climbed 192% between 2006–07 and 2013–14, reaching \$51 billion.



Way Forward:

- Over time, the production-linked incentive programmes for various industries will help lessen reliance on such imports.
- The post pandemic world which has posed difficult economic challenges is also an opportunity for India to exploit the opportunity in the manufacturing sector given its demographic potential and ties with the west.

Investments to Manufacturing Sector

Context:

- Recently, the finance minister Nirmala Sitharaman asked captains of industry what was holding them back from investing in manufacturing.
- She likened industry to Lord Hanuman from the Ramayana by stating that industry did not realise its own strength and that it should forge ahead with confidence.

Challenges:

- The government reduced the tax rate for domestic enterprises from 30% to 22% in September 2019 if they stopped utilising any other tax SOPs in an effort to boost private investment (standard operating procedure).
- Private sector investment in India has lagged behind for almost a decade. “Amber lights are blinking if we look at current economic growth drivers.
- The global recession will put the export narrative in jeopardy, and as the fiscal deficit shrinks, so will the government’s ability to boost domestic demand.
- Private consumption is only concentrated in certain tiers of the income pyramid because of the K-shaped recovery.

Current Status:

- Gross fixed capital formation (GFCF) at 2011–12 prices increased 9.6% to \$12.77 lakh crore in the GDP data for the quarter that ended in June from \$11.6 lakh crore in Q1 of FY20, which was the pre–pandemic period.
- This is in light of the overall GDP growth of 2.8% from Q1 of FY20 to Q1 of FY23, from 35.85 lakh crore to 36.85 lakh crore.
- Gross value added (GVA) in the manufacturing sector increased 6.5% to 6,05,104 in Q1 FY23 from 5,68,104 in Q1 FY20.
- However, comparing manufacturing growth from the quarter before that, April to June, to the previous quarter, January to March, reveals that the industry has shrunk by 10.5%.

- Even though private final consumer expenditure, a crucial component of our economy, increased 26% year over year for the June quarter, the amount spent privately between April and June 2022 was much lower at 22.08 lakh crore, or 2.4%, than it had been the previous quarter.
- Additionally, GFCF, a measure used as a stand-in for private investment, decreased by 6.8% quarter over quarter.

Turkey's New Disinformation Law

Context:

- Turkey's parliament adopted the much-critiqued 'disinformation law' that accords jail terms of up to three years to social media users and journalists for spreading 'disinformation'.

About the law:

- The "disinformation law" is a collection of roughly 40 articles that would change about 23 separate statutes collectively.
- Article 29 is the most divisive of the 40.
- In order to instill fear or terror among the citizenry, it is illegal to publicly broadcast false information concerning the nation's internal and foreign security, public order, and general well-being.
- The Turkish government has maintained that the bill will address situations in which persons of different political ideologies, religious beliefs, or ethnicities are slandered and defamed by anonymous online accounts.
- A jail term between one and three years has been introduced for any violation with the extension of an additional half of the initially stipulated term if the actions are done in anonymity. social media platforms could now be asked to hand over user data to Turkish courts to implement this law.

Apprehensions Surrounding the law:

- Critics, including the Venice Commission, which advises the Council of Europe on constitutional issues, have criticised the vague definition of some key terms, including "disinformation."
- The law gives prosecutors the authority to make that determination.
- Critics claim that Turkey's history of judicial persecution of journalists and other social scientists and the country's intense polarisation do not paint a positive picture.
- Now that news websites are recognised by the law as being a component of mainstream media, they are subject to the same rules as newspapers.
- This includes removing reports that have been reported to regulatory authorities and posting a denial on the same hyperlink.

- Press freedom in Turkey is already not particularly spectacular. In the Press Freedom Index, it comes in at position 149 out of 180. (2022).

India-Sri Lanka Fishermen Issue

Context:

- Seven fishermen from Thangachimadam village near Rameswaram were arrested by the Sri Lankan Navy at Neduntheevu on charges, including poaching.



Background:

- Fishermen from Sri Lanka and India have coexisted peacefully in each other's waters for many years.
- The situation was altered when, between 1974 and 1976, India and Sri Lanka signed four maritime boundary agreements outlining their respective interpretations of the international maritime border between them.
- These agreements were designed to make resource management and law enforcement in the Palk Strait easier.
- Without consulting the state government of Tamil Nadu, the Indian government transferred the Katchatheevu Island to Sri Lanka through the agreements.
- Since that time, the island has only been "accessible" to Indian fishermen for resting, drying nets, and the annual St. Anthony's festival—not for fishing.

What should be done?

- The Indian fishermen have been adopted to trawlers for fishing in the oceans which is not only harmful to the marine environment but also prohibited by the Sri Lankan authorities.
- India must forbid the use of fishing gear in Palk Bay that is forbidden in Sri Lanka.
- The Odisha coast, where the waters are very deep, is a place where trawlers can be used.

- India has the power to turn the Palk Bay from a contentious region into a shared treasure.
- Deep Sea Fishing Scheme is promoted as an alternative to bottom trawling by Tamil Nadu's fishermen off the Palk Bay, the scheme envisages the provision of 2,000 deep sea fishing boats in place of trawlers by 2019-20, which will be the third and final year of implementation of the scheme.

Lessons From the Cuban Missile Crisis

Context:

- Russia's short 'special military operation' to 'de-Nazify and de-militarise' Ukraine is already a nine-month-war, and likely to extend into 2023; trans-Atlantic North Atlantic Treaty Organization (NATO) unity under U.S. leadership despite visible internal differences has not collapsed; Mr. Zelensky's emergence as a wartime leader is surprising; and, poor Russian military planning and performance, a shock.
- For the present, Russia is too strong to lose and Ukraine, despite NATO support, too weak to win; so, the war grinds on with no ceasefire in sight.

Takeaways from the Cuban Missile Crisis

- It is the time for the world to learn lessons from the Cuban Missile Crisis (October 1962), which brought the world perilously close to nuclear war as the US and USSR faced off against each other.
- President John F. Kennedy of the United States received word on October 16, 1962, that the USSR was getting ready to station medium- and intermediate-range nuclear missiles in Cuba.
- Following discussion with his core group of advisors, he decided against an invasion of Moscow or a nuclear attack, and announced a naval "quarantine" of Cuba.
- The most important lesson was that, even as their rivalry played out in other areas, the two nuclear giants should avoid any direct conflict to keep it below the nuclear threshold. It was known as "the stability-instability dilemma" by deterrence theorists. Both the United States and the Soviet Union were forced to confine the instability to proxy battles because of their assured-second-strike capacity, which guaranteed mutually assured devastation. For decades, nuclear war games were unable to address the problem of containing a nuclear conflict once a nuclear bomb was used in combat.

The recent escalation:

- The Ukraine conflict is putting the nuclear deterrence doctrine to the test.
- Instead of a nuclear-free Ukraine, Russia finds itself at war with a nuclear-armed NATO.

- As a result, Mr. Putin has displayed his nuclear intentions repeatedly, doing everything from attending personally in mid-February large-scale drills involving “strategic troops” to putting nuclear forces on “special combat alert.”

Anti-Competitive Practices of Tech-Giants

Context:

- In the second blow to Google’s coffers in a week, the Competition Commission of India (CCI) on October 25 imposed a fine of ₹936.44 crore on the tech major for anti-competitive practices in its Play Store policies

What is the reason behind?

- One of the three antitrust litigation Google is involved in in India is the subject of the most recent CCI fine.
- After a private complainant, whose name has been kept anonymous, filed an antitrust complaint against Google in 2020, the inquiry into Google’s payment method utilised in the Play Store got under way.
- Startups and small digital businesses in India have voiced their displeasure with Google’s strategy of forcing app developers to adopt its own payment mechanism.
- In South Korea and Indonesia, similar investigations into Google are also ongoing.

About:

- More than three million programmes can be found in the Google Play Store, a marketplace for apps and services.
- In the current case involving Google, the CCI investigated whether the corporation had violated the Competition Act by mandating that app developers use the Google Play billing system (GPBS) to process payments for both in-app purchases and paid app downloads.
- The investigation also mentioned that app developers would not be allowed to list their apps on the Play Store if they did not follow Google’s policy of using GPBS.
- The CCI came to the conclusion that it was “one-sided and arbitrary” to require GPBS in order to access the Play Store, and that it also denied app developers “the inherent choice to utilise payment processor of their preference from the open market.”

What is Google's Response?

- Google defended itself after the second penalty by claiming that “Indian developers have benefited from tech, security, consumer protections, and unrivalled choice & flexibility that Android & Google Play provide.”
- Google had previously called last week's 1,300 crore fine a “major setback” for its Indian operations.
- The low-cost business model, it continued, had fueled India's “digital transformation” and increased “access for hundreds of millions of Indians.”
- According to a report, Google also intends to file a lawsuit in reaction to the CCI's initial antitrust decision.

Conference of Parties (COP27)

Context:

- The 27th round of the Conference of Parties, or COP27 is scheduled to be held from November 6th
- The annual summit comes at a crucial juncture against the backdrop of global inflation, energy, food and supply chain crises, fuelled by an ongoing war in Ukraine and exacerbated by extreme weather events, with data showing that the world is not doing enough.



Background:

- The United Nations Framework Convention on Climate Change, or UNFCCC, which was approved thirty years ago, is ratified by the attendees at COPs.
- The UNFCCC currently has 198 members.
- Berlin hosted the first COP in 1995. Several COPs have since made headlines for their groundbreaking accords.
- For instance, industrialised economies committed to limiting and reducing greenhouse gas emissions when the Kyoto Protocol was established at COP3 in 1997.

- The 2015 Paris Agreement, which was the result of COP21, a key conference, called for member nations to limit global warming to no more than 1.5°C over pre-industrial levels.
- The Glasgow Climate Pact, adopted at the conclusion of the previous conference held in Glasgow, advocated for the continued “phasing down” of coal power.

COP 27:

- The COP27 will consider whether wealthier nations that produce carbon dioxide should make up for the loss suffered by emerging nations that have lower carbon footprints in order to establish a global response.
- The summit’s four key areas of mitigation, adaptation, finance, and partnership aim to “accelerate global climate action through emissions reduction, scaled-up adaptation measures, and expanded flows of appropriate finance.”
- According to the presidential vision statement, COP27 will focus on transitioning from discussions and preparation to the execution of commitments made.

Doctrine of Pleasure

Context:

- Arif Mohammed Khan, the governor of Kerala, and the state government disagree strongly on a number of subjects.
- The most recent scandal started when he asked numerous vice chancellors to quit after the Supreme Court invalidated the nomination of the vice chancellor of a technical institution.
- The Governor has also asked K. N. Balagopal to be removed from his Cabinet as a result of the State’s Finance Minister’s remarks, claiming that it is no longer a joy to have him on the Council of Ministers.

What is the issue?

- The Supreme Court ruled that Dr. M.S. Rajasree’s nomination as vice chancellor of the APJ Abdul Kalam Technological University in Thiruvananthapuram violated the rules set forth by the University Grants Commission (UGC).
- The specific flaw was that only one applicant was chosen by the search committee, and the Chancellor was advised to appoint that person.
- In accordance with UGC guidelines, a panel of three to five names should be suggested so that the Chancellor has a variety of possibilities.

About the Doctrine:

- Under the English common law's "pleasure doctrine," the monarch has the right to terminate any employee's employment at any moment.
- According to Article 310 of the Indian Constitution, each member of the Union's defence or civil service serves at the pleasure of the President, and each employee of a state's civil service serves at the discretion of the Governor.
- However, removal of a civil servant is subject to limitations set forth in Article 311. It stipulates that government employees should have a fair chance to have their charges against them heard.
- According to Article 164, the Governor appoints the Chief Minister, and the Governor consults the CM before appointing the other Ministers.
- It also states that Ministers serve at the Governor's pleasure.
- The term "pleasure" is also understood to refer to the Chief Minister's authority to choose the Minister, not the Governor.

Ganges River Dolphin

For Prelims:

About Ganges River Dolphin:

- The Ganges River dolphin (*Platanista gangetica*) was officially discovered in 1801.
- It is also known by the name susu (popular name) or "Sisu" (Assamese language) and shushuk (Bengali).
- Ganges river dolphins once lived in the Ganga-Brahmaputra-Meghna and Karnaphuli-Sangu river systems of Nepal, India, and Bangladesh.
- But the species is extinct from most of its early distribution ranges.
- The Ganges River dolphin can only live in freshwater and is essentially blind.
- They hunt by emitting ultrasonic sounds, which bounces off of fish and other prey, giving them an ability similar to sonar or Bats.
- They are frequently found alone or in small groups, and generally a mother and calf travel together.
- Calves are chocolate brown at birth and then have grey-brown smooth, hairless skin as adults.
- Females are larger than males and give birth once every two to three years to only one calf.
- The Ganges river dolphin is important because it is a reliable indicator of the health of the entire river ecosystem.
- The government of India declared it the National Aquatic Animal in 2009 and it is the official animal of the Indian city of Guwahati.



Other Facts about Ganges River Dolphin:

- IUCN Status: Endangered.
- CITES Appendix I.
- Wildlife (Protection) Act 1972: Schedule 1
- The Vikramshila Gangetic Dolphin Sanctuary in Bihar is the only sanctuary for the conservation of Gangetic dolphins in India.

For Mains:

The major threats to Ganges River Dolphins:

- The Ganges river dolphin is still hunted for meat and oil, which are both used medicinally.
- Industrial, agricultural, and human pollution is another serious cause of habitat degradation.
- Each year, 9,000 tons of pesticides and 6 million tons of fertilizers are used in the vicinity of the river.
- High levels of pollution can directly kill prey species and dolphins, and completely destroy their habitat.
- As the top predator, river dolphins have been known to have high levels of persistent toxic chemicals in their bodies, which is likely to adversely affect their health.