

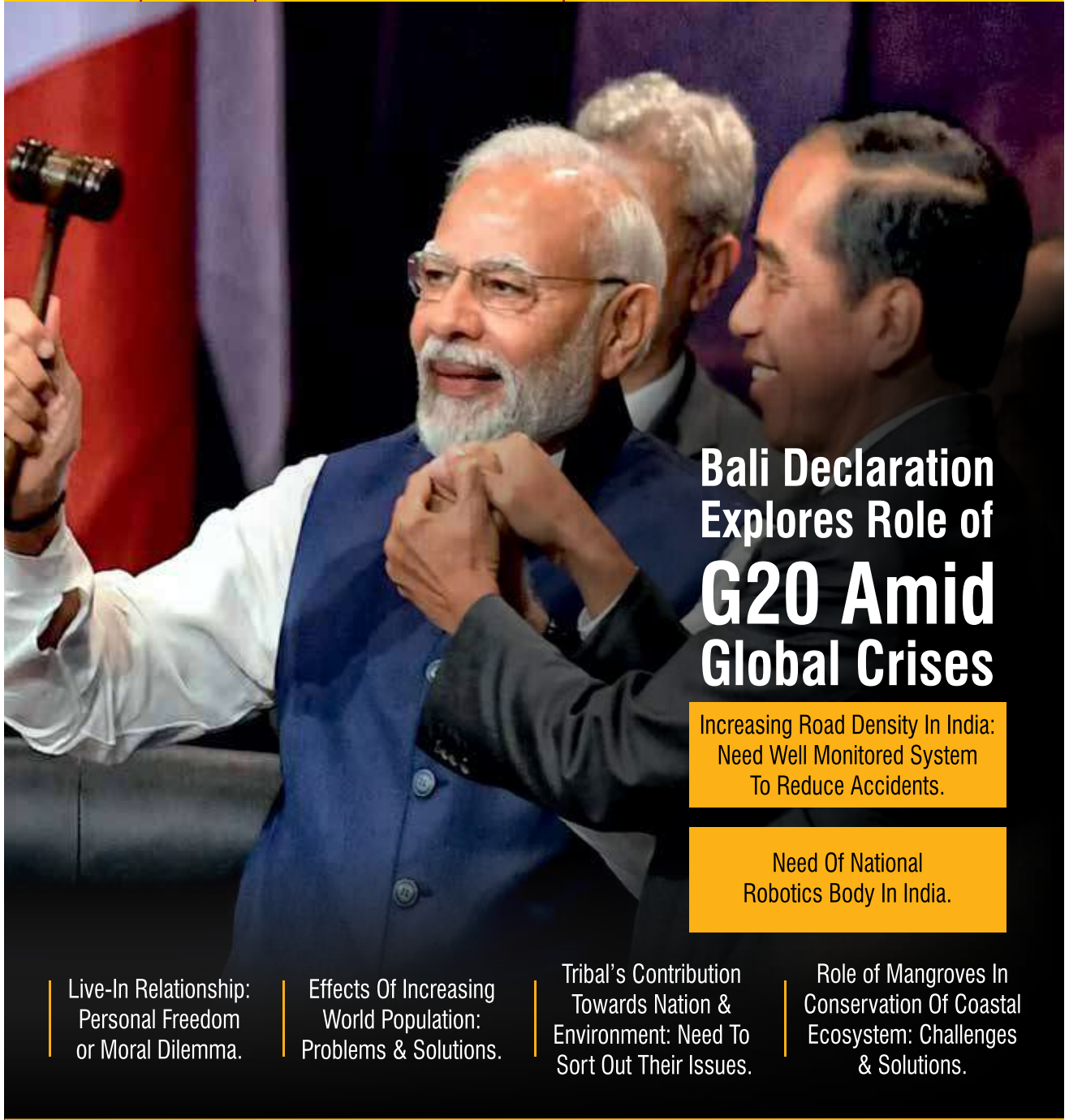
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Complete Fortnightly for **UPSC** and **PCS** Exam



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Bali Declaration Explores Role of G20 Amid Global Crises

Increasing Road Density In India:
Need Well Monitored System
To Reduce Accidents.

Need Of National
Robotics Body In India.

Live-In Relationship:
Personal Freedom
or Moral Dilemma.

Effects Of Increasing
World Population:
Problems & Solutions.

Tribal's Contribution
Towards Nation &
Environment: Need To
Sort Out Their Issues.

Role of Mangroves In
Conservation Of Coastal
Ecosystem: Challenges
& Solutions.

Why Perfect-7 Current Affairs Magazine?

1. First of all, Perfect-7 Current Affairs Magazine is published **every 15 days** to keep students up-to-date with current affairs, while other coaching institutes have monthly magazines which aggregate the current affairs of the month. Due to large number of current affairs, students are often unable to read all the articles. Eventually they become dependent on annual and half yearly magazines.
2. Perfect-7 magazine has been created keeping in mind the **UPSC and State PCS centric exams**, whereas the magazines of other coaching institutes include unnecessary and extra material in the name of UPSC and State PCS exams, causing confusion among the students.
3. **Perfect-7 magazine has 7 editorial articles by subject experts on important events during 15 days, 42 articles on important events, 7 brain-boosters in creative style, current affairs, one liner, preliminary and mains exam related questions etc.** are given. Along with this there is also a section on eminent personality which shows the contribution of the historical personality towards the country and society. In this way, no important information and news is missed in the period of 15 days for UPSC and State PCS exams.
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8. Perfect-7 Magazine contains prelims and mains exam focused mock questions through which students can make their preparation more precise.

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2. Bali Declaration Explores Role Of G20 Amid Global Crises
3. Need Of National Robotics Body In India
4. Tribal's Contribution Towards Nation & Environment: Need To Sort Out Their Issues
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Message



Vinay Kumar Singh

**Founder
Dhyeya IAS**

Current Affairs has an important role in the examinations conducted by Union Public Service Commission and State Public Service Commissions. It is necessary for the candidate to have knowledge of relevant information on issues of national and international importance. Perfect 7 Magazine is being presented fortnightly to the students to fulfill this requirement. Preparation of civil services exam is only completed when candidates have holistic knowledge and analysis of the dynamic nature of the current affairs. 'Perfect7' keeps this vision and approach and understands the multidimensional need of students at the content level, so this magazine has presented the current affairs with relevant issues of general studies. Keeping in mind the needs of mains exam, current articles on 7 burning issues, Ethics Case Studies, Biographies of important personalities, coverage of most useful topics of various sections of General Studies and the most important current affairs issues are being covered for Preliminary Examination in which emphasis is being given on national, international, environment, ecology, art and culture, science and technology, economic issues.

Brain boosters with 7 themes based graphics are being presented in a concise form to enhance the conceptual understanding of the students. Apart from this, updated information on Global Initiatives, Global Institutions, Structure of Organizations, Functioning, Important Reports, and Indices will be included in this magazine, which is asked prominently in the Civil Services Examination. To give emphasis on facts and analysis, keeping in view the trends of new nature of questions in Preliminary and Main Examination of Civil Services, an inclusive magazine is being provided to the students so that they can give the right direction to their preparation by understanding the new requirements of Civil Services Examination. Columns have been included in the format of the magazine keeping in mind the factual needs of the candidates, mental development, developing writing technique etc. Along with this, we have been introducing new segments according to the changing needs of the candidates and these initiatives will continue in future also. Hope this issue will prove useful for all of you. Your suggestions are always welcome.

Best wishes.

6 National Issues Increasing Road Density In India: Need Well Monitored System To Reduce Accidents

The road and highways ministry is working to halve road accidents in India by 2024, Union Minister Nitin Gadkari said at the India Today Conclave Mumbai. India has the second largest road network in the world with a total road length of 6.4 million km (including national and state highways and urban and rural roads). The road network is an important pillar in India's economic recovery. Road transport is much cheaper as compared to other modes of transport. To promote this by the Government of India, the Bharatmala Project (construction of 66,100 km of economic corridors, border and coastal roads and expressways), Sagarmala Project etc. has been started. Road accident is the most unwanted thing for the road user. Most of the road users become victims of accidents due to their own negligence despite being well aware of the general rules and safety measures of the roads.

A road is a route between two destinations that is used to enable transportation through motorized and non-motorized vehicles. Drunk driving, jumping red light, avoiding safety equipment like seat belt and helmet, not following lane driving and wrongful overtaking, over speeding, distraction to driver, rash driving, violation of rules, understanding signals Fatigue, Illiteracy, Crossing at wrong places, Running on carriageway, Getting off and boarding vehicle traveling on footboard from wrong side, Holding a moving bus, Brake or steering failure, Tire burst, Inadequate headlights, Overloading, potholes, damaged road, illegal speed breakers, fog, heavy rain, storm etc. are responsible for road accidents. Due to Lack of visibility, lack of license, non-strict enforcement of proper provision related to crime by juveniles, lack of adequate test driving tracks, non-availability of institutes for 'refresher training' also lead to accidents. Risk of life, injury, damage to property etc. are the result of road accidents.

India's Situation in Road Accidents:

- India accounts for about 10% of all road accident related deaths. According to the 2020 report of the Ministry of Road Transport and Highways, there were a total of 1,31,714 deaths due to road accidents in India. Speeding is responsible for 69.3% of these deaths, while not wearing a helmet caused 30.1% of the deaths. 11.5% of deaths are due to non-use of seatbelts.
- Road traffic injuries are the eighth leading cause of

death globally. It is the first leading cause in the 5-29 year age group.

- The Accidental Death Rate (per 100 casualties) which was 26.9 in the year 2001, increased to 28.63 in the year 2011 and 37.54 in the year 2020.

Measures taken for road safety:

Road Safety – Road safety is the prevention and protection of road accidents by using related measures. Its purpose is to make people safe while traveling on the roads. This is to make all road users like pedestrians, two wheelers, four wheelers, multi wheelers and other transport vehicle users safe.

- **Brasilia Declaration (2015):** This declaration related to road safety was signed at the 2nd Global High Level Conference on Road Safety held in Brazil. India is also a signatory to this declaration. Under this, halving the number of global deaths and injuries due to road traffic accidents by 2030 and 2021-2030 has been considered as the working decade for road safety.
- **International Road Assessment Program (iRAP):** It is a registered charity dedicated to saving lives through safer roads.
- **National Highways Authority of India Act, 1998:** The Act deals with the constitution of an authority for the development, maintenance and management of NHs and for matters connected therewith or incidental thereto.
- **Control of National Highways (Land and Traffic) Act, 2000:** The Act provides for the control of land within the National Highways, right of way and traffic plying on the National Highways and the removal of unauthorized encroachments.
- **Carriage by Road Act, 2007:** The Act provides for the regulation of common carriers, the limitation of their liability and the declaration of the value of goods delivered to them, so as to determine their liability for loss or damage to such goods caused by their own servants or agents. Due to negligence or criminal acts.
- **Motor Vehicles Amendment Act, 2019:** The Act increases the penalties for traffic violations, defective vehicles, juvenile driving, etc. It provides a Motor Vehicle Accident Fund. It will provide compulsory insurance cover to road users for several types of

accidents. It also provides for a National Road Safety Board to be constituted by the Central Government.

- MoRTH participated in the 3rd High Level Global Conference on Road Safety to achieve the Global Goals 2030 in Sweden in the year 2020. In this, a target was set to achieve zero road accidental death in India by 2030.
- Integrated Road Accident Database (IRAD) project aims to improve road safety by enriching the accident database by consolidating data from various records through mobile and web apps.

In April 2014, the Supreme Court, in a three-member broadcast on road safety, K.S. Radhakrishnan Panel was set up. It bans the sale of liquor on highways to control drunken driving. The committee emphasized on making people aware about the information related to road safety. In 2017, the Supreme Court issued several directions regarding road safety such as-

- Constitution of State Road Safety Council, setting up of Road Safety Fund, issuing notice of road safety work report.
- Formation of District Road Safety Committee, establishment of trauma care centers, inclusion of road safety education in school curriculum.

Some Other Accident Prevention Measures:

- Education and awareness about road safety
- Strict enforcement of the law
- Vehicle Design, Road Infrastructure.
- Rapid testing can save 20,000 lives annually in India. More than 60% of road accidents are caused by excessive speeding, but the 'speed limit' signboards on state highways and major roads have been found lacking in standards.
- Installation of speed detection devices like radar and speed detection camera system may be initiated. Chandigarh and New Delhi have already implemented the service of speed detection devices such as digital steel cameras (Chandigarh), speed cameras (New Delhi) and radar guns (New Delhi) in traffic control.
- Use of equipment like radar gun which enables the traffic police to estimate the speed of the passing vehicle.
- Speed humps, raised platforms, roundabouts and optical marking can reduce road accidents to a great extent.
- To reduce traffic violations, especially driving under the influence of alcohol, cannabis or other

drugs, heavy motor vehicle fines can be imposed on violators.

- Vehicle safety features like electronic stability control, effective car crash standards and advanced braking should be made mandatory.
- Launch of Bharat NCAP (New Car Assessment Programme) by the Ministry of Road Transport and Highways.
- Training courses and training workshops to be organized for capacity building in road safety audit and road safety engineering.
- Activating the emergency care system could potentially save lives.

Basic awareness about vehicles for road safety, defensive driving according to weather and road conditions, use of vehicle lights and horn, wearing seat belts, proper use of vehicle mirrors, avoiding over-speeding, turning on road lights Understanding, maintaining distance, number of vehicles on the road, proper understanding to deal with crisis situation, telecast of awareness documentaries etc. can be some effective measures.



Way Forward:

India sets impressive targets to reduce road accident deaths and ensure road safety, but strict legislation and enforcement workforce are still lacking for the success of this strategy. Also, it is necessary to take into account the past record of road data and available infrastructure for implementation of road safety measures. Strict enforcement of traffic safety rules would be highly effective. To organize road safety awareness and education programmes. Improving the necessary infrastructure by providing official finance. Making the data collection process more user-friendly. Road users and general public should be sensitized about the right and feeling of road safety. To reduce road accidents, it is not enough to just set targets, but there is also a need to make dedicated efforts to achieve those targets.

International

Bali Declaration Explores Role Of G20 Amid Global Crises

14 years ago when the Asian financial crisis slowed down the rate of economic growth the global economy suffered a major setback. Once again in 2020, the world economy is suffering a severe economic crisis and many big nations are finding themselves unable to recover from the ongoing economic crisis. What is worth noting, however, in both these scenarios of economic crises, is the role of the G20 organization. The G20 was formed in 1999 as a consequence of the effects of the Asian financial crisis. Now again when the world is surrounded by economic, and geopolitical predicaments, the G20 conference was once again held in Bali, Indonesia to find a way out. The special thing that should be noticed in this conference is that, that the developed nations of G20 have started to recognize the role and the potential of emerging market economies like India, Brazil, and South Africa in bringing the global economy back on track. This is further evident from the fact that in 2023, the G20 will be organised by the world's largest democracy India, while in 2024 and 2025 it will be organized by Brazil and South Africa, respectively. This reflects the growing importance and stature of BRICS and IBSA.

The Bali declaration of G20 shows that developed and developing countries consider G20 as the most effective means for global economic recovery. Perhaps this is the reason why the nations, keeping aside their economic differences and ambitions, are agreeing to ensure global economic cooperation by abandoning economic protectionist policies. The Russia-Ukraine war and other geopolitical tensions have severely affected the economies of European countries, especially Britain. Therefore, at the Bali Summit of the G20, the nations said that they strongly oppose Russia's barbaric and bestial mentality of war. Furthermore, they said that they want Russia to unconditionally stop its military action against Ukraine as the war is now turning into a huge human tragedy. As per rule-based international order and democratic values, no country is allowed to sacrifice global peace, security, and economy for its ambitions. Before the Bali G20 meeting held in Indonesia, US President Joe Biden and Chinese President Xi Jinping also said that nuclear war should not be fought under any circumstances. Both countries have further said that war can never be won with nuclear weapons.

They have strongly condemned Russia's nuclear threats to Ukraine. This perspective of China is

encouraging to western countries at different levels as China is rarely vocal about issues.

India's realistic stand in G20:

In the speech given by the Indian PM Narendra Modi, at the Bali Summit of G20, it was clearly said that 'this era cannot be of war'. This shows the government's strong foreign policy and approach. By saying this, India has conveyed a message to its partners of western countries, including America, that India is not in any kind of dilemma or confusion that it will support the unacceptable act of its friend nation Russia. War has thrown the world into food and energy insecurity and humanity is suffering from it, hence war should be stopped immediately.

USA and China also agreed with India's stand regarding Russia in G20. The Prime minister showed the way to end the Ukraine war from this international platform. He said that this war should be ended through diplomacy and dialogue. The G20 countries, in the meeting, reiterated their commitment to respect the UN Charter and UNSC resolution ES-11/1, which strongly condemns Russia's war on Ukraine. While the Bali Summit G20 has acknowledged that it is not a forum to solve security issues, however, the summit is aware that many other security issues like Russia-Ukraine, are badly affecting the global economy.

Cooperation is necessary for sustainable development:

The G20 does not want the critical supply chains in the world to collapse, while on the other hand, the members of the G20 do not want the countries, that are badly hit by Covid-19, to face war-borne energy inflation. The G20 countries now seek that work should be done for such sustainable development so that all possible possibilities of economic recession can be eliminated. This is echoed in the theme of Indonesia's G20 presidency as well, which is "Recover Together, Recover Stronger". For the timely achievement of Sustainable Development Goals, the G20 countries have asked the Multilateral Development Banks to increase both the volume and the pace of financial cooperation in this direction so that it can be easier for the nations to deal with the food crisis. The countries further have called on the Global Crisis Response Group on Food, Energy and Finance to play a

more active role in view of today's situation.

Emphasis on One Health Approach:

In the declaration issued at the G20 Bali Summit, it has been mentioned that countries will have to identify the most vulnerable communities, such as women, children, refugees, youth, marginal farmers, Fishermen etc. who are affected by the Covid pandemic, war, natural disasters so that they can be socio-economically secured. Presently, the world should work to implement the 'One Health Approach'. 'One Health' is an integrative approach for people, animals and the environment to balance and optimize health. It includes the public health, veterinary, and environmental sectors. This approach specifically focuses on food and water safety, and it is particularly relevant for nutrition, control of zoonotic diseases (diseases that can spread between animals and humans, such as flu, rabies, and Rift Valley fever), pollution management, and antimicrobial resistance (its emergence).

Strengthening of Global Institutional Values and the G20:

- One of the biggest challenges that international politics and world order today face, is the continuous erosion of global institutional values. Many nations have developed the habit of working against the values, norms, and decisions of global organizations. This challenge was realised recently at the G20 Summit.
- The meeting emphasized the restoration of global institutional values for global socio-economic development. It envisages further strengthening the central role of the WTO in the development of a rules-based, non-discriminatory, independent, fair, open, inclusive, equitable, and transparent multilateral trading system. Further, the emphasis has been laid on working with the WTO by enhancing mutual trust for inclusive growth, innovation, job creation, and sustainable development.
- The crucial thing was that the G20 member countries agreed that they are ready to discuss the necessary reforms related to the structure, functions, jurisdiction, and dispute settlement mechanism of the World Trade Organization. Emerging developing market economies like India have been emphasising the fact that the WTO should be made a fair forum that works to give fair judgement and is sensitive to the interests of the economic rights of developed countries as well as developing countries, least developed countries, and small island countries.
- This expectation of India was reflected in the Bali Declaration of G20. It states that the G20 member countries will provide a favourable business and investment environment for all countries and they will ensure that all nations have a level playing field and fair competition. This will surely increase the respect of various global financial institutions for multilateralism and motivate nations to work towards preventing the erosion of global institutional values.
- Working towards the protection of global institutional values is no longer a matter of choice but an imperative need for organizations like the G20 because of the array of challenges are emerging in the world, be it pandemic, war-borne tensions, climate change and global warming, increasing cases of cyber crime or cyber terrorism, even developed nations are not untouched by them. Therefore, G20 countries like USA, Britain, France, Germany, Australia, Japan, strongly emphasise on Rule Based International Order. It was further acknowledged in the Bali Summit of G20 that it is a difficult task to achieve national interests and maintain them for a long time without being associated with the rule of law, protection of human rights, protection of democratic values in the world community.
- The member states at Bali summit emphasized on the need for compliance with the provisions of the United Nations Convention on the Law of the Sea and better coordination of global environmental institutions. These nations, to promote global environmental institutional values, called for UN resolution No. 69/292 which is related to the conservation and sustainable use of marine biological diversity outside national jurisdiction, and shaped under the United Nations Convention on the Law of the Sea.
- The G20 countries say that now countries will have to work together more actively for the protection of forests, sea grasses, coral reefs, wetlands, peatlands, mangroves, and also strengthen climate change mitigation and have to strengthen adaptation efforts at the institutional level.
- The G20 member countries have emphasized the strengthening of global institutional values for global economic recovery. In this, special emphasis has been laid on the role of OECD and IMF. Apart from this, the G20 summit has talked about making the role of International Monetary Fund effective for

strengthening global economic institutional values. The revised institutional approach, on liberalization and management of capital flows of the International Monetary Fund, for promoting sustainable capital flows and local currency capital markets was welcomed at the Bali Summit.

- The Bank for International Settlements report on Macro Financial Stability Frameworks was welcomed as well. The G20 member nations have further recognized the efficient role of financial institutions in making the cross border payment system more effective. It is also important that emphasis has been laid on speeding up the process of reforming the governance of the International Monetary Fund and there has been discussion regarding creating a new quota formula, under the General Review of Quota in 16, by December 15, 2023 as well.
 - Developing countries like India want the IMF's quota system to be such that allocation of quotas to developing countries is done in a non-discriminatory manner. It is worth mention here that, the quota system is the method used to manage the financial resources of the IMF. Whenever a country joins the IMF, it is given a quota and this quota determines three things regarding that country.
 - First, what will be the voting rights of that country in the IMF.
 - Second, to what extent that country will have financial access to the IMF and
 - Third, what will be the position of that country in important decisions made under the banner of the IMF.
 - It also determines the maximum amount of financial support that the IMF will give to a member country, the quota system also determines the maximum financial contribution of a member country to the IMF. In this way, it is an important system to which the interests of developing nations are attached, and therefore countries like India have constantly advocated for reforming the structure and functions of the IMF, the World Bank, the United Nations as well as the WTO etc. and thereby it determines the global institutional value. Now that G20 has also understood this thing, it is a good sign for the world order.
- year 1999 by the G7 member countries. It was formed as a forum for economic dialogue between emerging market economies of developing countries and developed countries. It is an informal business group with no permanent headquarters, no secretariat, and no permanent staff.
- Trade, commerce, investment was badly affected by the Asian financial crisis in 1997, which also affected the business of developed countries. The Southeast Asian countries, which were called tiger economies, were also affected by the Asian financial crisis. Developed nations have developed this forum as an important organization to deal with the slowdown in the global economy, imbalance in regional trade and other economic challenges.
 - The G20 formulates strategies to deal with the challenges faced by the global economy, such as economic recession, global poverty and unemployment, inflation, food insecurity, black money, money laundering, economic crimes, etc. G20 focuses on Base Erosion and Profit Shifting project to combat black money and money laundering. It has appealed to the nations from time to time for the required reforms for international tax administration. The G20 also sets the agenda to prevent tax evasion by companies globally and prevent serious economic crimes. Along with this, the G20 talks about United Nations reform, reform of the World Trade Organization, and the development of the Blue Economy.
 - G20 countries account for 85 percent of global GDP and 75 percent of global trade. Two-thirds of the world the population resides in the G20 member states. The European Union is a permanent member of the G20 Summit. Its meeting is attended by representatives of the IMF, the World Bank, and the EU.
 - Global financial challenges, inflation, rising petroleum oil prices, devaluation of the rupee or dollar, the severe economic crisis in European countries including the UK, displacement of refugees due to war and natural calamities, Rohingya refugee crisis, the balance of payment crisis of many nations, Global unemployment and poverty, food insecurity, malnutrition, human and wildlife trafficking, global warming, all these conditions are affecting the global economy badly. In such a situation, the responsibility of the top 20 industrialized nations increases to ensure the global financial stability of the world.

Why G20 has been important for 14 years:

- The G20 is an organization of the world's 20 most industrialized countries, which was formed in the

Technology

Need Of National Robotics Body In India

Context:

Ajay Gopalswamy, CEO of DiFACTO Robotics and Automation, urged for the establishment of a National Robotics Association of India on the model of Nasscom to set standards and safety rules while also fostering innovation during the 25th Bengaluru Tech Summit.

India's Significant Private And Public Robots Include:

- A spider-shaped robot dubbed "Bandicoot" will be used by the Kerala government in conjunction with the firm Genrobotics of Thiruvananthapuram to clean municipal manholes and sewers.
- Due to the high speed and accuracy it offers, Bangalore-based SME Suparna Plastics Ltd., which manufactures plastic ball valves, uses SCARA (Selective Compliance Assembly Robot Arm) robots in its assembly processes.
- Additionally, robots are being used in the healthcare industry for procedures that call for more accuracy.
 - » For instance, in December 2018, the Apex Hospital in Ahmedabad utilized the Corpath technology developed by the US company Corindus Vascular Robotics to remotely control a robot and execute a telerobotic heart surgery on a patient who was 32 kilometers away in Gandhinagar.
- Manav, the first 3D-printed humanoid robot in India, is primarily intended for research and is provided to research institutions that offer robotics as a field of study. Manav has an inbuilt vision and sound processing capability.
- Mitra, the Nation's first humanoid robot, can communicate intelligently with people. Ivanka Trump, an adviser to then President Donald Trump, and Prime Minister Narendra Modi introduced it during the Global Entrepreneurship Summit (GES) conference in 2018. It may be seen conversing with patrons while hovering in the hallways of Bengaluru's Canara Bank and PVR Theaters.
- Robocop is a police robot that has been deployed in Hyderabad to help maintain law and order and manage traffic. It can take care of security if deployed autonomously and is intended to protect and secure locations like offices, shopping centers, airports, signal posts, and other public spaces. Bombs can also be diffused by it.

- KEMPA, a unique robot assistant created specifically for the needs of the Kempegowda International Airport, will respond to travelers' questions in both English and Kannada.
- RADA is a distinctive robot powered by artificial intelligence that was created by Vistara, a partnership between Tata Sons and Singapore Airlines, to automate routine activities and enhance customer service.

India's Position In the Robot Race:

Robotics has opened up a wide range of opportunities, with which the world is starting its fourth industrial revolution. Hence, Prospects for India:

- **Agriculture:** efficient irrigation, precision farming, and water utilization.
- Oil exploration and mineral prospecting to prevent rat hole mining.
- Oil spill clean-up using nanobots.
- Improving medical services, particularly in the face of pandemics like COVID.
- Industry 4.0 is the automation of supply chains using robots, particularly in the semiconductor industry.
- Cleaning nuclear waste and controlling leaks are both aspects of disaster management.
- Border security automation to prevent terrorism and infiltration.

Institutions And Their Efforts In Robotics In India: The CAIR: Center for Artificial Intelligence and Robotics

- **Chaturobot:** Object selection using vision sensors (DRDO+CAIR). The Center for Artificial Intelligence and Robotics (CAIR) is the top research and development (R&D) facility for various ICT (information and communication technology) applications to the military.
- The next manned expedition will use a robot called smartNAV to navigate the moon's surface (ISRO).

The AIIMs in New Delhi:

- It has successfully completed robotic surgery on a patient with "Myasthenia Gravis," removing the thymus gland.

IIT Kanpur's Centre for Robotics & Mechatronics:

- **e-Yantra:** e-Yantra is a project to integrate robotics into engineering education with the goal of enthusing hands-on applications of math, computer science, and engineering principles that will engage students and teachers.
- It is a project by IIT Bombay that seeks to develop the next group of embedded systems engineers with a focus on application so they can contribute to offering useful solutions to some of the problems encountered in the real world.

India's Robotics Development:

- Industrial robots are becoming more and more popular in India, and many Americans, Koreans, and even Japanese are employing them.
- The use of robots in India has recently expanded significantly beyond the country's traditional industrial and nuclear energy uses to include emerging fields including education, rehabilitation, entertainment, and even domestic use.
- Similarly, the number of Indian robotics researchers has increased from a small number to over 100, working in atomic energy, industry, research labs, and other fields.

Applications For Robotics:

MILITARY: Tele robots, like unmanned aerial networks, can be utilized in the military to carry out hazardous jobs in remote or inaccessible locations.

- These may be operated from anywhere throughout the world, enabling an army to scan the terrain and even fire at targets without putting its users in risk.
- It aids the military in disarming improvised explosive devices or roadside explosives.

Medical Care & Health: Significant benefits of robotic surgery include:

- » Less bleeding.
- » Reduced incision.
- » Reduced pain
- » Time spent in the hospital is cut down.
- » Decreases the likelihood of problems following surgery.
- » Rapid healing
- » In Japan a semi-autonomous robot named FRIEND was created to assist elderly and handicapped persons in their everyday routines.

Environment: Non - biodegradable pollutants, notably oil spills and disassembled pollutants, can be cleaned up by nanorobots to lessen their influence on the environment.

- » Robots can be employed at nuclear power facilities to handle and dispose of radioactive waste, protecting the workers there from potentially harmful radiation exposure.

Space Exploration: Robots have been used in almost every unmanned spacecraft that has ever been launched.

- » Because they can do the required duties in an unstructured environment without constant human supervision, autonomous robots are utilized in space exploration.
- » Remotely Operated Vehicle (ROV) is an unmanned spacecraft that can function as a robot that can move across the terrain in which it has been landed or as a Lander that makes contact with an extraterrestrial body and operates from a stationary position.

Disaster management: A number of snake robots have been built with success.

- » These robots can negotiate very small areas by moving like genuine snakes do, making them potentially useful in the hunt for trapped individuals in collapsed structures.
- » Even in water and on land, the Japanese ACM-R5 snake robot can travel.

Robotics In India: The Challenges:

- Due to the high cost of importing hardware components and staff training, robotic technology adoption is exceedingly expensive.
- Since robotics is a multifaceted subject, finding and keeping top talent is a major challenge.
- Due to the interdisciplinary nature of robotics, all students outside of those attending the best institutions in India lack the expertise in four to five engineering disciplines needed to work in this industry.
- Additionally, the majority of students create projects that are already in the public domain.
- Robotics adoption is capital-intensive, and when compared to the inexpensive cost of human labour, this obviously tips the scales in favour of the latter.
- There is a lack of qualified instructors to teach the topic; engineering students are not well-taught

robotics outside of a few colleges and universities in India.

Conclusion:

- Robots will soon be an integral part of daily life for humans. While many often refer to these as contemporary solutions to bigger problems, literary experts and theorists have predicted that robots can have a negative impact on humanity by “turning against us” and attacking us rather than meeting our needs. Actually, there are good and harmful aspects to the development of robotics.

- Therefore, it is our responsibility as humans to comprehend the safe boundaries of inventions and use robotic services in precise and responsible ways. In any case, the world has benefited greatly from these automated machines, which are controlled by a set of computer programs, interact with their surroundings, and perform tasks.



NEW BATCH - FACE TO FACE

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6 Art & Culture

Tribal's Contribution Towards Nation & Environment: Need To Sort Out Their Issues

Context:

Recently the Pahari tribal community has got the status of Scheduled Tribe in the Union Territory of Jammu and Kashmir.

Introduction:

Tribals are such parts of human society that generally live in the primitive stage of human culture. They have a definite territory, a special type of language, primitive religion, and tradition. In the words of Dr. D. N. Majumdar, a tribe is a collection of families or groups of families bearing a common name, the members of which reside on a definite territory, speak a common language and observe definite prohibitions in respect of marriage, business, or industries. and mutual reciprocity and reciprocity of duties so that a well-run system has been developed.

Contribution of Tribals to the Nation:

In the Freedom Movement:

- During the colonial rule from 1757 to 1947, there was widespread opposition from the tribes to British rule. His first is considered to be the Chuar rebellion of 1768.
- After that, there were rebellions in Andhra Pradesh, Andaman, Nicobar, Arunachal Pradesh, Assam, Mizoram, Nagaland, etc. at many places. Mizo Rebellion (1810), Kol Rebellion (1795 and 1831), Munda Rebellion (1900), Garo and Khasi Rebellion (1829), Santhal Rebellion, Gond Rebellion, Naga Rebellion, etc. were major rebellions.
- Rani Gaidinliu played an important role in national integration by converting tribal movements into national movements during the Non-Cooperation Movement.

Contribution to art and culture:

- The tribes have played an important role in enriching the art and culture of India. Among their major dances, the Bhariya dance, Pardhoni, and Dadaria dance performed by the Baiga tribe, and Hulki dance performed by the Sahariya tribe are prominent. Along with this, Thopti dance, Dhad dance, Barali dance, and Ranganma dance were performed by the Naga tribe etc.
- Along with this Chitra Vichitra Mela (Gujarat), Shamlaji Mela etc. major fairs are related to tribes.
- In the case of festivals, Sekerenyi festival (Naga tribe), Lui Ngai ni festival (Naga tribe), Dree festival

(Apatani tribe), Losar (Monapa tribe), etc. are major festivals that enrich the heritage of India.

- The beginning of painting in India is believed to be from the caves of Bhimbetka which were built by the tribes.
- Thus, tribes have contributed significantly to nation-building and provided a rich heritage of art and culture.

Contribution of tribes to the environment:

There is a close relationship between tribals and forests. Our culture has been a forest culture. Forests and wild animals were considered part of their family by the local forest dwellers there. Forest-dwelling society has always done the work of preserving forests by living independently in the forests and meeting their needs. We can decide from this that the tribal rebellion mainly started at the same time when the colonial rule started taking over the forests. We can say that tribes are the natural protectors of the environment, which we see as described below:

- Bishnoi movement in 1731 in Khejdi village of Marwar, the Chipko movement in 1974 in Uttarakhand (inspired by Chipko movement), Bihar's Jungle Bachao Andolan 1980, the Balliapol movement etc. are the major movements in which the tribes actively protected the forests in the erstwhile states or Strongly agitated against the state governments.
- Trees, rivers, forests, etc. are considered as the form of God by the tribal communities, so they have an emotional attachment to the forests.
- The traditional knowledge system of medicines and industrial use of forest produce also provides an important role to the tribes in forest conservation.
- Along with this, the people of the tribal area play an important role in preserving community conservation, sacred groves, etc.

Because of this attachment of the tribes towards the environment, the Forest Rights Act was enacted by the government in 2006, in which the rights of the tribes on their forests were confirmed.

Major Challenges of tribal communities:

- **Trust Deficit:** The most important problem of tribal communities is the problem of trust deficit with the people of the mainland. The Forest Acts of 1894 and 1952 provided for the removal of tribes from the forests, as well as declaring many of the tribes as

habitual offenders for rebelling against the colonial powers. These circumstances gave rise to a crisis of confidence between the mainland and the tribal people.

- **Economic crisis and land encroachment:** The second biggest problem of the tribal community is the economic crisis. On the one hand, they do jhum agriculture, due to which the facility of permanent income in agriculture ends, along with this, their land has also been snatched from the construction work done by the developmental projects on the land of tribal communities. According to government figures, about 4,300,000 hectares of tribal land have been encroached on legally or illegally even before the Forest Conservation Act, of 1980.
- **Health Issues:** Health issues are the third biggest problem. Tribes are very vulnerable to epidemics, and infectious diseases. They have less access to the modern medical system and health facilities. Due to these reasons, the life expectancy in the tribal community is also very low.
- **Disruption in Attachment to Nature:** Many times when UNESCO takes over the conservation department of the area declared as a World Heritage Site in the name of conservation, the tribals consider this protection as an encroachment against them. This also causes conflict between the outsiders and the tribal people.
- **Concerns related to the Forest Rights Act:** Although the Forest Rights Act 2006 confirmed the rights of tribals on forests, the lax implementation of the Forest Rights Act has emerged as a major problem. The constitutionality of the Forest Rights Act has been challenged by several conservationist organizations in the Supreme Court on the ground that according to Article 246 of the Constitution, the land is a subject of the State List, so the Central Government or the Parliament cannot make any law on it. Some time ago, the Supreme Court decided that the state governments can preserve forests according to their respective land rules, although this matter is still going on in court.

Along with this, the tribal community is suffering from many types of social problems such as forced conversion, separation, child marriage, and illiteracy, which need to be resolved.

Efforts to Solve the Issues Related to the tribal community:

Constitutional Provision:

- Articles 15 and 16 of the Constitution provide for reservation for the Scheduled Tribes.

- Article 17 of the constitution declares the abolition of untouchability.
- Article 21 of the Constitution provides for a life of dignity for all, including tribal life.
- Article 23 of the constitution gives right against exploitation in which human trafficking and forced labor are prohibited.
- Article 342 of the Constitution defines Scheduled Tribes
- Special provisions have been made for the administration of tribal areas in Schedule 5 and Schedule 6 in the Constitution.
- Article 371 of the Constitution makes special provisions in respect of many states and a large number of tribes reside in these states.

Statutory Provision:

Scheduled Castes and Scheduled Tribes (Prevention of Atrocities) Act, 1989:

- This act declares crimes committed against Scheduled Tribes and Scheduled Castes as non-bailable and punishable.
- It protects Scheduled Castes and Scheduled Tribes from social, economic, and political crimes.

PESA 1996:

- The Panchayat Provisions (Extension to the Scheduled Areas) Act 1996 was based on the recommendations of the Bhuria Committee.
- It establishes a commitment to local governance in tribal areas.
- Recently Chhattisgarh state has notified these rules.

Forest Rights Act 2006:

- The Forest Rights Act 2006 recognizes the traditional rights of tribal communities. It has a provision to indicate important residential locations in protected areas.
- However, its lack of implementation is a matter of concern.

Executive Orders:

- The President can frame legislation in the area of Scheduled Tribes by his order.
- Regional and Autonomous District Councils have been formed for tribal administration.
- The Ministry of Social Justice and Empowerment is working intending to provide access to social justice to the tribal people.

National Commission for Scheduled Tribes:

- Article 338A provides for the National Commission for Scheduled Tribes.
- Enforced since 2004 by the 89th Constitutional Amendment Act.
- It consists of a chairman, a vice-chairman, 3 full-time members, and other members.
- It is mandatory that one of the 3 full-time members must be a woman
- It examines and directs all issues related to the constitutional rights of Scheduled Tribes.



Other facts

According to the 2011 census, there are 104 million tribals in India accounting for 8.6 percent of India's population.

The essential characteristics of these communities are:

1. Primitive Traits
 2. Geographical isolation
 3. Different culture
 4. Separation
- There are over 700 Scheduled Tribes in India, of which about 75 are Particularly Vulnerable Tribal Groups (PVTGs). Bhil is the largest tribal group.
 - Odisha has the largest number of tribal communities (62). While the largest population of Scheduled Tribes is in Madhya Pradesh – which is 21.1% of the total population of the state.

Committees formed for the improvement of the tribal community

Several committees have been formed by the government from time to time to solve various

problems of the tribal community.

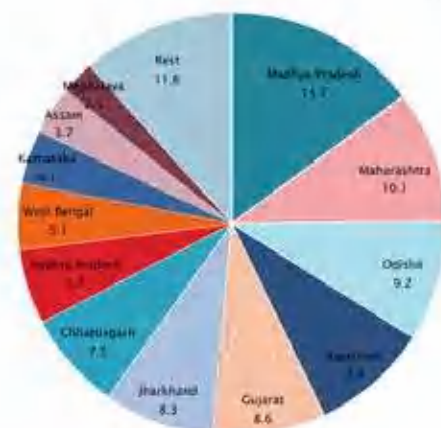
- The first Backward Classes Commission (Kaka Kalelkar Commission, 1953) appointed by the President of India under Article 340 also gave its recommendations regarding Scheduled Tribes.
- The formation of the Alvin Committee (1959) was related to the functioning of the basic administrative unit for tribal development programs.
- Lokur Committee (1965) was formed to establish criteria for defining Scheduled Tribes.
- Bhuria Committee (1991) related to PESA Act
- Munjekar Committee (2005) examined tribal governance and administration.
- Pro. Virginius Shasha (2013) related to the overall development of the tribe

Way Forward:

Even after the above efforts, the condition of Scheduled Tribes remains precarious. It is very important that the government, civil society, and environmentalists together take a concrete step in this context. In this, it is necessary to take steps for better implementation of the Forest Rights Act, dissemination of tribal education through Eklavya schools, and distribution of information and benefits obtained from biological resources with tribal communities. This will improve the health, education, and social status of the tribal community, which is very important for the development of the country.



Distribution of Scheduled Tribe Population by States - 2011



Economy

Effects, Problems & Solutions of the Increasing Population of the World

Context:

Recently a report published by the United Nations Population Fund pointed out that the global population has crossed 8 billion mark.

Introduction:

Recently, a report was published by the United Nations Population Fund in the context of the global population. According to this report, the population of the whole world has reached the limit of 8 billion. This figure is worrying in the context of climate change, water, forest and land disputes, technological advancement, etc. In these contexts the problem of population need to be resolved.

Trends in the World Population Growth:

Most populated Regions:

- More than 50 percent of the world's population lives in Asia, with China and India (each have population of over 1.4 billion) being the two most populous countries, according to the report's data.

Decreased Growth Rate:

- According to the United Nations, the world population has from 7 billion to 8 billion in the last 12 years but it will take about 15 years to reach from 8 billion to 9 billion, so in 2037 there will be a world of 9 billion population.
- According to the United Nations Population Report, the global population is growing at the slowest growth rate since 1950, which have decreased by about 1% by 2020.
- 60% of the global population lives in areas where the fertility rate is below the replacement rate. In 1990 only 40% lived in such areas.
- The United Nations Population Fund has projected that the world's population will reach 10.4 billion by 2080 and remain stable until 2100.

Regional Disparities in population:

- More than half of the world's population resides in Asia. India and China are the two largest populated countries in the world.
- The report suggests that countries with lower income levels have higher fertility rates.
- Countries such as the Democratic Republic of the Congo, Egypt, Ethiopia, India, Nigeria, Pakistan, the Philippines, and the United Republic of Tanzania will

account for most of the population growth by 2050.

- By 2050, the sub-Saharan region will also contribute substantially to the population.

Trends in international migration:

- The United Nations Population Fund reported that in the year 2020, about 281 million people made international migration. The trend of migration from South Asian countries has been observed in a very large amount.

Report's findings about India

- By 2023, India will have the largest population in the world.
- The fertility rate in India is 2.1, which is almost equal to the replacement rate and is expected to decline further in the future.
- India's population is expected to peak at 1.7 billion by 2048 and 1.1 billion by 2100.
- In 2022, 68% of India's population is between 15-64 years old, while 7% are aged 65 and above. It is clear from this that at present India's youth bulge is high, which will remain the status quo till 2030.
- According to the World Population Prospects Report 2022, currently India's population is 1.412 billion and China's population is 1.424 billion.

Problems caused by population growth

This increasing population growth will give rise to many problems which are described below.

- **Environmental stress:** Population growth will negatively affect sustainable development. The increase in population will increase the pressure on the resources, as a result of which the climate crisis may increase further. Housing, energy, and water supply for the large population will put pressure on the environment.
- **Conflict with technical enhancement:** Today we are in technological era. The world is entering the fourth industrial revolution where machines will be used in mass production through artificial intelligence, robotics, and mechanization, which is likely to reduce employment. In this situation, more population will also create pressure on economic resources.
- **Class Struggle:** Increased population can also give rise to class struggle. As we are seeing that because of the increasing population, the trend of possessing a

huge amount of resources is increasing. As a result of this, protectionist governments are being formed at the global level, for example in Chile. Due to this issue problems like protectionism, Brexit, deglobalization, trade war, and import restrictions are being seen. These problems are giving rise to class struggle.

- **Inequality:** While North America represents 16% of the world's area, its population represents only 6% of the world's population. On the other hand, Asia occupies 18% of the global area but 67% of the global population resides here. This disparity is also visible in income where North America represents 45% of the total global income while Asia only 12%. Income inequality also increases vulnerability to climate change, as a result of which Asian and African countries are more vulnerable to climate change.

Along with these problems, , war, epidemic, food security crisis, polarization, unplanned urbanization, maintenance, and housing problems occurs due to problem of population growth.

How to Solve the Issues Arising due to Population Growth?

- **Considering population growth as a global common problem:** At present, it is necessary that like climate change, population growth should also be considered a global problem, and a regulatory body should be formed for population growth similar to UNFCCC. All the rules on population growth should be made through a global treaty, whose strict compliance should be ensured.
- **Family Planning:** Family planning is a concept by which efforts are made to limit the number of children in the family by the couple. The adoption of family planning is very important for a good nation.
- **Increasing the age of marriage:** The government should increase the minimum marriageable age of boys and girls. For example, the age of boys in India has been raised to 21 years and that of girls to 21 years.
- **Focus on human resource development:** The country and society should pay attention to dimensions like education, and health. This will not only stop population growth but will also lead to economic development in the countries.
- **Efficient Land use:** Use of the flat system for housing, opposing to inappropriate trends of soil erosion during agriculture, etc. Where on one hand the housing of the population can be arranged, and the health of the people can also be improved.
- **Skill development:** Demographic curse can be converted into demographic dividend through skill

development.

Along with these steps, population growth can be stopped by efforts like investment in human capital infrastructure, use of deterrents, population policy, strict compliance, etc.

Other facts

- India has the largest adolescent population (10-19 years) With 253 million in the world.
- India's population growth is still growing at a rate of 0.7% per annum despite being stable
- The United Nations Population Fund is a subsidiary of the United Nations General Assembly, serving as its sexual and reproductive health agency.
- It was established as a trust fund in 1967. 1987 it was officially named 'United Nations Population Fund'. Its mandate is established by the United Nations Economic and Social Council (ECOSOC)



Conclusion:

After understanding the population explosion as a global disaster, many countries of the world have made better efforts for population control, which has resulted in a decrease in the global population rate. It is also clear that an increase in income reduces population growth, so it is necessary to promote development through global cooperation in economically weaker regions like the South Asian region, and the Sub-Saharan region which automatically helps in reducing population. Will be helpful.

6 Environment Role of Mangroves In Conservation Of Coastal Ecosystem: Challenges & Solutions

- Protecting the coastal ecosystems is crucial to achieve the Sustainable Development Goals. Hence, today many Heads of State around the world have become sensitive to the protection of the ecosystem. They are making national policies in this direction and also emphasizing on the international alliances.
- The recent meeting of CoP-27 in Egypt saw a remarkable consensus among nations for mangrove conservation. Many nations around the world have emphasized the role of carbon sinking by increasing mangrove cover and therefore, the Mangrove Alliance for Climate has been launched.
- **The Mangrove Alliance for Climate** is an initiative led by the **United Arab Emirates and Indonesia** and includes nations like India, Sri Lanka, Australia, Japan and Spain. The Mangrove Alliance for Climate aims to raise awareness globally about the role of mangroves in combating global warming and climate change. In other words it aims to promote mangrove conservation literacy.
- In this regard, the Minister of Climate Change and Environment of the United Arab Emirates, while expressing his country's commitment, has announced that his country strives to plant 3 million mangroves in the next two months. The nation has further stated that it had set a goal in CoP-26 to plant 100 million mangrove trees by 2030.
- Now a question arises as to why UAE and these other nations are giving so much emphasis on planting mangroves? What place do the mangroves hold when it comes to environmental protection that it became the subject of interest of nations in CoP-27?
- Actually, the mangroves represent a symbiotic relationship between the sea and the land in any ecosystem. It is a strong mode for conserving the coastal biodiversity as well as conserving the livelihood of fishermen through conservation of coastal biodiversity. They are effective basis for the conservation of globally endangered animals. Further, they form basis for the conservation of plankton, marine invertebrates, amphibians, reptiles, birds and mammals. Mangroves are also known as Tidal Forests, Coastal Woodlands, Walking Forest in the Sea, Root of the Sea and Oceanic Rain Forests.
- in tropical and subtropical intertidal areas of the world. The India Forest Report, 2019 states that these are areas with high rainfall ranging from 1,000 to 3,000 millimetres and temperature ranging from 26°C to 35°C. Mangrove ecosystems are special as they have great adaptability. Their morphology, anatomy and physiology are such that they aid these plant communities to survive in submerged soil. Further, their adaptability helps them to easily deal with high salinity, frequent cyclonic storms and tidal surges. Their roots equip them with the ability to prevent soil erosion in coastal areas.
- The characteristics that allow mangrove plants to adapt to adverse conditions include: breathing roots or pneumatophores, stilt roots, buttress roots, and viviparous roots.
- Mangroves can survive even in low oxygen conditions. The underground tissue of any plant requires oxygen for respiration. But in mangrove ecosystem, the oxygen in the soil is limited or zero.
- Hence, the mangrove root system absorbs oxygen from the atmosphere. For this reason, the roots of mangroves differ from those of common plants, and these roots are called breathing roots or pneumatophores. These roots have several pores, through which oxygen reaches the underground tissues.
- **Viviparous feature:** Roots in some mangrove species take a different path from their trunk and branches. They go some distance away from their main trunk and make their place in the soil quickly. Similar phenomenon can be seen in the banana tree.
- Any root in mangrove is called stilt roots because of its shape and the physical support it provides to a particular area of soil. These roots have several holes as well, through which atmospheric oxygen reaches the roots.
- On the other hand, when talking about the viviparous feature of mangroves, it can be understood from the fact that saline or salty water and weak saline soil without oxygen or with very little oxygen, can't provide proper environment for the seeds to germinate. To deal with this problem, mangrove species have a unique system of reproduction called vivipary. In this type of reproduction the seeds germinate and develop into seedlings while still attached to their parent tree. These seedlings are commonly called propagules and they photosynthesize while being attached to their mother tree.

How Does Mangroves Survive in Salt Water:

- Mangroves are salt tolerant plant communities found

- The mature seedling falls into the water and becomes strongly rooted in the solid ground at a different place.

Mangroves Are Means Of Storing Blue Carbon:

- Mangroves account for less than 2 percent of the marine ecosystem, but they sequester 10-15 percent of carbon. Once the leaves and old trees die, they fall on the sea floor and the stored carbon gets buried in the soil. This buried carbon is known as “blue carbon” because it is stored underwater in coastal ecosystems like mangrove forests, sea grasses, and salt marshes.



Mangrove Conservation in India:

- In India, the initiatives for mangrove conservation and promotion of these initiatives are being taken up at both governmental and non-governmental levels. The government has taken steps by rewarding as well as taking regulatory measures to conserve and promote forests in the country. Efforts are being made to spread awareness under the National Coastal Mission program on the conservation and management of mangroves and coral reefs.
- Under this, Annual Action Plan for mangrove conservation and management has been implemented in all the coastal states and union territories. In this regard, the five wetlands of India have been recognized as wetlands of international importance by Ramsar

few months back, they include the Pichavaram mangrove area of Tamil Nadu.

- The Ministry of Environment, Forest and Climate Change is implementing the Integrated Coastal Zone Management Project in the three states of Gujarat, Odisha and West Bengal with the objective of conserving coastal resources, these activities especially include the plantation of mangroves. In addition, a dedicated mangrove cell has been set up in Maharashtra for mangrove conservation.
- Furthermore, the mangroves play a crucial role in global conservation efforts. India might have more than 50 species of mangroves spread over 5000 square kilometres. The nation is stressing on conservation and restoration of mangroves. This will preserve biodiversity rich sites and they will continue to act as an effective carbon sink.

Regarding the mangrove forest cover in India:

- As per the India Forest Status Report, 2019, the mangrove cover in India is 4,975 sq km. which is 0.15 percent of the total geographical area of the country. In terms of percentage, the total mangrove cover area is highest in West Bengal. It is followed by Gujarat and Andaman and Nicobar Islands. Sundarban in West Bengal is the largest mangrove forest area in the world. They are listed as a UNESCO World Heritage Site.
- Sundarban is home to the Royal Bengal tiger, Gangetic dolphin and estuarine crocodile. The second largest mangrove forest in India is located at Bhitarkanika in Odisha, which is formed by two river deltas of the Brahmani and Vaitarni rivers. It is one of the most important Ramsar wetlands in India. The Godavari-Krishna mangrove belt is extended from Odisha to Tamil Nadu.
- Further, the deltas of the Ganga, Mahanadi, Krishna, Godavari and Kaveri rivers have mangrove forests. Similarly, the backwaters of Kerala have a high density of mangrove forests. In Pichavaram of Tamil Nadu, the water covered with mangrove forests is spread over a wide area. It is home to many aquatic bird species. West Bengal accounts for 42.45 percent of India's mangrove cover, followed by Gujarat at 23.66 percent and the Andaman and Nicobar Islands at 12.39 percent.

6 Social Issues

Live-In Relationship: Personal Freedom Or Moral Dilemma

India is a country of cultures where culture is deep rooted in food, living, language, cloths etc. Indian culture and society are changing with the times. The gruesome murder of Shraddha by her live-in partner Aftab shook the very soul of society and reignited the debate on morality of live-in relationship. Although live-in relationship is making its way among the youths of the country but it is not a new concept. In historical times, marriage by probation was quite a popular thing whereby the groom enters into the house of girl for a certain period. During this period they can test each other's potentialities, courage and understanding. If they were satisfied from each other, marriage ceremonies might be arranged, otherwise the man leave the house of the girl by paying some compensation. During this prohibition if a child is borned, it would belong to mother. It is even practised today by some tribes.

Live-in relation i.e. cohabitation is an arrangement whereby two people decide to live together on a long-term or short term basis in an emotionally and/or sexually intimate relationship with or without intention of marrying in future. The term is most frequently applied to couples who are not married.

Different aspects of live-in Relationship:

➤ It provides the freedom to have the feel of conjugal life without any restrictions as imposed by marriage. Thus one may have her personal space and be herself without the need to please the in-laws or extended families. It is easy to move in and out of relationship. One may leave when things aren't working out. Also it is easier to change partners when you are not satisfied with the current one. On the contrary, marriages are considered as a "sacrament" in some religions, something "made in heaven" and to be continued for seven lives (saat janam). Moreover due to legality of marriage, it is difficult and time consuming to get a divorce. It provides for rehearsal of married life. The couple gets to know about each other's common interests and views on different matters. It builds trust and basic understanding between them and serves as a tool to check compatibility. It is more

gender inclusive. Men and women treat each other as equals and share domestic as well as financial responsibilities. By advocating for women's rights, it erodes the notion of patriarchy and male domination in marriages. Mostly working, high aspiring people enter into live-in relationship as it provides for career progression and financial security before marriage. It opens a window for LGBTQ, inter-caste and inter-religious couple to live together which is otherwise against the norms of society.

➤ Living with someone before marriage is considered a taboo in India. Marriage in India corresponds to virginity especially of women. A woman living with her partner before marriage is seen as impure and unholy. Thus it is against the norms and values of society. Since it is easier to dissolve, it is highly unstable and marred with insecurity. Moreover due to lack of commitment, partners may escape taking responsibility towards each other. Due to its flexible character, a person may have multiple partners at the same time even without acknowledging. It brings mental agony and depression to the loyal one. In the wrong hands, it may even serve as a tool to extract resources and take sexual advantages. Women in this case are more vulnerable since they have less legal remedies as compared to a married women.

➤ It poses a question on the future of child born out of live-in relationship. In a conjugal family, responsibilities are shared and the child is properly taken care of. Grandparents are much excited and concerned about their grandchildren. Even when both the parents are working, grandparents look after the child. However in live-in relationships, nobody is interested to take this task.

Supreme Court's ruling on live-in relationships:

➤ In Patel and other cases, the Supreme Court observed that live-in-relationship between two adults without a formal marriage cannot be construed as an offence. It also stated that there is no such statute which postulates that live-in relationships are illegal. The same proposition was upheld in the case of Tulsa Vs.

Durghatiya, where the long term live-in-relationship was recognised as equivalent to marriage. In *Khushboo vs Kanniammal* the opinion of the Supreme Court has further provided a positive impetus to live-in relationships. The case of the prosecution was that the comment of the actress Khushboo allegedly endorsing pre-marital sex will adversely affect the moral fabric of society. A three judge bench observed that living together is not an offence.

- Adding feather to the cap, the Supreme Court of India in *D.Velusamy v D.Patchaiammal* differentiated between “live-in relationship” and “relationship in the nature of marriage” and laid conditions for women seeking maintenance in live-in- relationship. In the judgement, SC opined that in order to get maintenance, a woman, even if not married, has to fulfil the following four requirements:

1. The couple must hold themselves out to society as being akin to spouses.
2. They must be of legal age to marry.
3. They must be otherwise qualified to enter into a legal marriage including being unmarried.
4. They must have voluntarily cohabitated and held themselves out to the world as being akin to spouses for a significant period of time.

- The court further stated that a “relationship in the nature of marriage” under the Domestic Violence Act 2005 must also fulfil the above requirements, and in additions the parties must have lived together in

a “shared household” as defined in Section 2(S) of the Act. Merely spending weekends together or a one night stand would not make it domestic relationship. It further elaborated, “In our opinion not all live-in relationships will amount to a relationship in the nature of marriage to get the benefit of the Act of 2005.

- Similarly the other major concern was deciding the legitimacy of the children born out of live-in relationship, once again the Supreme Court highlighted the plight of children born out of live-in relationship in the case of *Uday Kumar vs Ayesha & others* and stated that children born out of prolonged live-in relationships could not be termed illegitimate. This judgement has overshadowed all the earlier understanding regarding the legitimacy of the children born out of live-in relationships.
- Hence, though more or less uniformity has been exuded in a positive direction by the court when it comes to live-in-relationship.

Way Forward:

Since right to live with a person of his/her choice is intrinsic to right to life and personal liberty under Article 21, live-in relationships couldn't be wholly regulated. However one may exercise due caution while choosing one's partner. One should discuss with his/her parents before taking such a big and important decision of life.


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7234000501 / 02

1 NCW Launches Digital Shakti 4.0

Why in News:

The National Commission for Women (NCW) launched the fourth phase of the Digital Shakti Campaign, a pan-India project on digitally empowering and skilling women and girls in cyberspace.

NCW launched this campaign in collaboration with CyberPeace Foundation and Meta.

About the Digital Shakti Campaign:

- The campaign was launched in June 2018 to help women across the country to raise awareness levels on the digital front.
- Through this project, over 3 lakh women across India have been made aware of cyberspace safety tips and tricks.
- It is helping women in reporting and redressal mechanisms, data privacy, and usage of technology for their benefit.
- In the third phase of the campaign, which was launched in March 2021 at Leh, a Resource Centre was developed to provide information on all the avenues of reporting in case a woman faces any cybercrime.

Digital Shakti 4.0:

- The fourth phase is focused on making women digitally skilled and aware of standing up against any illegal/inappropriate activity online.
- Digital Shakti has been accelerating the digital participation of women and girls by training them to use technology to their advantage and keep

themselves safe online.

National Commission for Women (NCW)

- NCW was established in 1992 as a statutory body under the National Commission for Women Act, 1990. The current chairperson of NCW is Ms. Rekha Sharma.
- It has the powers of a civil court.
- It looks into complaints and takes sou-motu notice of matters relating to deprivation of women's rights, non-implementation of laws and non-compliance of the policy decisions regarding the welfare for women society.

The Key Functions of NCW include:

1. Review the constitutional and legal safeguards for women.
2. Recommend remedial legislative measures.
3. Facilitate redressal of grievances.
4. Advise the Government on all policy matters affecting women.

Way Forward:

Digital Shakti will contribute towards achieving the larger goal of fighting cyber violence against women and girls, while simultaneously making internet a safer place for them. This will strengthen the Commission's continuous effort to empower women in every aspect across the nation.

2 On Religious Conversion, SC Must Set the Bar High

Why in News:

Over the last few years, religious conversion has become a politically fraught issue. While hearing a PIL on religious conversion, the Supreme Court said that "forced" religious conversions are "very dangerous" and may "ultimately affect the security of the nation as well as the freedom of religion and conscience of the citizens".

Background of Anti Conversion Laws:

- Princely states headed by Hindu royal families were the first to introduce laws restricting religious

conversions during the British colonial era, especially during the latter half of the 1930s and 1940s.

- Madhya Pradesh, Uttar Pradesh and Himachal Pradesh passed anti-conversion laws that outlaw religious conversion solely for the purpose of marriage.
- Uttar Pradesh Prohibition of Unlawful Conversion of Religious Ordinance, 2020 also requires a 60-days-notice. However, it also requires the Magistrate to conduct police inquiry to ascertain the real intention behind the conversion

- Under the MP law, the burden of proving that the conversion was done in a legitimate fashion lies with the person converted.

Key Points:

- The bench urged the government to “make their stand clear and file counter on what steps can be taken by Union and/or others to curb such forced conversion, maybe by force, allurements or fraudulent means”.
- When the court singles out the issue for its attention, asks what action the government proposes to take, it implies both that “forced” religious conversions are a significant problem and that existing laws are insufficient to deal with it.
- Article 25 of the Constitution says “all persons are equally entitled to freedom of conscience and the right freely to profess, practise and propagate religion”.
- But at least 10 states have legislated anti-conversion laws, beginning in the 1960s.
- The claim is that legal safeguards, including IPC provisions, have failed to stop religious conversions through “coercion”, “intimidation”, “allurement”, “threats”. However, these are loosely worded terms prone to misinterpretation.
- The current context of the conversion debate appears to be missionary activity in tribal areas and inter-religious marriages, labelled as “love jihad”.

3

Juvenile Justice Act, 2015

Why in News:

Supreme Court noted that lenient juvenile law has increasingly emboldened juveniles to commit heinous crimes and it is for the government to re-examine the law. While giving a decision on murder and rape of 8 year old girl, court said that juvenile will be treated as adult for heinous crime. The court expressed doubts whether the Juvenile Justice Act, 2015 has become a safety net for juvenile offenders to commit heinous crimes with provision of lesser punishment.

Current status of Juvenile Justice Act (JJ Act):

- Under the Juvenile Justice Act, offences are classified into ‘petty offences’ [Section 2 (45)], ‘serious offences’ [Section 2 (54)], and ‘heinous offences’ [Section 2 (33)]. Children are differentially treated as per the category of offence they are alleged to have

Judgments on the basis of such laws:

- **Salamat Ansari-Priyanka Kharwar Case:** The right to choose a partner or live with a person of choice was part of a citizen’s fundamental right to life and liberty (Article 21).
- **Hadiya Case:** Matters of dress and of food, of ideas and ideologies, of love and partnership, are within the central aspects of identity. Neither state nor the law can dictate a choice of partners or limit the free ability of every person decide on these matters
- **Sarla Mudgal Case:** The court had held that the religious conversion into Islam by a person from non-Islamic faith is not valid if the conversion is done for the purpose of polygamy.

Conclusion:

The judiciary can do well by putting forth the principle that every citizen is free to take actions that are not harmful to oneself and others. However, the bar for action against “fraudulent” conversions has to be set high so that it does not interfere with fundamental freedoms. A judicial and judicious intervention on religious conversion must be mindful of the context, avoid vague terminology and carefully sidestep prejudice.

committed. A child above 16 years of age who is alleged to have committed a heinous offence, may be waived by the Board into the criminal justice system after conducting a preliminary assessment [Section 15 (1)].

- Under the preliminary assessment, the assessment of child’s ‘mental and physical capacity to commit such offence, ability to understand the consequences of the offence and the circumstances in which he/she allegedly committed the offence’ is done. On completion of Preliminary Assessment, the Board may handle the case under the JJ Act [Section 15(2)], or may pass an order to treat the child as an adult and transfer the matter to the Children’s Court [Section 18(3)]. Sessions Court has been designated as Children’s Court to handle such cases. Children’s Courts are empowered to decide whether a child

produced before it should be treated as an adult under the criminal justice system or a child in conflict with the law under the juvenile justice system and conduct an inquiry as a Board' (Section 19).

- On conclusion of trial of a child treated as an adult, the Children's Court on finding him guilty, should pass an order considering the special needs of the child, the tenets of fair trial and maintaining a child friendly atmosphere' [Section 19 (1) (i)]. A child cannot be 'sentenced to death or for life imprisonment without the possibility of release' (Section 21).
- A child sentenced by the Children's Court is to undergo his sentence in a place of safety till he/she attains 21 years of age, at which stage an evaluation of such child is to be conducted to ascertain whether he/she has 'undergone reformatory changes and if the child can be a contributing member of the

society' [Section 20 (1)], and on found to be so, the Children's Court releases the child on conditions [Section 20 (2) (i)], and if not, the child is transferred to jail to complete the remainder of his/her term [Section 20 (2) (ii)].

Conclusion:

The judicial observation on analysing the provisions of the JJ Act is not entirely correct. The Juvenile waiver System exists in the Act so to say that it is liberal proves itself wrong. When the Bill was introduced in Parliament, several child welfare organizations criticized the juvenile waiver system for being against child rights. Thus, it can be said that JJ Act is a tough act in itself and reformatory approach for child welfare should continue.

4 Network Readiness Index 2022

Why in News:

India has improved its position by six slots and is now placed at 61st rank as per the recently released Network Readiness Index 2022 Report (NRI 2022).

Network Readiness Index 2022 Report:

- The report is prepared by the Portulans Institute, an independent non-profit, non-partisan research and educational institute based in Washington.
- It measures how well an economy is using information and communications technologies to boost competitiveness and well-being.
- In its latest version of 2022, the NRI Report has mapped the network-based readiness landscape of 131 economies.
- The NRI ranks on the basis of four different pillars: **Technology, People, Governance & Impact**, covering a total of 58 variables.
- The index measures in terms of both social and economic impact. It shows how a country is to reap the benefits of transition into the Fourth Industrial Revolution.

Findings of NRI-2022:

- The United States ranked first with a total score of 80.3 followed by Singapore (79.35) and Sweden (78.91)
- Singapore has seen the quick improvement from

rank 7 in 2021 to rank 2nd in 2022.

- Top 10 performers are Netherlands (4th), Switzerland (5th), Denmark (6th), Finland (7th), Germany (8th), South Korea (9th) and Norway (10th).

Performance of India in NRI:

- India has improved its score from 49.74 in 2021 to 51.19 in 2022.
- India secured-
 1. 1st rank in "AI talent concentration",
 2. 2nd rank in "Mobile broadband internet traffic within the country" & "International internet bandwidth"
 3. 3rd rank in "Annual investment in telecommunication services" & "Domestic market size"
 4. 4th rank in "ICT Services exports"
 5. 5th rank in "FTTH/Building Internet subscriptions" & "AI Scientific publications"
- The report states that India has a greater network readiness than would be expected given its income level.
- India is ranked 3rd out of 36 in the group of lower-middle-income countries after Ukraine (50) and Indonesia (59). It scored higher than the income group average in all pillars and sub-pillars.
- India ranked 11th within the Asia and Pacific region.

Way Forward:

The report aims to alert the policy makers to identify strength and weaknesses that could be addresses, and

help them make strategic decisions and take appropriate action.

5**Draft Aircraft Safety Rules 2022****Why in News:**

The Ministry of Civil Aviation has notified the Draft Aircraft Safety Rules, 2022.

About the Aircraft safety rules:

- The rules will supersede Aircraft Security Rules, 2011 and were necessary after Parliament passed Aircraft Amendment Act, 2020 in September 2020, giving statutory powers to BCAS, along with the Director General of Civil Aviation and Aircraft Accident Investigation Bureau.
- The draft Aircraft Security Rules, 2022 will enable the Bureau of Civil Aviation Security (BCAS) to impose fines of Rs. 50 lakh to Rs. 1 crore at airports and airlines (depending on company size) for violation of security measures. The BCAS can impose fines on airports and airlines-
 - » if they fail to develop and implement a safety program, or
 - » If they start operations without seeking security clearance.
- Individuals will also face penalty ranging from Rs. 1 lakh to 25 lakh depending on the nature of the offence.
- The BCAS will also be able to suspend or cancel the airport security clearance and security program of an entity.
- The rules also require every entity to protect its

information and communications technology systems from unauthorized access and prohibit the disclosure of sensitive aviation security information.

- This will help organizations deal with cyber security threats.
- The rules authorize airports to appoint private security agents instead of CISF personnel in “non-core areas” and delegate security duties as recommended by the National Civil Aviation Policy, 2016.

Need of Amendment:

- The amendment was needed after the United Nations’ aviation watchdog, the International Civil Aviation Organization (ICAO), raised questions about the three regulators operating without statutory powers.
- The Aircraft (Amendment) Bill 2020 amended the Aircraft Act of 1934 to recognize the Directorate General of Civil Aviation (DGCA), Bureau of Civil Aviation Security (BCAS), and Aircraft Accident Investigation Bureau (AAIB) as statutory organisations.

Conclusion:

Once the Aircraft Security Rules 2022 come into force, they will go a long way in ensuring an effective aviation security apparatus in the country.

6**No Shave November–Cancer Awareness Movement****About No Shave November:**

- No Shave November is an initiative that comes out every year with the onset of winter. In which a person does not perform shaving/grooming activities but allows them to grow with the aim of raising cancer awareness.

How it started?

- This tradition was there for many years. But in

2009 the children of the Chicago-based Hill family decided to restart it as a way to raise money for charity after their father, Matthew Hill, was a colon cancer patient. Who died in November 2007.

- Currently an organization named Matthew Hill Foundation is working for this.
- According to the No Shave November website, participants embark on a month-long journey to talk about cancer and raise awareness about it.

Objective of the No Shave November Movement:

- It encourages men to go for shaving, not grooming, as women do not have wax and other women oriented grooming methods and the money that is saved throughout the month is donated to charity.
- The money collected is then used to create awareness about cancer, cancer prevention, cancer education and research.
- One such initiative is **Movember**.

What is Movember:

- Movember is one such initiative which is based on men growing their mustache in the month of November. The movement was started in Australia by two friends, Travis Garron and Luke Slattery, with the aim of reviving the mustache trend.
- It talks about various health problems faced by men including prostate cancer, mental health issues, testicular cancer. Both men and women can participate in the Movember community, who are called Mo Brothers and Mo Sisters, respectively. The movement suggests several other ways to participate besides growing a mustache. Some of them run 60 km throughout the month or host the moment/event regarding the walk etc.

How successful are these movements?

Both the “No Shave November” and “Movember” initiatives have gained immense popularity globally.

- According to the ‘No Shave November’ website, the initiative has been able to raise nearly \$12 million for cancer awareness, research and prevention.
- On the other hand, according to the latest data from Movember, six million Mo Bros (male participants) and Mo Sisters (female participants) registered participation in 2021 and collectively they were able to raise approximately \$87.9 million.

Work done by India in this Field:

- The National Programs for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS) are being implemented up to the district level.
- The Central Government has also set up a National Cancer Grid (NCG). In August 2022, the National Cancer Grid established the Koita Center for Digital Oncology (KCDO) with an aim to promote the use of digital technologies and tools to improve cancer care across India.

7

Election Commission of India

Why in News:

- In a recent ruling, the SC Bench was examining a series of petitions seeking functional independence for Election Commissioners. The Supreme Court questioned the independence of election commissioners, and said that the terms of chief election commissioners have fallen from 8 years in the 1950s to less than 300 days since 2004.
- The top court was challenging the constitutionality of the present appointment process of CEC and ECs and contended that appointments were being done as per the whims of the executive.

Observation by SC about Election Commissioners:

- The Constitution of India has vested vast powers

on the shoulders of the CEC and the 2 Election Commissioners.

- Apart from qualification, the character is important, so that those appointed as election commissioners maintain their independence.
- The court said ‘Article 324’ of the Constitution, dealing with the appointment of election commissioners, had envisaged the enactment of a law to provide for the procedure for such appointments, but the government had not done this yet.
- In the absence of a law to monitor such appointments, the silence of the Indian Constitution is being taken for granted by the governments.
- The chief election commissioner and other election commissioners hold office for a term of six years or

until they attain the age of 65 years, whichever is earlier.

- The government chooses someone close to 65 years and later gives an assurance that the nominated person was not eligible for the full six years of service which undermines the independence of the Election Commission

Government's view:

- There is no vacuum in the constitution on this issue.
- If the constitution takes a position despite the many views put forward by the original Constituent Assembly, then that position cannot be opposed.
- The separation of powers cannot be challenged as it is the basic feature of the constitution.

- This matter is for debate in Parliament and not for the court.

Suggestions given by SC:

- The SC suggested a system where there is presence of the Chief Justice of India in the appointment committee, will be the least intrusive.

Conclusion:

- A CEC, who is of a similar calibre to TN Seshan, is needed to ensure free and fair elections and strengthen democracy in India. Although such personalities are rarely seen, appointments without bias can reinforce this impression.



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1 19th ASEAN-India Summit

Why in News:

Recently the Vice President of India Jagdeep Dhankhar addressed the 19th ASEAN-India Summit in Phnom Penh. This year marks the 30th anniversary of ASEAN-India relations. It is being celebrated as ASEAN-India Friendship Year.

About ASEAN:

- The Association of Southeast Asian Nations (ASEAN) is a regional organization that brings together the disparate neighbours to address economic and security issues. It was established in Bangkok, Thailand in August 1967 with the signing of the Asian Declaration (Bangkok Declaration) by the founding countries of Asia, Indonesia, Malaysia, the Philippines, Singapore, and Thailand.
- Its presidency is held annually on the basis of the names of the member states in alphabetical order.
- Their combined gross domestic product (GDP) is \$3.5 trillion.

Member Countries

- Brunei, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand and Vietnam.

Important points:

- The summit acknowledged the deep civilizational ties, maritime links, and cross-cultural exchanges between Southeast Asia and India, which provides a strong foundation for ASEAN-India relations.
- It discussed ways to enhance bilateral ties, including in areas such as human resources, de-mining, and development projects.
- India and ASEAN countries announced to enhance cooperation in digital economy through regional

capacity building activities in digital transformation, digital business, digital skills and innovation, as well as hackathons.

- The nations envisaged to promote cooperation in smart agriculture using new technologies to develop resilient and sustainable food supplies for the future.
- ASEAN and India will strengthen healthcare by increasing cooperation in public health (including in the areas of research and development and public health emergencies).
- The summit called for expediting the review of the ASEAN-India Trade in Goods Agreement (AITIGA) to promote trade-facilitation and integration.
- Promote ASEAN-India cooperation in the space sector, including setting up of tracking, data reception and processing stations in Vietnam and Indonesia, and encourage cooperation between ASEAN and Indian space industry players, including new areas of cooperation.
- ASEAN countries and India sought to strengthen cooperation on cyber security by setting up new dialogue forums.
- India along with ASEAN countries decided to revive tourism and related industries, which have been affected by the COVID-19 pandemic, through effective tourism action plans.

Way Forward:

India-ASEAN relation is the central pillar for India's Act-East policy. India's trade with Asian countries has grown faster than India's trade with the world. But this is currently limited by significant non-tariff barriers in Asia. India can further strengthen its relations with ASEAN countries by increasing trade and investment by focusing on new investment plans, upgrading skills, improving transport infrastructure, etc.

2 Drug-free Childhood Global Meet

Why in News:

A three-day global conference on "Right to a Drug-Free Childhood" was organized in Thiruvananthapuram, Kerala by Fourth Wave Foundation in collaboration with United Nations Office on Drugs and Crime (UNODC) and World Federation against Drugs (WFAD).

Theme: "Children Matter- Right to a Drug-Free Childhood"

About the Conference:

- The conclave seeks to shed light on the causes that lead to substance abuse by children and to work out

policies and protocols that could be adopted by the governments.

- The session was addressed by Ministry of Social Justice and Empowerment's Joint Secretary and witnessed the participation of civil society members, policymakers, members of national and state commissions on child rights, government representatives, professionals and youth leaders from across the globe.

Icelandic Model- Key topic at the conference:

- Icelandic Model seeks to intervene in bringing teenagers affected by drug use disorders back to normal life.
- It strives to give a new lease of life to drug-addicted children by channelizing their energy to creative pursuits like sports and other avenues.
- It does so by collaborating with stakeholders like parents, teachers and sports club.
- At present, Iceland stands first on the European list of de-addicted teenagers.

VENDA (No to Drugs):

- It is an initiative started by the Fourth Wave Foundation which strongly advocates the 'alternative pursuit' model in Kerala on the lines of Icelandic Model.
- Major activities under VENDA include empowerment programmes for children, football training, summer camp, football tourney 'Venda Cup' and awareness classes for parents, teachers, counsellors, police and excise officials.
- VENDA is active in districts that have high number of drug-addicted teens found by National Action Plan for Drug Demand Reduction (NAPDDR) survey conducted by the Narcotic Control Bureau.

Way Forward:

The issue of drug menace is on rise. To solve this, there is a need of long-term strategic intervention including all the community stakeholders. The global conference will educate and empower the youth to advocate for their rights, work towards rehabilitation and social cohesion of children, as well as highlight the role of family and school in working with children.

3

Global Anti-Terror Conference and Role of State Actors

Why in News:

Ministry of Home Affairs, Government of India organised the 3rd Ministerial 'No Money for Terror' (NMFT) Conference on the 18th and 19th of November in New Delhi. The conference highlights India's efforts towards the issue of international terrorism and zero tolerance policy against the menace.

Key Highlights:

The conference is part of India's concerted efforts to advance global leadership against terrorism and prevent its spread. This international "No Money for Terror" conference, along with the special UNSC briefing (which will take place in December), is part of a series of measures the government is taking to keep pace with the recently convened Counter-Terrorism Committee (CTC). The third edition of the conference was inaugurated by the Prime Minister of India and was attended by ministers from 20 countries and more than 78 nations and multilateral organizations.

The sessions:

- Global Trends in Terrorism and Terrorist Financing.

- Use of Formal and Informal Channels of Funds for Terrorism.
- Emerging Technologies and Terrorist Financing.
- International Co-operation to Address Challenges in Combating Terrorist Financing.

Agenda of the conference:

India strived to draw global attention towards issues such as-

- Lack of universal consensus on laws regarding cybercrimes.
- Weak control of social media platforms and their misuse by terrorist and extremist groups.
- Dark web and crypto-currency related issues.
- Crowdfunding along with anonymous, decentralized and untraceable nature of terror financing.
- Focus on effective multilateral and multi-stakeholder approaches in identification and mitigation of threats of emerging terror-financing mechanisms.
- Deliberation on misuse of non-profit and non-government organizations as front structures for financing terror activities.

About NMFT conference:

It is a collaborative initiative of the international community that was held for the first time in Paris in 2018. Subsequently, the 2nd edition of the conference was held in Melbourne in 2019.

Aim of the conference:

- It aims to progress the discussions on combating terrorist financing.
- It also intends to include discussions on technical, legal, regulatory, and cooperation aspects of all

facets of terrorism financing.

Way Forward:

The adaptability and opportunism shown by terrorist organizations is highly sophisticated; only accurate and well linked financial intelligence can reveal the structure of terrorist groups as well as the activities of individual terrorists. Further, there needs to be a global consensus on how to curb terror financing and concerted efforts should be made by all the International and national stakeholders.

4

UK-India Young Professional Scheme

Why in News:

At the 17th edition G-20 summit, in Bali, British Prime Minister Rishi Sunak announced the country's partnership with India, with the UK-India Young professional scheme on 16 November 2022.

What is the UK-India Young Professional Scheme?

- Under the U.K.-India Young Professionals Scheme, the U.K. will annually offer 3,000 degree-holding Indians, between the 18 to 30 age groups, jobs in the U.K. for up to two years.
- Beginning in early 2023, the programme will operate on a reciprocal basis where British nationals will be granted similar offer in India

Significance of the UK-India Young Professional Scheme:

- Compared to nearly all other nations in the Indo-Pacific region, the United Kingdom has more links with India.
- Nearly one-quarter of all foreign students in the UK are Indian, and 95,000 employment are supported by Indian investment there.
- The U.K. government described the program's debut as a "significant moment" for both the U.K.'s relationship with India and its links to the Indo-Pacific region
- India will be the first visa country to be benefitted from this scheme which will further highlight and consolidate the UK-India migration and mobilisation partnership that was agreed upon last year.

difficult for the two nations to pursue a sensible relationship. However, the India-UK relationship has been showing an improving trajectory after the signing of a Comprehensive Strategic Partnership in 2021.

- A 2030 Roadmap for India-UK Relations is also established under the agreement, which largely sets the partnership goals for the two countries relations.
- UK being a prominent member of G-7, G-20, APEC, etc. can prove essential for India's Strategic and Economic Interest.
- UK recently supported creation of new permanent seat in United Nations for India, Germany, Japan and Brazil and called for expansion in both permanent and non-permanent categories.
- Further, both nations are committed to rapidly work on free trade agreement (FTA) which were earlier put to a halt due to certain statements from Britain's cabinet minister.

Conclusion:

In varied discussions between the Prime ministers of India and the UK at the G-20 summit, several important issues were discussed which included security cooperation as well. Although, UK prime minister has made it clear in his statement that the nation is in no hurry to conclude the trade agreement as he would not compromise with 'quality over speed', the UK-India Young Professional scheme is the perusal of what is to come in the future.

UK-India relationship:

- Although after imperialistic colonisation it was

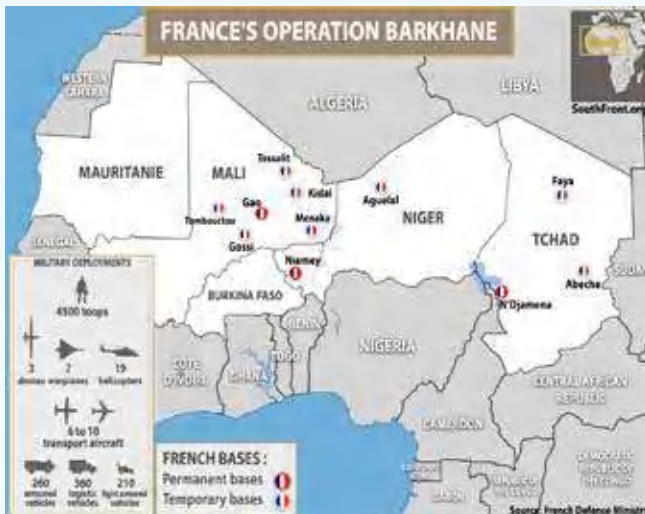
5 France ends Operation Barkhane

Why in News:

At the end of a recent long press conference, Emmanuel Macron announced a significant change in French policy in the Sahel, ending the decade-long Operation Barkhane in Africa with the pan-Sahelian Operation Barkhane in its current form. Has gone.

What is Operation Barkhane?

- Operation Barkhane was an anti-insurgency operation that began on 1 August 2014.
- France launched Operation Serval in January 2013 in the Sahel of North Africa. The operation was limited to countering Islamic extremists linked to al-Qaeda who have taken control of northern Mali.
- In 2014, Operation Serval was scaled up and renamed as Operation Barkhane.



Objective of Operation Barkhane:

- The objective of the advanced operation was to assist local armed forces in preventing a resurgence of non-state armed groups in the Sahel region. It was led by French forces against Islamist groups in the Sahel region of Africa. The operation was led by a collaboration of five countries, all of which are former French colonies that extend to the Sahel. It launched counter-terrorism operations in Mali, Niger, Burkina Faso, Mauritania and Chad. As part of this mission, approximately 4,500 French personnel were

deployed with the local Joint Anti-Terrorism Force.

- The operation was named after the crescent-shaped dune type that is common in the Sahara Desert.
- The French military operation in the Sahel had two goals:
 - » Free Mali from rebels in the north
 - » Neutralize key terrorists in West Africa using counter-terrorist operations

Achievements of Operation Serval:

- In 2014, French-led forces were able to recapture northern parts of Mali from extremists.
- In 2020, two prominent leaders of al-Qaeda in the Islamic Maghreb and the al-Qaeda-affiliated Groupe de Soutien à l'Islam et aux Musalmans were neutralized.

The success of Operation Serval led to Operation Barkhane. But this operation saw a series of failures such as:

- Rise of new groups linked to terrorist organizations like Islamic State.
- The failure of the operation to combat terrorism led to a humanitarian crisis.
- In the first half of 2022, there were 5,450 deaths due to violence in Mali, Burkina Faso and Niger. This is a significant increase compared to previous years.
- More than 2,000 incidents of Islamist violence were recorded in the Sahel in 2021.
- Civilian support for the military has increased political uncertainty in the Sahel due to its failure to resolve the region's insurgency.
- French army failed to suppress the jihadists.

The result of this operation was inconclusive. In place of this operation, a new international coalition with significant French contribution and leadership has assumed responsibility for counter-terrorism operations and security force training and assistance in the Sahel.

6

India to take over Chair of Global Partnership on AI from France

Why in News:

India has taken over the Chair of the Global Partnership on Artificial Intelligence, GPAI from France on November 21. Minister of State for Electronics and Information Technology Rajeev Chandrasekhar represented the country at the GPAI meeting in Tokyo for the symbolic takeover from France. This development comes on the heels of assuming the Presidency of the G20, a league of the world's largest economies.

Artificial Intelligence:

Artificial intelligence (AI) refers to the simulation of human intelligence in machines that are programmed to think like humans and mimic their actions. The term may also be applied to any machine that exhibits traits associated with a human mind such as learning and problem-solving.

About the Global Partnership on AI

GPAI is an international initiative to support responsible and human-centric development and the use of Artificial Intelligence. GPAI is a congregation of 25 member countries, including the US, UK, European Union, Australia, Canada, France, Germany, Italy, Japan, Mexico, New Zealand, South Korea, and Singapore. India joined the GPAI in 2020 as a founding member. India occupying the chair also signifies how the world

today perceives it as a Trusted Technology partner and one that has always advocated for the ethical use of technology for transforming citizen's lives.

Future economy of artificial intelligence in India

Artificial Intelligence is expected to add 967 billion US dollars to the Indian economy by 2035. It is also expected to add 450 to 500 billion US dollars to India's GDP by 2025 accounting for 10 per cent of the country's 5 trillion dollar GDP target.

Conclusion:

Artificial intelligence has been responsible for drastic changes in the technology sector where it can greatly improve productivity through process simplification and automation. It is also an integral part and one of the fundamental bases of Industry 4.0. NITI Aayog came out with an AI strategy in the 2018 and India became one of the first countries to talk about the use of artificial intelligence to address inclusion and social challenges. The adoption of AI has to be accelerated across all relevant sectors and value chains. The future of AI will be decided by a diverse group of stakeholders like researchers, private organisations and citizens.

7

Canada's Indo-Pacific Strategy

Why in News:

Canada has launched its long-awaited Indo-Pacific strategy, outlining spending US\$1.7 billion to boost military and cyber security in the region.

About Strategy:

- The strategy is designed to deal with a "disruptive" China while working with it on climate change and trade issues. According to the strategy, Canada will tighten foreign investment rules to protect intellectual property and prevent Chinese state-owned enterprises from siphoning off vital mineral supplies. The strategy is critical to Canada's national security and climate, as well as its economic goals.
- The strategy outlines five interrelated strategic

objectives:

- » Promoting peace, resilience and security
- » Expand trade, investment and supply chain flexibility
- » Invest and connect people
- » Build a sustainable and green future
- » Canada as an Active and Engaged Partner for the Indo-Pacific

Importance of India in the Strategy:

- India's growing strategic, economic and demographic importance in the Indo-Pacific makes it an important partner in Canada's pursuit of its objectives under this strategy. Canada and India have a shared tradition of democracy and pluralism, a common

commitment to a rules-based international system and multilateralism, a mutual interest in expanding our commercial ties, and broad and growing people-to-people ties.

Strategy Wise –Cooperation Aspect with India:

- enhance economic ties, including through deeper trade and investment as well as cooperation on building resilient supply chains
- Canada seeks to expand market access by signing Early Progress Trade Agreement (EPTA) as a step towards Comprehensive Economic Partnership Agreement
- A Canada-India desk will be created within the Trade Commissioner's Service to promote the implementation of the EPTA for businesses and investors seeking to enter the Indian market or partner with Indian businesses
- Strategy includes investment and people-to-people expansion, expanding Canada's visa-processing

capacity in New Delhi and Chandigarh

- The strategy also includes supporting academic, educational, cultural, youth and research exchanges
- Accelerating cooperation in the fight against climate change, protecting the environment and implementing green technologies under the Strategy
- Sending Team Canada advanced trade missions to priority areas of mutual interest, such as renewable energy and clean technology

Conclusion:

Canada's Indo-Pacific strategy will ensure that Canada plays an active role in the Indo-Pacific. Canada is looking to the horizon of the Indo-Pacific future with a clear vision of the shared prosperity that matters to Canadians and the people of the entire Indo-Pacific region.



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1 Red-Crowned Roof Turtle

Why in News:

At the recent CITES (Convention on International Trade in Endangered Species) 19th Conference in Panama, India proposed to better conserve the freshwater reptile species red-crowned roof turtle by adding it to Appendix I (those species which are critically endangered and are on the verge of extinction). The convention is considering stricter trade rules for the nearly six hundred species of animals and plants that are under increasing threat of extinction from international trade.

Red-crowned roof turtle:

- The red-crowned roof turtle or Bengal roof turtle is a species of freshwater turtle found in South Asia. It was the type species of its former genus *Kachuga*. Females can grow to a shell length of 56 cm (22 in) and weigh up to 25 kg (55 lb), but males are significantly smaller. Turtles prefer to sunbathe on land. During the breeding season, the head and neck of male turtles appear bright red, yellow, and blue. Females excavate nests in which they lay up to thirty eggs. Its scientific name is *Batagur Kachuga*.

Safety Issues:

A study by global NGO TRAFFIC found that around 11,000 turtles and freshwater turtles have been confiscated in India from 2009-2019.

- Its existence is threatened due to habitat loss due to

pollution and hydroelectric projects in northern India and the Gangetic plains of Bangladesh.

- It also faces threats from illegal consumption and illegal international trade.
- It is highly susceptible to major hydrological projects and river flow dynamics and their effects on nesting beaches and water pollution.
- These turtles have also died due to harvesting for meat and shells, drowning in fishing nets, water pollution and other challenges.
- Sand mining and cultivation of seasonal crops along the banks of the river Ganga are majorly affecting the sand-bars along the river which are used by the species for nesting.

Security Measures:

- It is already classified as critically endangered under the Red List of the International Union for Conservation of Nature.
- It is included in CITES Appendix II
- It is protected under Schedule I of the Indian Wildlife (Protection) Act (Amendment) of 1972.
- The International Union for Conservation of Nature has classified the turtle as “critically endangered”. India has taken conservation measures, and a captive breeding program has been initiated.

2 Extreme Climate is New Normal

Why in News:

The Centre for Science and Environment's new report, which captures climate change in India, has noted that India recorded extreme weather events for 241 days out of 273 days from 1 January to September 30, 2022.

About extreme weather:

- India faced extreme heat waves, unprecedented floods, and excess rainfall this year. As per experts more needs to be done for climate adaption to prevent economic losses and food insecurity. The extreme weather events were widespread in June- September, the southwest monsoon period. During these months, most states recorded a combination of two extreme events: lightning and heavy rain, flood, and landslide.

In January, rainfall in central India was 203% higher than the average rainfall in the 1981- 2010 period. In March, the mean temperature in northwest India was 3.2 degree Celsius higher than the average in the 1981-2010 period. The month of May recorded a mean temperature of 32 degrees Celsius, the highest for any month across all regions.

Possible Reasons:

- Numerous studies have documented that human-induced climate change has increased the frequency and severity of heat waves across the globe. In recent years, the frequency of heat waves has been increasing in many parts of the world including India, and the risks associated with extreme heat are

increasing with further warming.

- Floods are triggered and intensified by both weather- and human-related factors. Major weather factors, including heavy or prolonged precipitation, thunderstorms, and storm surges are causing cities and coastal regions to flood more often. Human-induced warming is further adding to weather-related factors, increasing heavy downpours and causing more extensive storm surges due to sea level rise.

Conclusion:

The frequency and intensity of extreme weather events will further increase with increasing global temperatures. India is already losing 3-5% of its GDP due to climate

change and this number could rise to as much as 10% if the warming is not limited to below 2 degrees Celsius. While a lot is being done to improve early warning systems and provide for rescue and relief, India will need to invest more in adaptation and resilience. The nation will require global support in managing climatic impacts. About 80% of India's population lives in regions that are highly vulnerable to extreme disasters like severe flooding or heat waves. Despite India's sophisticated early warning systems for floods and cyclones, end-to-end connectivity needs to be improved and should be made more robust.

3 Ground Water Resources of India

Why in News:

The Centre released the **National Compilation on Dynamic Ground Water Resources of India**, for the entire country for the year 2022. Groundwater is often stored in deep aquifers, permeable rocks, and sediments and is extracted using pumping wells. Often, aquifers can be renewable water resources, slowly replenished by rainfall infiltration over hundreds up to many thousands of years.

Issues underscored in the report:

1. A detailed analysis of the information collected from the assessment indicates an increase in groundwater recharge which may mainly be attributed to increasing in recharge from canal seepage, return flow of irrigation water and recharges from water bodies/tanks & water conservation structures. Further, analysis indicates improvement in groundwater conditions in 909 assessment units in the country when compared with 2017 assessment data. In addition, the overall decrease in the number of over-exploited units and decrease in stage of groundwater extraction level has also been observed.
2. The main source of replenishable ground water resources is recharge from rainfall, which contributes to nearly 61 % of the total annual ground water recharge. India receives about 119 cm of rain annually on average, with high spatial variation. A major part of the country receives rainfall mainly during Southwest (SW) Monsoon season, spread over the months of June to September, except in Tamil Nadu, where the major contribution is from the Northeast

(NE) monsoon from October to December. There are also States such as, Jammu and Kashmir, Himachal Pradesh, and Uttarakhand which receive significant rainfall in all seasons.

3. In the present assessment, the total annual ground water recharge has been assessed as 437.60 billion cubic meter (bcm). Keeping an allocation for natural discharge, the annual extractable ground water resource works out as 398.08 bcm. The total annual groundwater extraction (as of 2022) has been assessed as 239.16 bcm. The average stage of ground water extraction for the country as a whole works out to be about 60.08 %.
4. Type of rock formations and their storage and transmission characteristics have a significant influence on groundwater recharge. Porous formations such as the alluvial formations in the Indo-Ganga-Brahmaputra basin generally have high specific yields and are good repositories of groundwater. Groundwater occurrence in the fissured formation occupying nearly two-thirds of the geographical area of the country, on the other hand, is mostly limited to the weathered, jointed and fractured portions of the rocks.

Conclusion:

Management of ground water resources in the Indian context is an extremely complex proposition as it deals with the interactions between the human society and the physical environment. The highly uneven distribution of ground water availability and its utilization indicates that no single management strategy can be adopted

for the country as a whole. Any strategy for scientific management of ground water resources involves a combination of :

1. Supply side measures, aimed at increasing extraction

of ground water depending on its availability.

2. Demand side measures, aimed at controlling, protecting and conserving available resources.

4 Invasive Plants – Threat to India's Natural and Agricultural Landscape

Why in News:

A team from the Institute of Forest Productivity, Ranchi analyzed the dispersal dynamics of two invasive plant species, *Chromolaena* and *Lantana camara*. The researchers used computer modeling to investigate and found that these plants would not be affected by climate change.

What are invasive plants?

➤ Plants that do not occur naturally in an area but have been introduced to the area where they spread and have many negative effects (such as affecting native biodiversity, economic and human health) in these new habitats), are called invasive plants. It can also be called 'intruder caste'.

Where do invasive plants come from?

➤ Sometimes they are introduced intentionally for ornamental, floriculture or agricultural use. For example, the tropical American shrub *Lantana camara* was introduced to India as an ornamental plant in the 19th century but now invades diverse terrestrial habitats including scrublands and forests.

➤ Enter into new territories through international travel and trade.

➤ Seeds or plant fragments can get attached to clothing or accidentally come with imported goods. *Parthenium* made its way to India in 1956 through wheat imports from the USA.

How Invasive Plants Affect the Environment:

Biodiversity is intricately linked to ecosystem services and human well-being. Globally, biodiversity is known to produce food and ensure nutritional security

➤ They can take over habitats of native plants, successfully crowding out these natives.

➤ Some native trees can suppress plant growth by their allelopathic properties and by inhibiting underground mutualisms with fungi.

➤ Some invaders also increase the risk of wildfires and soil erosion.

➤ *Parthenium* is toxic to livestock in India. Weeds also affect human health by aggravating respiratory and skin diseases.

➤ Invaders also cause huge economic losses by invading agricultural and grazing lands.

➤ Reduces global agricultural productivity, in addition to hindering forest diversity.

Some of India's most notorious invaders include *lantana*, *Parthenium*, *Siam weed*, *Mexican devil*, *water hyacinth* and *mesquite*. India is considered to have one of the most invasive vegetation regions in the world.

India is considered to have one of the most invasive vegetation regions in the world. There are over 200 invasive species here.

Measures to Control Invasive Plants:

➤ Cutting, burning and uprooting.

➤ *Water hyacinth* – use of mechanical removal to temporarily clear water bodies.

➤ Use of Mexican beetle as biological control.

➤ Emphasis on the need for an integrated trans-disciplinary research for sustainable management.

➤ Management can be strengthened through their association with geospatial technologies by mapping and monitoring IAPs spread.

Way Forward

Biological aggression has been recognized as a growing threat to global stability. Its spread can be reduced by increasing awareness among farmers, gardeners and plant nursery owners about the problems related to it. Replacing invasive with native species, and cleaning pets after outdoor walks can prevent the spores from spreading through their fur. Thoroughly cleaning your clothing, shoes, and travel luggage before moving to a new location can also prevent the spread of invasive species.

5 Cauvery South Wildlife Sanctuary

Why in News:

Recently Cauvery South Wildlife Sanctuary was recognized as the 17th Wildlife Sanctuary of Tamil Nadu. This recognition has been done under section 26A(1)(b) of the Wildlife Protection Act, 1972. The Cauvery South Wildlife Sanctuary will link the Cauvery North Wildlife Sanctuary in Tamil Nadu with the Cauvery Wildlife Sanctuary in neighboring Karnataka.

Cauvery South Wildlife Sanctuary:

- The Government of Tamil Nadu has declared an area in Krishnagiri and Dharmapuri reserve forests as Cauvery South Wildlife Sanctuary. Spread over 686.406 sq. km, the sanctuary will be part of a protected landscape adjacent to the forests that currently constitute the Cauvery North Wildlife Sanctuary. It is a shared region between Tamil Nadu and Karnataka.
- It is home to 35 mammal species and 238 bird species. Leith's soft-shelled turtle, smooth-coated otter, marsh crocodile and four-horned antelope are found here. Gharials, giant squirrels and lesser fish eagles also occur here, which are particularly dependent on the Cauvery River and the forest river system.

Important points related to Cauvery South Wildlife Sanctuary:

- The Cauvery South Wildlife Sanctuary links the Cauvery North Wildlife Sanctuary in Tamil Nadu with the Cauvery Wildlife Sanctuary in the neighboring state of Karnataka.
- It forms a large contiguous network of protected

areas for wildlife in the Cauvery river basin.

- It provides continuity to the Nilgiri Biosphere Reserve through Malai Mahadeshwara Wildlife Sanctuary, Biligiri Rangaswamy Temple Tiger Reserve in Karnataka and Sathyamangalam Tiger Reserve in Tamil Nadu and Erode Forest Division.
- This sanctuary is an important habitat for elephants. It hosts two elephant corridors – the Nandimangalam-Ulibanda corridor and the Kovaipallam-Annebidahalla corridor.
- Ecosystem protection of the Kaveri basin is important for the conservation of riverine species that depend on the Kaveri river.
- The giant brown squirrel, the four-horned antelope, and the lesser fish eagle are particularly dependent on the Kaveri River and the forest ecosystem. This sanctuary will provide protection to these endangered species.
- The forest area of the new sanctuary forms part of the hunting grounds and is a tiger friendly area. The conservation of leopard and other red-listed large carnivores will also get a boost here.

Conservation efforts in this area will help protect and restore habitat, reduce soil erosion, and ensure siltation of the downstream Stanley Reservoir. This important step in consonance with the missions of TN Green Climate Company will go a long way in conserving the rich biodiversity of the state.

6 India joins Mangrove Alliance for Climate at COP27

Why in News:

- Recently India has joined the Mangrove Alliance for Climate (MAC) at the 27th session of the Conference of the Parties (COP27) at Sharm el-Sheikh in Egypt. The move, in line with India's goal of increasing its carbon sink, will see New Delhi collaborate with Sri Lanka, Indonesia and other countries to preserve and restore mangrove forests in the region. After joining the alliance, India called for integration of

mangrove conservation with Reducing Emissions from Deforestation and Forest Degradation (REDD) programs for carbon sequestration.

- The move is in line with India's Nationally Determined Contributions (NDCs) to create an additional carbon sink equivalent to 2.5 to 3 billion tonnes of carbon dioxide (CO₂) through additional forest and tree cover by 2030.

What is Mangrove Alliance for Climate:

- The Mangrove Alliance for Climate (MAC) is an intergovernmental coalition that seeks to expand and accelerate progress toward the conservation and restoration of mangrove ecosystems. Its members include the United Arab Emirates, Indonesia, India, Sri Lanka, Australia, Japan and Spain.
- The alliance raises global awareness of the role of mangroves as a nature-based solution to climate change. It guarantees the rehabilitation of mangrove forests around the world.
- They provide important climate change mitigation and adaptation co-benefits because they are able to store carbon 400 percent faster than terrestrial rain forests.
- They protect coastal areas from sea level rise, erosion, tsunami and storm surge.
- They provide breeding ground for marine biodiversity.
- About 80 percent of the world's fish population depends on these ecosystems for their survival.
- The mollusc and algae-filled substrate serves as a breeding ground for small fish, mud crabs and prawns and provides livelihood to local artisanal fishermen.

Mangroves in India:

- India contributes almost half of the total mangrove cover in South Asia. According to the Forest Survey 2021 report, the country's mangrove cover is 4,992 sq. km, which is 0.15 per cent of the country's total geographical area. Since 2019, the coverage has increased by only 17 sq. km.

Importance of Mangroves:

- Mangroves—Mangroves are small trees and shrubs that grow along coastlines, thrive in salt water, and form unique forests along land and sea. Mangrove forests—consisting of trees and shrubs living in intertidal waters in coastal areas—host diverse marine life. They also support a rich food web.
- Mangrove ecosystems are among the most productive

Way Forward

The Mangrove Alliance for Climate strives to raise awareness and educate around the world on the role mangroves can play in preventing global warming and its potential as a solution to climate change. The increasing GHG concentration in the atmosphere can be reduced through MAC.

7 State of the Climate in Asia Report 2021

Why in News:

State of the climate in Asia 2021, a report jointly prepared by the World Meteorological Organization (WMO) and the United Nations Economic and Social Commission for Asia and the Pacific (ESCAP) presented at the United Nations Climate Change Dialogue, COP27 in Sharm El Sheikh, Egypt to be done. According to the report that released on November 14, 2022 in 2021 at least 48.3 million people in Asia were affected by more than 100 natural hazards. These events include drought, extreme temperatures, floods, glacial lake outbursts, landslides, storms and wildfires.

Important Points of the Report:

The report 2021 highlights how the impacts of climate change are inflicting an ever-increasing human, financial and environmental toll, exacerbating food insecurity and poverty and inhibiting sustainable development.

- Floods have been considered the costliest disaster in Asian countries including China and India. China lost \$18.4 billion, India \$3.2 billion due to floods. Floods caused the maximum number of deaths and economic losses.
- Losses due to landslides have increased by 147 per cent compared to the 2001-2020 average.
- Losses due to drought have increased by 63 per cent during this period. The drought affected the most people in this region.

- The storm caused \$4.4 billion in damage to India, \$3 billion to China and \$2 billion to Japan.
- The report shows a worrying scenario for future water crisis. High mountain Asia has the largest amount of ice outside the polar region. The rate of retreat of glaciers is accelerating. Several glaciers have suffered heavy losses as a result of exceptionally hot and dry conditions in 2021.
- The average temperature in Asia in 2021 was about 0.86°C higher than the average for the 1981-2010 period.
- The highest cost as a percentage of the country's gross domestic product (GDP) is estimated for Nepal, followed by Cambodia and then India.
- WMO report presents important evidence on loss and damage from the climate-sensitive Asian continent. It shows the interrelationships between climate indicators and the SDGs.

Way Forward:

There is an urgent need to prioritize the development of multi-hazard early warning systems and climate forecasts to deal with natural hazards. The climate crisis, food insecurity and rising poverty are posing major obstacles to the world's progress towards sustainable development. Most Asian countries have prioritized adaptation in their climate action plans. Strengthening early warning systems can play a vital role in taking advance action, enhancing preparedness and mitigating the impact of these hazards.



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1 Indian Army to construct 3D-printed bunkers at LAC

Why in News:

The Indian Army will construct a modular, 3D-printed next generation bunkers to provide better protection to front-line soldiers guarding the country's border from China in the Ladakh region.

More Info on the News:

- Underground facilities for storing ammunition at forward locations along the line of Actual Control (LAC) will be created.
- The Army will build a raft of new roads, bridges and tunnels as part of an overarching infrastructure push, to strengthen its capabilities in the sensitive sector at a time of lingering border standoff with the China.
- The modules are being built by the army in partnership with the IITs at Gandhinagar and Madras.
- The 3D printers will be moved to Ladakh for making the bunkers as it will save time and transportation costs.

About 3D-Printing

- 3D Printing is a process in which three-dimensional objects are created from a digital representation from a CAD (computer-aided design) file.
- It is an additive process where the object is created by laying down successive layers of material. Each of the layers consists of thinly sliced cross-section of the object.
- Usually, the material used in 3D Printing is plastic or metal. A special type of concrete is used for such projects undertaken by the Army.
- China, Russia and USA have already completed such

projects with 3D-printed structures.

Benefits of using 3D-printed infrastructure

- 3D printed structures allow greater flexibility of design and velocity in completion.
- It potentially reduces the overall construction cost and brings down the related carbon footprint.
- It allows utilization of eco-friendly materials while increasing the labour productivity at the same time.
- It can be easily undertaken in areas where the conditions are hostile.

Features of 3D-Printed Bunkers:

- The material used for the project is a proprietary form of quick-drying concrete and admixture.
- The bunkers built will be very strong and can withstand a direct hit from a T-90 tank.
- Durability and lightness are the benefits of the bunkers.
- The army is using 3D-printing methods to build living shelters for soldiers. Four such double-storey shelters have come up in the eastern sector, with each capable of accommodating 64 soldiers.

Way Forward:

The 3D-printed structures deployed by the armed forces give an edge to the nation's security. It needs strong support from the government and private players for research and creating an environment that is conducive for the industry to form domestic and international collaborations.

2 Artemis I Mission

Why in News:

The National Aeronautics and Space Administration (NASA) successfully launched the unmanned Moon mission named Artemis I.

About Artemis I Mission:

- Artemis I is an unmanned mission of NASA. It commenced with the test of NASA's Space Launch System (SLS) rocket and Orion crew capsule. Artemis I is the first in a series of increasingly complex missions to build a long-term human presence at the

Moon for decades to come. The primary goals for Artemis I are to demonstrate Orion's systems in a spaceflight environment and ensure a safe re-entry, descent, splashdown, and recovery prior to the first flight with crew on Artemis II. One of the most critical phases of the Artemis I mission is getting the Orion module safely back to Earth. It will re-enter the planet's atmosphere at 38,000km/h or 32 times the speed of sound and the shield on its underside will be subjected to temperatures approaching 3,000°C.

Significance of the Artemis I mission:

- Artemis I is the first step in that new space age to achieve the promise of taking humans to new worlds, landing and living on other planets.
- The CubeSats has equipped with instruments for specific investigations and experiments, including the search for water in all forms and hydrogen as a source of energy.
- Biology experiments have conducted, and the effects of the deep space environment on humans will be investigated through effects on dummy 'passengers' on Orion.

Upcoming Artemis Missions:

Artemis II:

- It will fly in 2024.
- Artemis II will have a crew on board in NASA's Orion spacecraft. It will be a test mission to confirm that all of the spacecraft's systems will operate in the same way as humans aboard.
- But the launch of Artemis II will be similar to that of Artemis I. A crew of four astronauts will board Orion and the ICPS will orbit Earth twice before heading in

the direction of the Moon.

Artemis III:

- It is scheduled for 2025 and is expected to take astronauts to the Moon for the first time since the Apollo missions.

Moon Missions of India:

- India is also not far behind in research on the moon. Chandrayaan-1 was India's first lunar mission under the Chandrayaan project. It was successfully launched in October 2008 from Satish Dhawan Space Centre (SDSC) SHAR, Sriharikota, Andhra Pradesh. Chandrayaan-2 was India's second mission to the Moon and comprised a completely indigenous Orbiter, Lander (Vikram), and Rover (Pragyan). Rover Pragyan was placed inside Vikram Lander. Although, the mission was not completely successful as it failed to land lander and rover on the moon. Nevertheless, ISRO recently announced that India's third lunar mission Chandrayaan-3 which will be a continuation of Chandrayaan-2 and consist of a lander and a rover.

3

Saliva-Based Pregnancy Test

Why in News:

The world's first saliva-based pregnancy test, developed by a Jerusalem-based startup will soon be available in the market in Israel, Europe, South Africa, and the United Arab Emirates.

Importance of Saliva:

- Saliva is a watery secretion in the mouth produced by the salivary glands which aid in food digestion by moistening the food. It contains the enzymes that start the digestion process. It also serves to moisten and cleanse the mouth, including the tongue and teeth and contains substances that can play a role in the prevention of infection.
- Salignostics is an Israeli biotech company that developed the pregnancy test kit. It is based on technology used to make COVID-19 testing kits. The SaliStick test kits will be available in early next year.

Process of Saliva Based Pregnancy Test:

- The saliva test is as simple (and likely less messy)

as traditional pregnancy tests. According to the company people taking the test will have to insert one part of the test kit into their mouth for several seconds to collect saliva and into a testing tube, which delivers results in less than 10 minutes. Like many urine-based tests, Salignostics' saliva test can be taken on the first day of a missed period to detect the presence of the pregnancy hormone β -hCG (Human Chorionic Gonadotropin).

Role of hormones during Pregnancy:

Human chorionic gonadotropin hormone (hCG):

- This hormone is only secreted during pregnancy. It is secreted almost exclusively in the placenta. HCG hormone levels found in the mother's blood and urine rise considerably during the first trimester. These hormones may play a part in nausea and vomiting often linked to pregnancy.

Human placental lactogen (hPL):

- This hormone is also known as human chorionic somatomammotropin. It is secreted by the placenta and gives nutrition to the foetus. It also stimulates

mammary glands in the breasts for lactation.

Estrogen:

- This group of hormones helps develop female sexual traits. It is normally formed in the ovaries. It is also secreted by the placenta during pregnancy to help maintain a healthy pregnancy.

Progesterone:

- This hormone is secreted by the ovaries and by the placenta during pregnancy. It stimulates the thickening of the uterine lining for the implantation

of a fertilized egg.

Conclusion:

Saliva is the key to rapid diagnostics for a variety of medical reasons. It is the only non-invasive, easy, and hygienic means to detect hormones, viruses, and even diseases. This product completely removes the need for blood and urine samples when testing for pregnancy.

4

Personalized Cell Editing Used To Treat Cancer

Why in News:

Recently a team led by scientists from PACT Pharma at South San Francisco and the University of California, Los Angeles (UCLA) has developed a method to isolate multiple T cell receptors (TCRs) from cancer patients for specific neoantigens and have used non-viral CRISPR editing. Scientists have used this CRISPR technique for the first time to insert genes that allow immune cells to attack cancer cells, increasing the effectiveness of immunotherapy.

CRISPR Gene Editing Technology:

- This is a leap forward in developing a personalized treatment for cancer. This technique has previously been used in humans to remove specific genes to allow the immune system to become more active against cancer. CRISPR has been used not only to knock out specific genes, but also to insert new ones into immune cells, efficiently redirecting them to recognize mutations in a patient's own cancer cells.

Function:

- When patients are re-infected, these CRISPR-engineered immune cells preferentially target the cancer and become the most over-represented immune cells there.
- The human immune system has specific receptors on immune cells that can specifically recognize cancer cells and differentiate them from normal cells.
- These vary from patient to patient. So finding an efficient way to isolate them and put them back into immune cells to generate a personalized cell therapy for cancer treatment is key to making large-scale approaches possible. Discovered an efficient way to isolate these immune receptors from the patient's

own blood.

- Using gene editing to redirect immune cells to recognize cancer.
- The generation of a personalized cell therapy for cancer would not have been possible without the newly developed ability to use CRISPR technology to alter immune receptors in clinical-grade cell preparations in a single step.
- Researchers report on 16 patients treated for a variety of solid cancers, including colon, breast and lung cancer.
- Immune cells were isolated from patients' blood based on their binding to the patient's own cancer, displaying up to 350 mutations. In total, more than 5000 mutations are targeted by the 34 flavors of HLA subtypes of the immune system. They were inserted back into the patient's own immune cells using one-step CRISPR editing, which involved knock-out of existing immune cell receptors and knock-in of immune receptors that redirect those cells to specifically recognize the mutations. Could have done cancer.

Way Forward:

Chemotherapy had many side effects on patients such as problems like fever, cold from gene edited cells in patients. These demonstrate the broad applicability of CRISPR-based gain-of-function screens in functional genomics research, the potential power of efficient genome-wide gene-editing systems, and the innovative development of new variations and specializations that will continue in the foreseeable future.

5 India's First Private Rocket Vikram-S Launched Successfully

Why in News:

- ISRO successfully launched a private rocket from Sriharikota for the first time. It is India's first private Vikram suborbital rocket launched from Satish Dhawan Space Centre, Sriharikota.
- The mission, codenamed Prarambh (beginning), is the Indian private sector's first entry into the lucrative space launch market.
- The rocket safely splashed in the waters of the Bay of Bengal at around 115 km after the lift-off from Sriharikota. The mission was declared successful.

About Prarambh Mission:

- The Prarambh is a mission under which Vikram-S, India's first privately developed launch vehicle, will carry 3 customer satellites (2 Indian and 1 foreign) in a sub-orbital flight.
- This mission is aimed at carrying three payloads into space, including a 2.5-kilogram payload that has been developed by students from several countries.

About Vikram-S Rocket:

- The Vikram-S is developed by Hyderabad-based Skyroot Aerospace limited with extensive support from the Indian Space Research Organisation (ISRO) and IN-SPACe (Indian National Space Promotion and Authorisation Centre).
- It is a single-stage solid-fuel suborbital launch vehicle, named after Vikram Sarabhai, a pioneer of India's space programme.

- The spacecraft travels at a speed slower than the orbital velocity in sub-orbital flight, meaning it is fast enough to reach outer space but not fast enough to maintain an orbit around Earth.
- The engine of the launch vehicle, Kalam-80, has been named after former President APJ Abdul Kalam.
- Vikram-S is a Small Satellite Launch Vehicle (SSLV) that will carry a payload of 290 to 560 kg (PSLV, India's workhorse, can carry up to 1,750 kg) into Sun-synchronous polar orbits.

Importance of the Mission:

- The successful launch of Vikram S marks the entry of the private sector into the Indian space program, which has so far, remained government-controlled and funded.
- Private participation in the launch vehicle, satellite, payload, and ground station markets will increase.
- ISRO's Small Satellite Launch Vehicles (SSLV) are also likely to be manufactured and operated by private players soon.

Conclusion:

It is believed that a large number of companies have the potential to become big players in the space sector and ISRO can play a facilitator role for them and help them in building technologies. In this way, private participation in the space sector will increase and India will be able to become a launch hub for private satellites.

6 No Money For Terror

Why in News:

In the 3rd "No Money For Terror" Conference, the delegates discussed the Emerging Trends in terror financing, misuse of New Emerging Financial Technologies, and international cooperation in the field of terror financing to effectively achieve the objective of 'No Money for Terror'.

Misuse of Technology:

- Terrorists and terrorist groups understand the nuances of modern weapons and information technology such as the Dark Net and Cryptocurrency very well. This transformation of terrorism from dynamite to metaverse and AK-47 to virtual assets is a matter of concern for the countries.

Use of Dark Net for Terrorism:

- The darknet or dark web or deep web is the hidden collective of internet sites only accessible by a specialized web browser such as Tor, Freenet, I2P, and Tails.
- It is used for keeping internet activity anonymous and private, which can be helpful in both legal and illegal applications. While some use it to evade government censorship, it has also been known to be utilized for highly illegal activity.
- The dark web operates in secrecy using the onion router (ToR). Recently, the dark net is used by terrorists to finance their activity.

Use of Cryptocurrency for Terrorism:

- A cryptocurrency is a form of virtual or digital

currency that is based on a network that is distributed over a large number of computers. This form of currency is not issued by any central government or authority and cannot be counted as legal tender.

- Over the years, various types of cryptocurrencies have been introduced such as Bitcoins, Ripples, Monero, Zcash2, etc, but so far Bitcoin is the most valuable one.
- Even though this financial system was only introduced in 2009, one primary reason for its surging popularity is the lack of clerical and complicated paperwork that is usually required. But right now lack of regulation on cryptocurrencies is misused by terrorist organization.
- In 2019, the Izz ad-Din al-Qassam Brigades (AQB), the military wing of Hamas and a designated terrorist organization, collected money through a website that generated a new Bitcoin address for every donor

to send funds to. The campaign also published a video on its website, teaching people how to donate anonymously.

- In December, pro-IS websites like Akhbaar-al-Musalmin (Arabic for news of the Muslims), and Isdarat were soliciting funds through bitcoin donations. Isdarat can be viewed on the 'dark web' only through a TOR (The Onion Router) browser and hence is not accessible on the surface web.

Conclusion:

The hawala system was perhaps the most widely used financial instrument of terrorist groups. It was a fairly simple system that allowed the transfer of money across borders. But after the 9/11 attacks the hawala system has moved into the online domain and an estimated GB 258.9 billion Euros have been passed through online banking systems, most fund are traced to the Islamic State al-Qaeda.

7 EOS-06 satellite

Why in News:

ISRO's work horse PSLV-C54 has successfully launched EOS-06 satellite along with Eight Nano-satellites into two different Sun Synchronous Polar Orbits.

About EOS-06 Satellite:

- EOS-06 is third generation satellite in the Oceansat series, which provides continued services of Oceansat-2 with enhanced payload capability. The satellite onboard carries four important payloads viz. Ocean Color Monitor (OCM-3), Sea Surface Temperature Monitor (SSTM), Ku-Band Scatterometer (SCAT-3), ARGOS. The Oceansat-2 which was launched during Sept-2009 configured to cover global oceans and provide continuity of ocean colour data with global wind vector and characterization of lower atmosphere and ionosphere. The mission resulted in many research collaborations nationally and internationally on various areas global chlorophyll distribution, Kd 490 distribution, ocean color images, oil spillages, wind vector products.
- The EOS-06 is envisaged to observe ocean color data, sea surface temperature and wind vector data to use in Oceanography, climatic and meteorological applications. The satellite also supports value added products such as potential fishing zone using chlorophyll, SST and wind speed and land based geophysical parameters.

About INS-2B:

- INS-2B is a collaborative mission between India and Bhutan. It has 2 payloads – the NanoMx (a multispectral optical imaging payload) and APRS-Digipeater. India provided capacity building assistance for the development of this mission. Bhutanese engineers were provided hand-on training at the UR Rao Satellite Centre, in Bengaluru to build and test satellites as well as process and analyse satellite data. This newly launched satellite will provide high-resolution images to Bhutan to help the country effectively manage its natural resources.

Conclusion:

EOS6 satellite is designed and developed for ocean studies to meet national objectives. It is a part of ISRO's series of satellites dedicated to oceanographic and atmospheric studies. Thus it can contribute greatly to the development of the Indian water economy and provide a strategic edge to the Indian Ocean. INS-2B satellite will mark the expanded cooperation in space between the two countries. Through this, India can enhance space diplomacy and have deeper cooperation in the field of science. Other non-satellites that were launched by ISRO may make ISRO a potential satellite launcher for a private player. At the same time, with private players, ISRO can dominate the foreign market.

1 Evaluating Old Pension Scheme

Why in News:

Recently, few political parties promised to switch to the Old Pension Scheme in some states.

About Old Pension Scheme (OPS):

- Under the OPS, pension to government employees at the Centre as well as states was fixed at 50 percent of the last drawn basic pay.
- For instance, if an employee's monthly salary just before retirement was Rs.10,000, she/he would be assured of a pension of Rs.5000.
- Also, employees get the benefit of the revision of Dearness Allowance (DA), twice a year. DA is an adjustment offered to employees and pensioners to make up for the rise in the cost of living.
- OPS was discontinued in 2004.

Concerns regarding the OPS:

1. Pension liability was Unfunded:

- That is, no accretions were made towards a pension corpus, which would grow continuously and could be dipped into for future payments.
- The centre provided for pensions by estimating payments to retirees ahead of the Budget every year.
- The present generation of taxpayers paid for all pensioners as of date.
- The 'pay-as-you-go' scheme created inter-generational equity issues.

2. OPS was unsustainable

- The pension liabilities keep climbing since pensioners' benefits increased every year; like salaries of existing employees, pensioners gained from indexation.
- The government paid them 'dearness relief' (same as DA for existing employees).
- With better healthcare, life expectancy improved and

increased longevity the pay-outs are extended.

3. Bad Economics and Bad Politics:

- In 30 years, the cumulative pension bill of states has jumped to Rs.3,86,001 crores in 2021-2 from 3,131 crores in 1990-91.
- The pension payments by states consume almost a quarter of their tax revenues.

Plans to Address the Concerns:

- In 1998, Old Age Social and Income Security (OASIS) project was commissioned by the Union Ministry of Social Justice and Empowerment. The primary objective of OASIS was to target unorganized sector workers who had no old age income security.
- Although, the report submitted did not find favour with the government, but it became the basis for the New Pension Scheme, notified in 2003.

New Pension Scheme (NPS):

- The defined contribution comprising 10 percent of the basic salary, DA by the employee and a matching contribution by the government. The contribution was mandatory. Contribution by government was later revised to 14 percent in 2019.
- NPS is being implemented by Pension Fund Regulatory and Development Authority (PFRDA) in the country.

Way Forward:

Although, the OPS in short run saves money for state governments as well as for the employees since they will not have to put 10 percent contribution towards employee pension funds, it might have repercussions in future. Therefore, a careful analysis of the schemes and course correction is the need of hour.

Age of Joining	21		30		40	
Grade Pay (Initial Basic Pay)	Pension (NPS)	Pension (OPS)	Pension (NPS)	Pension (OPS)	Pension (NPS)	Pension (OPS)
1800 (18000)	2,75,000	1,10,000	1,00,000	62,000	30,000	33,000
2400 (25500)	3,90,000	1,55,000	1,44,000	88,000	42,000	47,000
4200 (35400)	5,44,000	2,16,000	2,00,000	1,22,000	60,000	65,000
4800 (47600)	7,30,000	2,90,000	2,70,000	1,65,000	80,000	87,000
5400 (56100)	8,60,000	3,43,000	3,16,000	1,93,000	94,000	1,00,000

2 Vostro Accounts for Overseas Trade in Rupee

Why in News:

The Reserve Bank of India approved the opening of nine special Vostro accounts in two Indian Banks (UCO Bank and IndusInd Bank) to facilitate overseas trade in rupee. Sberbank and VTB Bank- the top largest banks of Russia are the first foreign lenders to receive the approval from the RBI.

About Vostro Account:

- A Vostro account is an account that a domestic bank holds for a foreign bank in the domestic bank's currency, i.e., rupee.
- A Vostro account is opened to enable a foreign correspondent bank to provide services as an intermediary for a domestic bank to execute wire transfers, withdrawals and deposits for customers in countries where the domestic bank does not have physical presence.
- From the correspondent bank's point of view, the funds held on behalf of other banks are referred to as Vostro account.
- From the perspective of domestic banks, the funds deposited at correspondent banks are referred to as Nostro accounts.

Global Trade Settlement Mechanisms in Rupees:

- In order to facilitate trade with sanctions-hit Russia, RBI has allowed settlements in Indian Rupees for domestic traders.

- Indian importers will make payments in rupees, to be credited to the Vostro account of the correspondent bank of the partner country.
- Indian exporters will be paid the export proceeds in rupees from the balances in Vostro account.

Key Benefits:

- Boost to Indian export and currency- It will promote global trade growth with an emphasis on exports from India and will support the increasing interest of the global community in INR.
- Saves Foreign currency and reduce trade deficit- This will further strengthen the forex inflows in the country which will help in stabilizing the rupee.
- Expedite transactions with sanctioned countries- The opening of trade settlement alternative shows Russia's importance as a trading partner in the face of increasing pressure from Western countries.
- Settlement in Indian Rupee- Amid ongoing rupee weakening scenes, the mechanism will promote rupee settlement of trade flows. This will reduce the demand for foreign exchange.

Way Forward:

The move to open Vostro account clears the check for settlement of payments in rupee for trade between India and Russia, which is in national interest for both countries.

3 NFRA introduces Audit Quality Inspections

Why in News:

The National Financial Reporting Authority (NFRA) has published its audit quality inspection guidelines envisaging to further improve the quality of audit profession.

The inspection guidelines are on the lines of the best practices followed by International Audit Regulators.

Audit Quality Inspections:

- Audit inspections are integral to the functioning of independent audit regulators, world-wide.
- The International Forum for Independent Audit Regulators (IFIAR), which comprises independent audit regulators from 54 countries, requires that

audit regulators should conduct recurring inspections of audit firms that are undertaking audits of public interest entities.

- An inspection generally consists of firm-wide quality reviews and/or test-check of individual audit assignments to evaluate the level of compliance with applicable auditing standards and quality control policy and processes.
- Audit quality inspections are a key tool with the Regulator to fulfil its statutory obligations under Companies Act 2013.
- The overall objective of inspections is to evaluate compliance of the audit firm/auditor with auditing standards and other regulatory and professional

requirements, including

1. Adequacy of governance framework and its functioning
 2. Effectiveness of firm's internal control over audit quality
 3. System of assessment and identification of audit risks and mitigating measures
- Inspections are intended to identify areas and opportunities for improvement in the audit firm's system of quality control.

and quality of auditing standards.

- NFRA consists of a chairperson, (who should be a person of eminence and should have expertise in accountancy, auditing, finance, or law), appointed by the Central Government and such other members not exceeding 15.
- Its account is monitored by the Comptroller and Auditor-General of India.
- Its headquarter is situated in New Delhi.

National Financial Reporting Authority (NFRA):

- NFRA was created as a statutory body in 2018 under section 132(1) of the Companies Act 2013.
- It is an audit regulator which recommends accounting and auditing policies to be adopted by the companies.
- NFRA also monitors and enforces the compliance

Way Forward:

Audit Quality Inspection will provide an opportunity for feedback and course correction to the audit firms and at the same time, it will foster a greater mutual understanding of the policies and procedures that underline audit quality management. This will bring systematic improvements.

4 India's First Sovereign Green Bond Framework

Why in News:

Recently the Union Minister of Finance approved the final sovereign green bonds framework that will be mobilized to fund environmentally sustainable projects.

Green Bond:

- Green bonds are financial instruments that generate funds for investment in environmentally sustainable and climate-suitable projects such as renewable energy, clean transportation, and green buildings among others.
- These can be issued by companies, countries, and multilateral organisations. Sovereign Green Bond is issued by a Government.
- Green bonds command a relatively lower cost of capital compared to regular bonds.
- In India, the first Green Bond was issued by Yes Bank in 2015.

Sovereign Green Bonds Framework:

- The framework will facilitate India's commitment under "Panchamrit", the five elements to deal with climate change challenges, as elucidated by the Prime Minister at CoP-26 in Glasgow in November 2021.
- This will strengthen India's commitment towards its Nationally Determined Contribution (NDCs) targets,

that was adopted under the Paris Agreement.

- The proceeds generated from the issuance of such bonds will be deployed in public sector projects which will help in reducing the carbon intensity of the economy.
- This framework will aid in attracting global and domestic investments in eligible green projects.

Green Finance Working Committee:

- Headed by the Chief Economic Adviser, the committee was constituted to select eligible projects for financing through green bonds. The committee consists of members from the Ministry of Environment, NITI Aayog, and Budget Division of Finance Ministry's Economics and others.

Significance of the framework:

- The framework is a powerful tool to create awareness about climate action & sustainable development.
- Green bonds help in enhancing the issuer's reputation by showing their commitment towards climate issues.
- It will catalyse the domestic market and give impetus to institutional investors.
- The framework has been rated as 'Medium Green', with a "Good" governance score by an independent organization- CICERO.

Conclusion:

The development of the Green Bonds Framework will eventually lead to the creation of a vibrant ecosystem

in the country and could enhance India's reputation on global platform.

5 9th Meeting of India-U.S. Economic and Financial Partnership

Why in News:

Indian Union Minister of Finance & Corporate Affairs Smt. Nirmala Sitharaman and United States Treasury Secretary Dr. Janet L. Yellen held the 9th meeting of the India-U.S. Economic and Financial Partnership in New Delhi.

Main features of the Meeting:

- Both countries reaffirmed their commitment to coordinate closely on debt stability, transparency in bilateral debt, and the extension of fair and equitable debt treatment for countries facing debt crisis.
- Both countries also discussed the current headwinds to the global macroeconomic outlook including rising commodity and energy prices, as well as supply-side disruptions, and multilateral cooperation in addressing these global macroeconomic challenges. They emphasized their commitment to the central role of multilateral cooperation in addressing these global macroeconomic challenges.
- Both countries called on the OECD/G20 Inclusive Framework on Base Erosion and Profit Shifting (BEPS) to conclude work on the Multilateral Convention during the first half of 2023. The look forward to the completion of the GloBE (Global Anti-Base Erosion) Implementation Framework and called on member countries and the OECD/G20 Inclusive Framework on BEPS to conclude the negotiations on the Subject to Tax Rule (STTR).
- Both countries reiterated their commitment to take steps to implement the G20 Common Framework for Debt Treatment in a predictable, time-bound, systematic, and coordinated manner.
- Both countries agreed to mobilize USD 100 billion every year till 2025 from public and private sources for developing countries in the context of meaningful mitigation actions and transparency on implementation.
- Further, they discussed mutual cooperation in sharing of information to combat offshore tax evasion. Both

countries will engage in discussions related to the sharing of financial account information for Foreign Account Tax Compliance Act (FATCA).

- Both countries shared re-energized global efforts to increase climate ambition as well as enhance respective domestic efforts to meet publicly expressed climate goals.
- They acknowledged the importance of working through the Multilateral Development Bank System to help India access and mobilize available financing to support development objectives, including climate action. Both plan to continue dialogue multilaterally and bilaterally on these and other global economic issues.

Challenges Before India-US Economic Ties:

- In 2018, the US imposed a 25% tariff on certain steel products and a 10% tariff on certain aluminium products from India and India also countered this with same measures.
- The Atmanirbhar Bharat Campaign has exacerbated the view that India is increasingly becoming a protectionist closed market economy. USA decided to withdraw duty-free benefits to Indian exporters under the GSP programme.
- Consequently, special duty treatment on USD 5.6 billion worth of exports to the US was removed, affecting India's export-oriented sectors such as pharmaceuticals, textiles, agricultural products, and automotive parts. All of these challenges should be resolved soon.

Conclusion:

The ninth meeting of the Economic and Financial Partnership reflected the growing importance of the U.S.-India relationship and the increasing economic and financial ties between the two economies. Both sides eagerly anticipate continued dialogue under the Economic and Financial Partnership and the further strengthening of our bilateral relationship.

6 India's Growing Credit Ecosystem

Why in News:

As per RBI data, non-food bank credit registered a growth of 16.9% in September 2022. At the end of FY22, the total credit market in India stood at Rs 174.3 lakh crore, registering a growth of 11.1% YoY. Retail loans and increasing use of credit cards in the economy are the main factors driving this growth. The demand for loans in India has grown steadily over time as the country's financial sector has grown at a phenomenal rate.

Different Type of Credit System:

- In the past, formal credit was available only for financial products such as personal, auto and home loans.
- Banks and financial institutions (FIs) have recently shifted their focus to products such as credit cards, buy now, pay later (BNPL) and consumer durable loans (credit EMI).
- Traditional banks and new startups focus on attracting new customers by providing access to credit to unbanked populations.

Credit Card:

- India has traditionally always been a debit card market. Over the past ten years, the growth in credit card issuance has changed this, and credit cards are now widely used.
- Innovations such as simplified on boarding processes, unique card products, personalized offers and rewards, and improved mobile apps have proved highly beneficial to existing customers and attracted many new ones.
- Credit card issuance has grown significantly over the past 5 years, growing at a CAGR of 19.8% between FY17 and FY22.
- Even during the Covid-19 restricted years of FY21 and FY22, credit card issuance grew at the rate of 7.46% and 18.66% respectively.

Buy Now, Pay Later (BNPL):

- Buy Now Pay Later (BNPL) is a fast-growing lending technology sector in India, owing to the emergence

of e-commerce and digital payments and the rapid growth of fintech companies.

- Over the years, BNPL has become much more than just a direct payment method; By providing free EMI, it essentially eases the financial stress of the borrowers.
- BNPL has been especially popular among GenZ consumers, young millennials, and first-time borrowers, who are usually ignored or undervalued by traditional banks.
- Some of the features of BNPL are:
 - » The average transaction range is between Rs 1,500-25,000.
 - » The repayment cycle ranges between 15-45 days.
 - » Unlike regular credit cards, BNPL is the only form of low-cost, short-term financing available to people who have never had credit before.

Consumer Durable Loan:

- Due to the growing urban population, increasing consumption income, and availability of low-interest loans, credit EMI, also known as consumer durable loan, is another category of formal loan which is growing at a rapid pace.
- The value of consumer durable loans is expected to grow at a CAGR of 21%. 84 billion in 2020-21 is expected to be 205 billion in 2026-27.

Key Features of Consumer Durable Loan:

- Most players offer instant approval and minimal documentation requirements, while mobile numbers can be used to quickly complete KYC processes.
- Low processing cost, reasonable interest rates, and no-cost EMI are available in some cases.
- Most players do not require a down payment or security deposit.
- The loan tenure ranges from 3-60 months.

Conclusion:

- The RBI in its Payments Vision 2025 document announced plans to link the credit components of

credit cards and banking products to UPI. RBI is also planning to increase India's card acceptance infrastructure across the country, which will further increase the number of card transactions.

7 GST Compensation

Why in News:

The Central Government released an amount of Rs 17,000 crore to the States/UTs for the balance GST compensation for the period April to June, 2022 from compensation cess fund. The total amount of compensation released to the States/UTs so far, including the aforesaid amount, during the year 2022-23 is Rs.1,15,662 crore.

Centre government said that Despite a total cess collection of only Rs 72,147 crore till October, 2022, the Centre has released Rs 43,515 crore from its own resources. With this release, the Centre has released in advance the entire amount of cess estimated till the end of March this year, available for payment of compensation to the states. The decision was taken to assist the states in managing their resources and ensure that expenditure on their programmes, especially capital expenditure, is carried out successfully during the financial year.

About Compensation Cess:

- States are guaranteed compensation for any revenue shortfall below 14% growth (base year 2015-16) for the first five years ending 2022. GST compensation is paid out of Compensation Cess every two months by the Centre to states. The compensation cess was specified by the GST (Compensation to States) Act, 2017.
- All the taxpayers, except those who export specific notified goods and those who have opted for GST composition scheme, are liable to collect and remit the GST compensation cess to the central government.

About the Compensation Cess Fund:

- The GST Act states that the cess collected and the amount as may be recommended by the GST Council would be credited to the fund.

Goods and Services Tax:

- GST was introduced through the 101st Constitution Amendment Act, 2016.
- It is one of the biggest indirect tax reforms in the country.
- The GST has subsumed indirect taxes like excise duty, Value Added Tax (VAT), service tax, luxury tax etc.
- It is essentially a consumption tax and is levied at the final consumption point.
- This has helped mitigate the double taxation, cascading effect of taxes, multiplicity of taxes, classification issues etc., and has led to a common national market.
- The GST that a merchant pays to procure goods or services (i.e. on inputs) can be set off later against the tax applicable on supply of final goods and services.
- The GST avoids the cascading effect or tax on tax which increases the tax burden on the end consumer.

Conclusion:

The Compensation Cess is a Cess that will be collected on the supply of select goods and or services. The Cess will compensate the states for any revenue loss on account of implementation of GST. This Cess will not be payable by those persons who have opted for compensation levy. The input tax credit of this Cess can be only used to pay Compensation Cess and not the other taxes like CGST, SGST, UTGST or IGST.

1 ASEAN Defence Ministers Plus meeting & India-ASEAN Defence Ministers Meet

Why in News:

India attended the Association of Southeast Asian Nations (ASEAN) Defence Ministers plus Meeting (ADMM plus) and India-ASEAN defence ministers meeting at Siem Reap, Cambodia.

ASEAN Defence Ministers Meeting (ADMM):

- It was established in 2006 to promote mutual trust and confidence through greater understanding of defence and security challenges as well as enhancement of transparency and openness.
- It is the highest defence consultative and cooperative mechanism in ASEAN.
- It consists of 10 members of ASEAN.

ADMM-Plus

- ADMM plus consists of 10 ASEAN members and its eight Dialogue Partners which include Australia, India, China, Japan, New Zealand, Korea, Russia and United States.
- The inaugural ADMM plus was convened in Hanoi, Vietnam in 2010. Brunei is the Chair of the ADMM Plus forum for 2021.
- **Aim:** to strengthen security and defence cooperation for peace, stability, and development in the region.
- The 7 areas of practical cooperation include-
 1. Counter-terrorism
 2. Maritime security
 3. Military Medicine
 4. Humanitarian assistance and disaster management
 5. Humanitarian mine action
 6. Cyber Security
 7. Peacekeeping operations

Key Highlights of the Meeting:

- The Defence Minister highlighted the historic and robust ties that India shares with ASEAN countries.
- India-ASEAN relationship was recently elevated to Comprehensive Strategic Partnership.
- **Maritime Security:** India advocates free, open, inclusive and rule-based Indo-Pacific region. It stated that the ongoing ASEAN-China negotiations on Code of Conduct in South China Sea should be consistent with international law, particularly

UNCLOS.

- **Terrorism:** India called for urgent and resolute global efforts to counter the transnational and crossborder terrorism.
- **Other Security Concerns:** India also highlighted other concerns such as Energy security, food security arising out of COVID-19 pandemic.
- The Defence Minister proposed two major initiatives for further expanding the scope and depth of the India-ASEAN defence relations.
 1. 'India-ASEAN Initiative for Women in UN Peace Keeping Operations'- It includes conduct of tailor-made courses for women peacekeepers of ASEAN Member States and conduct a 'Table Top Exercise' in India for women officers incorporating the facets of UN peacekeeping challenges.
 2. 'India-ASEAN Initiative on Marine Plastic Pollution'- It includes channelizing of the energy of the youth towards addressing the critical issue of marine pollution. India also propose establishment of an India-ASEAN Marine Pollution Response Centre at Chennai by Indian Coast Guard.



Way Forward:

The year 2022 has been designated as 'ASEAN-India Friendship Year'. Emphasising on the 'Act East Policy', the forum recognised the importance of the India-ASEAN ties for ensuring peace and stability in the region.

2 Green Mobility Initiative: Indian Air Force Inducted First Batch of EVs

Why in News:

Indian Air Force inducted a fleet of Tata Nexon Electric Vehicles on November 15, 2022 in keeping with the Government of India's initiative on ushering in green mobility. Chief of the Air Staff Air Chief Marshal VR Chaudhary flagged off the first batch of 12 electric vehicles. The flag-off ceremony was held at Air Headquarters, Vayu Bhawan.

The first batch of electric cars have been deployed across Delhi NCR units for performance monitoring and analysis.

Purpose:

- IAF's commitment to the national objective of transition towards environment friendly mobility.
- The Indian Army has collaborated with Tata Powers to set up 16 charging stations for Electric Vehicles (EVs) in line with its 'Go Green Initiative'. Under this, charging stations will be set up at various places in Delhi Cantonment.

Why the Need for Electric Vehicles

- The availability of fossil fuels is limited and their use is destroying our planet.
- Long term adverse effects on public health from toxic emissions from petrol and diesel vehicles.
- The emission impact of electric vehicles is much

lower than that of petrol or diesel vehicles. From an efficiency perspective, electric vehicles can cover about 60% of the electrical energy from the grid to drive the wheels, but petrol or diesel cars can only convert 17%–21% of the energy stored in the fuel to the wheels. This is a waste of about 80%.

- Fully electric vehicles have zero tailpipe emissions while petrol or diesel vehicles emit approximately 3 times more carbon dioxide than the average EV.
- There has been an increase in demand for electric two wheelers, three wheelers as well as electric cars in the luxury segment to reduce carbon foot print and usher in green mobility.

Way Forward:

The Indian Air Force is planning to increase the use of electric vehicles in a progressive manner by procuring e-vehicles against downgraded conventional vehicles. There are also plans to expand the e-vehicle ecosystem, including setting up charging infrastructure at various Air Force bases. This will help India achieve about 40% of cumulative electric power installed capacity from non-fossil fuel-based energy resources by 2030, to reduce the impact of charging electric vehicles.

3 Wangla – The 100 Drums Festival of Meghalaya

Why in News:

Wangala is one of the famous festivals of Meghalaya, which is celebrated with great zeal and enthusiasm by the Garo community. The 3-day festival program of Wangla Mahotsav started on 10th November and continued till 12th November. The festival began with indigenous games and a handloom and handicrafts exhibition which was inaugurated by Chief Executive Member (CEM) of Garo Hills Autonomous District Council (GHADC) – Albinush R Marak.

What is Wangala?

- Wangala Festival is the most popular festival among the Garos of Meghalaya, India. Wangala Festival

is a harvest festival held in honor of Saljong, the sun god of fertility. The celebration of the Wangala Festival marks the end of a period of toil, which brings good produce to the fields. It also marks the arrival of winter. Celebrated since 1976, it is the most important festival of the Garo tribe and attracts a lot of tourists.

Features of Wangla Festival:

- It is also known as 100 Drums Festival.
- On this occasion the tribals offer sacrifices to please their main deity Saljong – the Sun God.
- It is generally celebrated for two days and sometimes continues for a week.

- The ceremony performed on the first day is known as “Ragula” which is performed inside the chief’s house. The second day is known as “Kakkat”.
- Young and old people in their colorful costumes with feathered headdresses dance to the music played on long oval-shaped drums.
- A distinctive feature of this dance pertains to a line of two parallel lines – one of men and the other of women dressed in festive attire. The men beat the drum and the line moves rhythmically.
- It is an occasion to rest and for days the hills and valleys resound with the extraordinary beat of the drums.
- The ‘orchestra’ of men includes drums, gongs and

flutes, punctuated by the harmonious music of a primitive flute made of buffalo horn.

- Young and old participate in the festivities with equal enthusiasm. The performers, young and old, have a remarkable sense of tempo and the energetic dance leaves a lasting impression on the onlooker.

Wangala Festival is a way to preserve and promote the cultural identity of the Garos in Meghalaya. It is a way of showcasing the culture and tradition of the region. Wangala serves as a train of thought adjacent to the Garo community. This festival is used to depict the strength of unity and the effect of togetherness.

4 Bengaluru Tech Summit

Why in News:

The Prime Minister Shri Narendra Modi attended the Bengaluru Tech Summit on November 16, 2022. Following this, the Prime minister stated that “in India, technology is a force of equality and empowerment” and that “India’s Innovative young has assured tech and talent globalisation.”

About Bengaluru Tech Summit:

- Karnataka government hosted the 25th edition of Bengaluru Tech summit. It was a three-day summit that culminated on November 18, 2022.
- 32 nations took part in the summit while 28 new goods were introduced and a total of 12 MoUs were signed.
- The summit marked the launch of a ‘special booster kit’, which is a robust selection of software products and services, offered at a special price, that are specifically designed to meet the needs of young start-ups.
- Following this, the government signed nine MoUs with ecosystem partners, which included Google, Paytm, HDFC, RazorPay, Microsoft, The GAIN, Dayanand Sagar Entrepreneurship Research and Business incubation, AWS Activate, and StrongHer Ventures.

Technology Democratisation and India:

- The term “democratisation of technology” describes the process through which access to technology is made more widely available to people.
- The Prime Minister in the summit informed, India

improved this year from 81st to 40th place in the Global Innovation Index.

- Further, he said since 2021, there have been twice as many unicorn start-ups in India, which now ranks third in the world with 81,000 recognised start-ups.
- The PM discussed how Indian youth now has more access to technology since Broadband connections increased from 60 million to 810 million in the previous 8 years. While 750 million people now use smartphones.

How India Democratised Technology?

- World’s largest health insurance scheme, Ayushman Bharat provides a safety net for nearly 200 million families i.e. 600 million people and Covid vaccination drive, the world’s largest vaccination drive ran on tech platforms.
- The Svamitva plan gave the property record legitimacy and increased access to credit for the underprivileged. JAM ensured Direct Benefit Transfer and became the foundation of various social programmes.
- India will invest more than Rs 100 trillion in infrastructure, as per PM Gati Shakti National Master plan. Using its shared platform the central government, state governments, district administrations, and many departments can collaborate.

Conclusion:

Although, through FDI reforms, or liberalisation of drone rules, initiatives in the semi-conductor sector, the production incentive schemes in various sectors, or the

rise of ease of doing business, India made many excellent factors for the better thriving of tech infrastructure. The need of the hour is to simultaneously work on governance and regulation so that the tech infrastructure can further

consolidate with the upcoming decentralised era of Web 3.0, artificial intelligence, etc.

5 Kashi Tamil Sangamam 2022

Why in the News:

Month-long Kasi Tamil Sangamam has begun at Varanasi. Kashi is the cultural capital of India whereas Tamil Nadu and Tamil culture is the centre of India's antiquity and glory. Idea of 'Ek Bharat Shreshtha Bharat' has been one of the major focus areas of the sangamam.

About Kasi Tamil Sangamam:

- 'Kashi Tamil Sangamam' is an initiative taken by the government to uphold 'Ek Bharat Shreshtha Bharat' and as a part of 'Azadi ka Amrit Mahotsav' with the agenda to re-nurture the old age links between the cultures of Tamil Nadu and Kashi.
- It is a month-long program which began from November 16 and will take place till December 16 in which 12 groups of 2500 people would travel by train to Varanasi from Tamil with the journey points at Chennai, Rameswaram, and Coimbatore, during this one month period.
- The state of Uttar Pradesh is serving as the host. IIT Madras and Banaras Hindu University are serving as the knowledge partners for the program. During the whole Kashi Tamil Sangamam, various academic discussions and seminars will be held between scholars and experts on various topics of the two important and ancient educational centres of India.
- There will be visits to Kashi Vishwanath temple and various other culturally significant places of the state.
- The Sangamam will focus on subjects covering different aspects of knowledge i.e., literature, ancient texts, philosophy, spirituality, music, dance, theatre, yoga, Ayurveda, handlooms, crafts and as modern innovations Trading exchange, Edutech and other next generation technologies.

Cultural Historical Significance of the Kashi Tamil Sangamam:

- As per the Tamil calendar, this time of the year is the 'Karthika masam' which is very auspicious in the history of Tamil Nadu. Various important festivals of not only south states but north states also are celebrated during this time of the year.

- The fact that these two manifestations of Indian culture, although geographically distant, have been deeply and vividly connected for centuries is important. Knowledge seekers from near and far used to come to Kashi and places in and around Prayagraj, Ayodhya, Gorakhpur which are internally connected as knowledge centres. Similarly in Tamil Nadu places like Kanchipuram, Puducherry, Madurai, Thanjavur, Rameshwaram, Srirangam, Kanyakumari, etc were excellent centres of knowledge.
- The Pandya king Parakrama, who ruled the region around Madurai in the 15th century, wanted a temple for the lord Shiva, and he travelled to Kashi (Uttar Pradesh) to bring back a lingam. On his return he stopped to look under a tree but when he tried to continue his journey, the cow wearing the lingam refused to move. Parakrama Pandya understood that this was the wish of the Lord and installed the Lingam there, a place that became known as Sivakasi, Tamil Nadu.
- For devotees who were unable to visit Kashi. The Pandyas had built the Kasi Viswanathar Temple in today's Tenkasi in southwestern Tamil Nadu near the state border with Kerala.

Conclusion:

This sangam is in line with the National Education Policy 2020, which calls for its focus on "nurturing a generation that is rooted and rooted in Indian culture and ethos, as well as in sync with the mind-set of the 21st century.



6 Periodic Labour Force Survey

Why in News:

Recently, the National Statistical Office (NSO) has released the Periodic Labor Force Survey (PLFS).

Key Findings:

- Unemployment rate in urban areas for persons above 15 years of age decreased from 9.8% in July-September 2021 to 7.2% in July-September 2022.
- The unemployment rate stood at 6.6% for men and 9.4% for women (9.3% and 11.6% in July-September 2021). Unemployment ratio is defined as the percentage of persons unemployed among persons in the labour force.
- The Worker Population Ratio (WPR) for persons aged 15 years and above in urban areas stood at 44.5% (42.3% in July-September 2021). The WPR was 68.6% among males and 19.7% among females (66.6% and 17.6% in 2021). WPR is defined as the percentage of employed persons in the population.
- Labour force participation rate increased to 47.9% (46.9% in July-September 2021). It is defined as the percentage of persons in the labour force for persons aged 15 years and above who are working or seeking or available for work in urban areas. LFPR among males was 73.4% and among females was 21.7% (73.5% and 19.9%, July-September 2021).

About Periodic Labor Force Survey:

- Considering the importance of availability of labor force data at more frequent time intervals, the National Statistical Office (NSO), Ministry of Statistics and Program Implementation launched the Periodic Labor Force Survey (PLFS) in April 2017.

Objectives of PLFS:

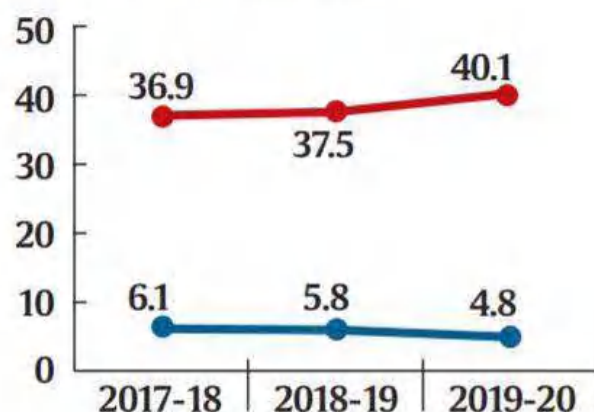
1. To estimate key employment and unemployment indicators (viz. Worker Population Ratio, Labor Force Participation Rate, Unemployment Rate) over a shorter time span of three months for urban areas only in Current Weekly Status (CWS).
2. To estimate the indicators of employment and unemployment in both rural and urban areas.

What is unemployment?

Unemployment occurs when a person who is actively seeking employment cannot find work. NSO defines employment and unemployment on the following activity statuses of a person:

- » Engaged in an economic activity i.e., 'employed'.
- » Looking for work or available for work i.e. 'unemployed'
- » Neither looking for work nor available for work
- » The first two constitute the labour force and the unemployment rate is the percentage of the labour force that is out of work. $\text{Unemployment rate} = (\text{Unemployed workers} / \text{Total labour force}) \times 100$.

CHART-1
RISING LFPR, FALLING UNEMPLOYMENT RATE



■ LFPR * (%)

■ Unemployment rate ** (%)

* Labour Force Participation Rate ** Usual Status

Conclusion:

From the findings of the Periodic Labor Force Survey, it can be assumed that India is on the path of economic recovery and India can retain its position as a major growing economy in the emerging market.

7 Youth's View on Indian Foreign Policy

Context:

The second iteration of India's foreign policy survey report by the Observer Research Foundation (ORF) examines how India's urban youth perceive the structural changes underway in the world order as India celebrates its 75th year of Independence.

Key Highlights:

- Respondents demonstrated a sophisticated understanding of India's foreign policy and the evolving world order.
- So bridging the gap between the policymakers and the public is a necessary step for the country's foreign policy.

Outcomes of the Survey:

Key Turning Points in Foreign Policy:

- The Pokhran nuclear tests, the India-China war, and the Galwan Valley clashes were perceived as key turning points in India's foreign policy.

Biggest Inter-state Foreign Policy Challenge:

- Border conflicts with China were seen as India's biggest inter-state foreign policy challenge – even surpassing conflicts with Pakistan.
- Terrorism and border conflicts with Pakistan remained important challenges for India's foreign policy.
- The majority of respondents also indicated that India's foreign policy of not engaging with Pakistan benefited regional peace and stability.

India-USA Relationship:

- The USA was seen as the second-most trusted partner since its Independence,
- 85% of respondents thought the USA will be India's leading partner in the next 10 years;
- 83% of respondents also agreed that the USA support will be crucial to India's rise.

Russia-India Relationship:

- Many respondents indicated optimism for Russia, despite its invasion of Ukraine; 43% saw Russia as India's most reliable partner since Independence.
- But many showed their awareness of broader geopolitical changes.
- For instance, an overwhelming majority agreed that India's economic ties with Russia are limited and

expressed concerns about strengthening Russia-China ties, and India and Russia drifting away from one another.

- When it came to India's leading partner in the next 10 years, Russia was ranked third, behind the US and Australia.

Indian Interests as the Driver of Foreign Policy:

- Indian interests remained the driver for such a perception.
- For instance, Indian youth preferred non-alignment and neutrality if US-China tensions increase.
- But responses changed when Indian interests were at stake: 73% said that India should align with the US to countervail China.

Importance of Regional Power:

- In a multipolar, more uncertain world order, regional powers are growing in importance.
- Quad found limited enthusiasm among respondents but some members such as Australia and Japan enjoyed a significant positive perception.
- Japan was seen as the most important Indo-Pacific partner in the future, followed by Australia.

Strategic Importance to India's Neighbourhood:

- Despite India's rising stakes in the new world order, young people attached strategic importance to India's neighbourhood.
- Respondents believed India defined its neighbourhood efficiently and followed an adequate foreign policy across all the sectors – security, trade, and culture.

Non-traditional and transnational threats:

- Non-traditional and transnational threats were seen as significant threats.
- The pandemic was considered a bigger challenge to India's foreign policy than border conflicts with China and Pakistan.

Way Forward:

There is a need to enhance political engagement, infrastructure and connectivity projects across the region. Therefore, India needs to continue investing in South Asia and the Indian Ocean region. 9% respondents supported India's bid for a permanent seat in the UN Security Council.

NEWS OF NATIONAL AND INTERNATIONAL IMPORTANCE

1. Food Safety and Standards (Genetically Modified Foods) Regulations, 2022

Prior approval to manufacture, pack, store, sell, market, or import any food or food ingredients produced from GMOs.

If the GMO is to be used as food or source material for the production of food, seed, or other plant-propagation material, approval is required from the Genetic Engineering Assessment Committee (GEAC).

New regulations are proposed under Food Safety and Standards Act (FSSA), 2006 and will apply to:

- Genetically Modified Organisms (GMOs) intended for food use.
- Food ingredients produced from GMOs containing modified DNA.
- GMOs derived ingredients/additives/ processing aids.



2. National Suicide Prevention Strategy

It is announced by the ministry of health and family welfare. About 1.6 lakh suicides were recorded in India during 2021, showing an increase of 7.2% as compared to 2020. Family problems and illness were the main reasons for suicide. Main aim of the strategy:

- To establish an effective monitoring mechanism for suicides within the next three years
- Establishment of psychiatric outpatient departments providing suicide prevention services through the District Mental Health programme in all districts within the next five years.
- Integrate a mental wellness curriculum in all educational institutions within the next eight years.
- Develop guidelines for responsible media reporting of suicides and restrict access to means of suicide.



3. Black-Naped Pheasant Pigeon

After not being seen for 140 years, the Black Naped Pheasant Pigeon was rediscovered in Papua New Guinea. It is a large, ground-dwelling pigeon with a broad tail. The bird usually lives around hilly areas and low mountain areas. It is also found in the lowlands. It is found in the primary rainforests of New Guinea and surrounding islands.



4. Five Deadliest Bacteria of 2019

According to The Lancet study, five bacteria types caused nearly 6.8 lakh deaths in India in 2019. These are E. coli, S. pneumoniae, K. pneumoniae, S. aureus, and A. baumannii which constitute the top 5 deadliest bacterial pathogens. The study shows, that these five bacteria alone are connected to more than half of all deaths (77 lakh) in 2019. In India alone, 6.8 lakh deaths were caused by the 5 bacterial pathogens. The study found that the deadliest bacterial pathogens and types of infection varied by location and age. Common bacterial infections were the second-leading cause of death in 2019 and were linked to one in eight deaths globally.



5. Gandhi Mandela Award

The Gandhi Mandela award, 2022, was recently conferred upon the 14th Dalai Lama. The award, constituted by Gandhi Mandela Foundation, to recognise the people promoting the values and ideals of Mahatma Gandhi and Nelson Mandela by making significant contributions in fields of Peace, Social Welfare, Culture, Environment, Education, Healthcare, Sports, and Innovation.

Gandhi Mandela Foundation:

The Gandhi Mandela Foundation is a Government of India registered trust, which promotes individual freedom, civil liberties, and human rights across the globe. Its headquarter is situated at New Delhi and it is globally present in the nations like USA, Africa, Russia, London, Switzerland, China, Nepal, Bangladesh. The Foundation instituted the Gandhi Mandela Awards at the 150th birth anniversary of Gandhiji to celebrate those who have carried forward that the legacies of Mahatma Gandhi and Nelson Mandela.



6. Digital Personal Data Protection Bill

- The bill narrows down the scope of data protection regime to personal data protection, leaving out the non-personal data.
- Defines personal data as any data about an individual who is identifiable by or in relation to such data.
- Proposes Data Protection Board to ensure compliance.
- Provides concessions on cross-border data flows.
- Centre will notify regions outside India to which data of Indians can be transferred.
- Penalty of up to ₹500 crore for non-compliance, or data breach.
- Allows Centre to exempt state agencies in the interest of national security.
- Proposes Consent Managers, to enable an individual to have a comprehensive view of her interactions with Data Fiduciaries



7. PM Promoted Patan Patola and Mata ni Pachedi

At the G20 summit, the Indian Prime Minister gifted Indian traditional artworks to the world leaders.

Patan Patola (GI-tag Gujrat):

It is an ancient art of double ikat or Patola woven in pure silk. It dates to the 11th century from the area of Patan in North Gujarat. The technique of dyeing is, known as the 'bandhani' process. It is dyed with natural extracts of marigold, onion skin, pomegranate, etc.

Mata ni Pachedi:

It is a handmade textile of Gujarat and an offering in temple shrines that houses the Mother Goddess. It is a religious textile folk art featuring Mother Goddess at the centre and her stories and legends filling the remaining cloth. It is hand-painted, hand-spun cloth of rectangular shape, with natural colours.



8. Climate Change Performance Index (CCPI, 2023)

Recently, the Climate Change Performance Index was published by German Watch, New Climate Institute, and Climate Action Network International based in Germany. India has been ranked among the top 5 countries in the world and the best among G20 countries on climate change performance. According to the Climate Change Performance Index (CCPI, 2023), India has jumped 2 places and is now at the 8th position. India ranks best among all major economies. No country was given first, second or third rank. Denmark, Sweden, Chile, and Morocco are the only four small countries that are above India at the fourth, fifth, sixth, and seventh positions. According to CCPI report, India is on track to meet its 2030 emission targets.



9. LeadIT Summit

India and Sweden hosted the LeadIT Summit on the side-lines of COP27 in Sharm El Sheikh, Egypt. LeadIT initiative focuses on low carbon transition of the hard to abate industrial sector. LeadIT was launched by the Prime Ministers of Sweden and India with support from the World Economic Forum (WEF) during the UN Secretary-General's Climate Action Summit in 2019, in New York. The summit concluded with the adoption of the summit statement by the members of LeadIT which re-emphasized the commitment to continue pursuing the low-carbon transition of the industry. The members also committed to providing technical assistance to the new members and emerging economies.

**WORLD
ECONOMIC
FORUM**

10. Moscow Format Dialogue

Russia hosted the third meeting of the Moscow format of consultations on Afghanistan on October 20. India was present at the joint-secretary level at the meeting.

- During the meeting, the participants discussed issues related to Afghanistan, including the current humanitarian situation and ongoing efforts by various stakeholders to assist, intra-Afghan negotiations, and the formation of an inclusive and representative government.
- The Moscow format is one of several dialogue platforms on Afghanistan – which began before the Taliban takeover of Kabul.
- This includes Russia, China, Pakistan, Iran, Kazakhstan, Tajikistan, Kyrgyzstan, Uzbekistan, Turkmenistan, and India.
- The main objective of the Moscow format of consultations is to facilitate the national reconciliation process to establish peace in Afghanistan.



11. Tamil Nadu's First Biodiversity Heritage Site

The state government of Tamil Nadu recently issued a notification declaring Arittapatti and Meenakshipuram villages in Madurai district as the state's first biodiversity heritage sites under the Biological Diversity Act, 2002.

Biodiversity Heritage Sites (BHS) are notified areas that are unique and ecologically fragile ecosystems that are characterized by species richness, rare, endemic, and threatened species, keystone species, species of evolutionary importance, wild ancestors of domesticated species, etc known to host more than one component.

Areas are important from a biodiversity point of view and cultural aspects such as sacred groves/trees and sites.



12. Karmayogi Prarambh Module

The Karmayogi Prarambh Module was recently launched by Prime Minister Narendra Modi for all those appointed under the Rozgar Mela.

Karmayogi Prarambh Module is an initiative under Mission Karmayogi. Under the module, an online orientation course is given to the new recruits of various government departments.

- This will help new government employees to understand the code of conduct required to adapt to the new role.
- Ethics in the workplace, integrity, HR policies and other benefits, allowances etc. are some of the topics focused on by the module.
- The objective of this online orientation program is to inculcate the essence of Civil Services within the people of the country.

13. Gutti Koya Tribe

Recently a Forest Range Officer (FRO) was allegedly killed by a group of Gutti Koya tribals in Bhadrachalam district of Telangana. The Gutti Koya is a sub-tribe of the Koya tribe that lives in the states of Andhra Pradesh, Telangana, Chhattisgarh and Odisha. They call themselves “Koitor”, which means people. Their mother tongue is koya language - a Dravidian language. They can also speak Oriya and Telugu languages. Most important fair celebrated by Koyas is the Sammakka Saralamma Jatra. It is celebrated once in two years on the full moon day of the Magha Masam (January or February) at Medaram village in Mulug taluk of Warangal district.

14. Exercise Sea Vigil 2022

The third edition of Sea Vigil 2022, an all India coastal defense exercise, was conducted at the national level by the Indian Navy along with the Coast Guard and other ministries involved in maritime activities in November 2022.

The national level coastal defense exercise was conceived in 2018 to validate various measures initiated towards enhancing maritime security since the 26/11 Mumbai attacks.

The objective of the ‘Sea Vigil’ exercise is to activate the Coastal Security Mechanism across India and assess the comprehensive Coastal Defense Mechanism. The inaugural edition of the Sea Vigil exercise took place in January 2019. The second edition of Sea Vigil was to be held in January 2021.



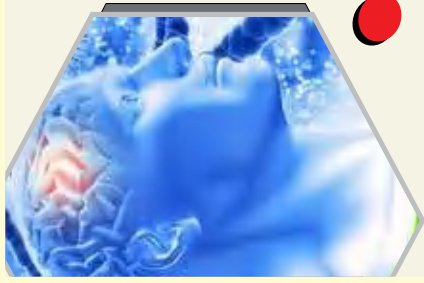
15. Handbook of Statistics on Indian States 2021-22

The Reserve Bank of India (RBI) released a handbook of statistics on Indian states. Kerala (₹837.3), Jammu & Kashmir (₹519), and Tamil Nadu top (₹478) in the daily wage rate for workers. The national average is Rs 323.2. In the case of agricultural and non-agricultural segments too, for which data is available, Kerala was the top payer followed by Himachal Pradesh, while Madhya Pradesh and Gujarat remained the lowest payers. Investments Industrialised states Gujarat and Maharashtra are front-runners in attracting investments, followed by Karnataka. UP, Maharashtra, Andhra Pradesh, and Bihar remained the most populous states in the country. The density of the population remains the highest in the national capital region (NCR) followed by Chandigarh. Grid interactive renewable energy Karnataka topped the total installed capacity of grid-interactive renewable power of all the states of the country, followed by Tamil Nadu, Gujarat, Maharashtra, and Rajasthan.



Current Affairs at a Glance

1. The 25th National Conference on e-Governance was held in Jammu and Kashmir.
2. SARAS Aajeevika Mela, 2022 was inaugurated at the India International Trade Fair in New Delhi. SARAS is an initiative to promote the Indian heritage of handlooms and handicrafts and connect people with rural artisans, weavers, SHGs and federations.
3. Defense Minister Rajnath Singh co-chaired the 4th India-France Annual Defense Dialogue.
4. Union Minister Giriraj Singh launched the month-long national campaign titled “Nai Chetna-Pahal Parivartan Ki” against gender-based discrimination.
5. The three-day Indo-Pacific Regional Dialogue was held from 23 November to 25 November 2022 at the Manekshaw Centre, New Delhi.
6. Union Minister of State for Health, Dr. Bharti Praveen Pawar presented India’s National Statement on Combating Anti-Microbial Resistance (AMR) at the 3rd Global High-Level Ministerial Conference on Antimicrobial Resistance.
7. India announced an additional contribution of USD 5 million to the ASEAN-India Science and Technology Fund to enhance cooperation in the areas of public health, renewable energy and smart agriculture.
8. Beating industrial hubs like Delhi, Karnataka and Tamil Nadu, UP has added the highest number of new companies after Maharashtra since the outbreak of Covid-19.
9. International Geeta Mahotsav was organized in Kurukshetra from 19 November to 6 December in Haryana
10. President Draupadi Murmu has appointed Dr CV Anand Bose as the Governor of West Bengal.
11. The Association of Southeast Asian Nations (ASEAN) has agreed in principle to admit East Timor as the 11th member of the grouping.
12. Pakistan, Ghana and Bangladesh will be among the first recipients of funds from the G7 ‘Global Shield’ initiative to provide money to countries hit by climate disasters, the program was announced at the COP27 summit in Egypt.
13. India’s industrial production as measured by the Index of Industrial Production (IIP) grew by 3.1 per cent in September, supported by double-digit growth in electricity generation.
14. India’s retail inflation, as measured by the Consumer Price Index (CPI), fell to a three-month low of 6.77% in October, down from 7.41% in September.
15. INS Trikand participated in Joint Maritime Forces led Operation “Sea Sword 2” in the Northwest Arabian Sea
16. India-born Nobel laureate Professor Venky Ramakrishnan has been awarded the prestigious Order of Merit by Britain’s King Charles III in recognition of his distinguished service to science.
17. Kerala Tourism has received the prestigious Responsible Tourism Global Award at the World Travel Mart held in London.
18. Tripura Chief Minister Dr. Manik Saha launched a new portal ‘Amar Sarkar’ to act as a bridge between the people and the government.
19. International Day for Tolerance is observed every year on 16 November with the aim of building tolerance among different cultures and spreading the message that tolerance is an integral part of society.
20. Harimau Shakti joint military exercise was held between India and Malaysia.



To facilitate providers of online bond platforms that are selling listed debt instruments, the capital markets regulator Securities and Exchange Board of India (SEBI) has introduced a regulatory framework.

Why in Broadcast

Key Points

- ◆ As per the new regulations, no one can act as an online bond platform without first acquiring a registration certificate from SEBI as a stock broker.
- ◆ Such a person would have to abide by the registration criteria as well as any additional standards the regulator may occasionally specify.
- ◆ Given that SEBI-regulated intermediaries would be supplying the platforms, the move will also increase investor confidence, particularly the non-institutional investors.
- ◆ Anyone operating an online bond platform without a registration certificate, before the date of this regulation coming into effect may do so for a period of three months.

Need of regulating OBPs

- ◆ The number of OBPPs that offer debt securities to non-institutional investors has increased during the last few years.
- ◆ The majority of them are Fintech companies or are supported by stock brokers.
- ◆ Further, there has been a significant increase in the number of registered users who have transacted through them.
- ◆ While OBPs provide an avenue for investors, particularly non-institutional investors to access the bond market, their operations were outside SEBI's regulatory purview.
- ◆ The bond market offers tremendous scope for development, particularly in the non-institutional space.
- ◆ Hence, there is a need to place checks and balances in the form of transparency in operations and disclosures to the investors dealing with such Online Bond Platforms (OBPs).

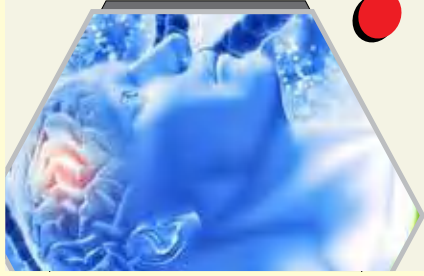
SEBI Framework for Online Bond Providers

About Online Bond Platform

- ◆ As per regulator an online bond platform as any electronic system, other than a recognised stock exchange or an electronic book provider platform, on which the debt securities which are listed or proposed to be listed, are offered and transacted.
- ◆ Further, online bond platform provider means any person operating or providing such a platform.

About Bond Market

- ◆ A bond market is the collective term for all trades and issues of debt securities.
- ◆ Governments issue bond generally to raise capital to pay down debts or fund infrastructural improvements while Publicly traded companies issue bonds to finance business expansion projects or maintain ongoing operations.



The BASIC group, namely Brazil, India, china and South Africa recently called out to avoid discriminatory practices and unilateral measures such as Carbon border tax, that distort the market and aggravate trust deficit among the parties.

Context

About Carbon Border Tax

Carbon Border Tax

The working of CBAM

◆ The CBAM plan works in following way:

- ◆ EU importers will buy carbon certificates corresponding to the carbon price that would have been paid, had the goods been produced under the EU's carbon pricing rules.
- ◆ Conversely, once a non-EU producer can show that they have already paid a price for the carbon used in the production of the imported goods in a third country, the corresponding cost can be fully deducted for the EU importer.

Other nations with similar regime

- ◆ Other than the EU, California in the US applies charges on some electricity imports.
- ◆ Canada and Japan are planning to work on the similar structures.

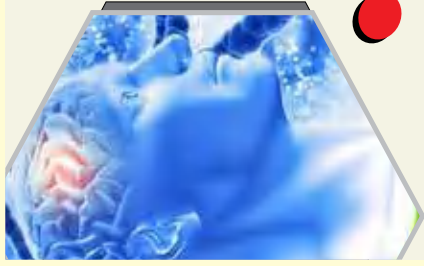
Conclusion

- ◆ Carbon border tax may boost cleaner technology adoption by taxing imported items at borders.
- ◆ However, it would be detrimental to the developing nations if imposed without proper support for emerging technologies and financing.
- ◆ India needs to weigh the advantages and drawbacks that this tax may impose and consequently discuss this through with EU bilaterally.

India's stand on Carbon Border Tax

- ◆ India like other BASIC group countries has called for developing countries to raise voice against unfair shifting of responsibilities from developed to developing countries.
- ◆ The nation has maintained that developed countries cannot push the burden of doing more to tackle climate change while they evade responsibilities themselves.
- ◆ It stated at CoP-27 that all fossil fuels need to be phased down and it is not just coal, which has been targeted by developed nations and on which India is strongly dependent.
- ◆ For India, transition does not mean switching to clean energy but the transition to a low-carbon development strategy over a time scale that ensures food and energy security, growth, and employment, leaving no one behind in the process.

- ◆ The European Union came up with the Carbon Border Adjustment Mechanism (CBAM) in 2021.
- ◆ It is a plan that intends to tax carbon-intensive products (hence, carbon border tax), such as iron and steel, cement, fertiliser, aluminium and electricity generation from 2026.
- ◆ Carbon border tax entails imposing an import tariff on the goods made in a nation with laxer environmental regulations than the one purchasing it.



India submitted its Long-Term Low Emission Development Strategy (LT-LEDS) to the United Nations Framework Convention on Climate Change (UNFCCC) at COP 27 in Sharm el-Sheikh, Egypt.

Under Paris Agreement 2015, countries have to submit two types of climate action plans:

- ◆ Short term
- ◆ Long-term
- ◆ Short-term climate strategy is called Nationally Determined Contributions (NDCs)
- ◆ Submitted every five years.
- ◆ The LT-LEDS is prepared after extensive consultations held by the Environment Ministry with all relevant ministries and departments, state governments, research institutions and civil society organizations

Challenges before India

- ◆ Global carbon budget
- ◆ Failure of the developed countries in fulfilling the commitments regarding finance and technology.
- ◆ Environmental shocks affecting the agriculture.
- ◆ Committing to net-zero will lead to:
 - ◆ Revenue loss for poorer Indian states
 - ◆ Loss in employment opportunities

Why in Broadcast

About LT-LEDS

Key Considerations

- ◆ India's long-term low-carbon development strategy has 4 key considerations:
 - India's contribution to the global warming has been very low despite having a share of ~17% of the world's population.
 - India has significant energy needs for development.
 - India is committed to pursuing low-carbon strategies for development and is actively pursuing them, as per national circumstances.
 - India needs to build climate resilience.

India's LT-LEDS

Salient Features of Long-Term Low Emissions Development Strategy (LT-LEDS)

Sectoral Transformations:

The LT-LEDS has prioritized six strategic sectors- electricity, transport, urban, industry, carbon dioxide removal and forests

- **Electricity Sector-** More renewable energy, demand side reductions and just transition for phase down of coal will be prioritized.
- **Transport Sector-** India will look to transition to cleaner fuels, increase energy efficiency, and aggressive electrification.
- **Urban Sector-** It will have focus on material efficiency of buildings.
- **Industrial Sector-** This will target to improve energy efficiency, electrification, material efficiency and green hydrogen.
- **Carbon Dioxide Removal-** Its inclusion into LT-LEDS show that India is open to new technology and will pilot these for climate change.
- **Forest-** India has strong forest policies and will continue to protect its forests and expand tree cover to act as carbon sink.

Finance and Investments:

- ◆ According to Council on Energy, Environment and Water assessment, India will need \$10 trillion to achieve the 2070 net-zero targets.

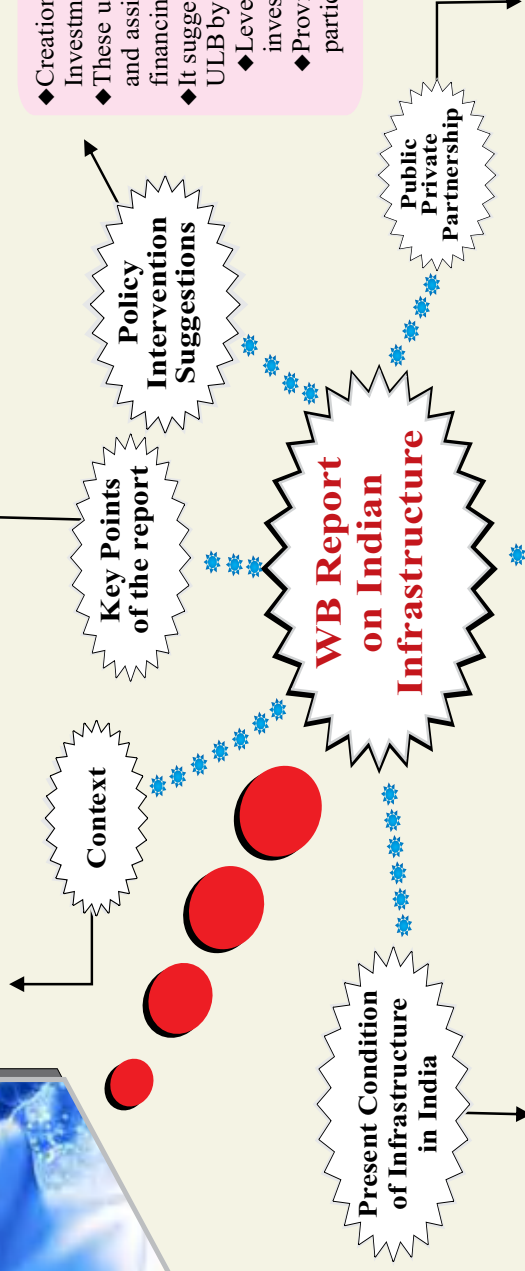
LiFE:

- ◆ LiFE is India's call for citizens, communities, industries and policy makers of the world to adopt a lifestyle for the environment.
- ◆ LiFE elevates the importance of individual contribution to the larger climate goal.



The world bank recently released a report on Indian infrastructure titled, 'Financing India's infrastructure needs: Constraints to commercial financing and prospects of Policy Action'.

- ◆ India has to increase its average annual investment in city infrastructure from \$10.6 billion in the previous ten years to \$55 billion per year which is \$840 billion in next 15 years.
- ◆ It recommended series of policy actions that include switching to more stable, formula based and unconditional fiscal regime for Urban Local Bodies (ULB) both at central and state level.



- ◆ Creation of dedicated structure like 'Cities Investment Support Unit'.
- ◆ These units can focus on infrastructural finance and assist state and cities in their infrastructural financing and management.
- ◆ It suggested to improve the financing avenues of ULB by:
 - ◆ Leveraging more private and commercial investments.
 - ◆ Providing opportunities for more private participation.

**Public
Private
Partnership**

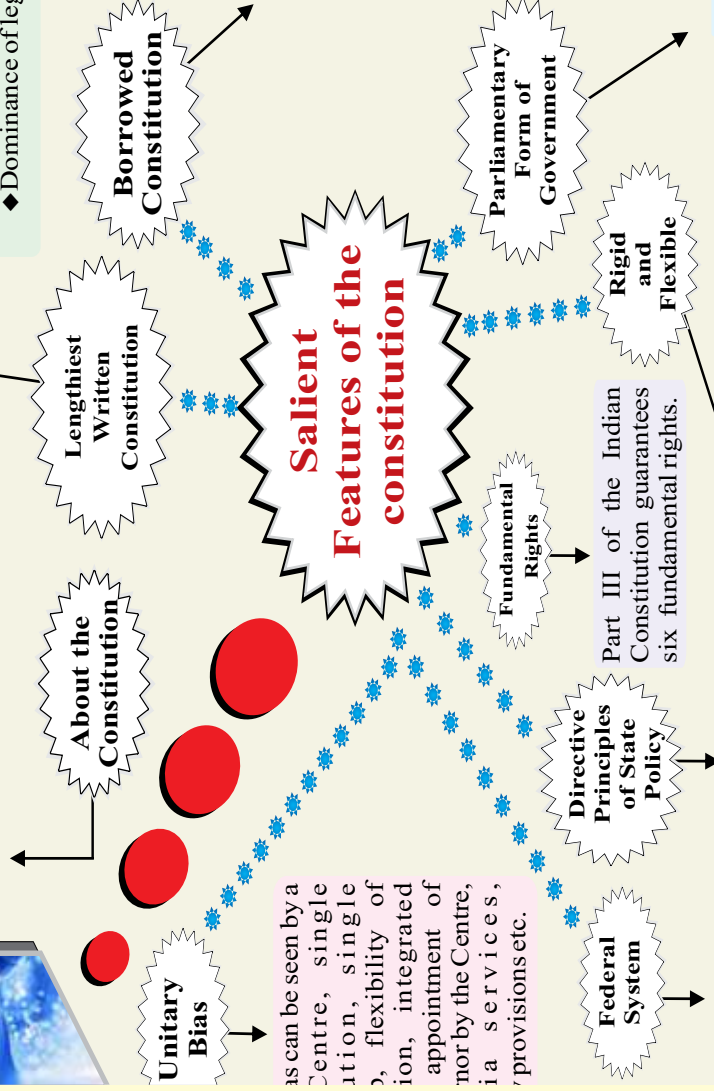
- ◆ India has the second highest infrastructure gap in the world (after Brazil), as it has had rapid growth of more than 6% since the early 1990s without a corresponding rise in supply.
- ◆ The enormous funding shortfall for infrastructure in India, which is thought to be greater than 5% of GDP, is the country's biggest challenge.
- ◆ Obstacles to infrastructure PPPs are
 - ◆ Land acquisition,
 - ◆ Competitive bidding,
 - ◆ Non-performing assets

- ◆ Present urban infrastructure financing,
 - ◆ 75% is done by the Centre and the states.
 - ◆ 15% is made by ULBs through their own surplus revenues.
 - ◆ 5% are financed by the private sector.
- ◆ The annual government investment in urban infrastructure topped \$16 billion (2018) which shows the significance of private investments.
- ◆ The desirable amount of private sector financing through borrowings and public private partnership has not been attained yet.
- ◆ Urban property tax was 0.15% of GDP between 2011 and 2018.
- ◆ Norm for low and middle-income countries is 0.3-0.6%.
- ◆ A low service fee for municipal services also reduces the financial viability and appeal to private investment.

**Other
Observations**

- ◆ The report predicted that by 2036 almost 600 million people will be living in Indian cities representing 40% of the population.
- ◆ It highlighted the significant role of private players for green, smart, inclusive and sustainable urbanization.

The Indian Constitution is unique in its content and spirit. It has many borrowed features from almost every Constitution of the world but the Constitution of India has several salient features that distinguish it from the Constitutions of the other countries.



as can be seen by a Centre, single union, single union, flexibility of union, integrated appointment of nor by the Centre, ia services, 'provisions etc.

stitution of India s a federal system ment. It contains of ment, division of s, written on, supremacy of ion, rigidity of ion, independent ion, bicameralism.

The DPSP's are meant for the promotion of ideal of social and economic democracy. They seek to establish a 'welfare state' in India

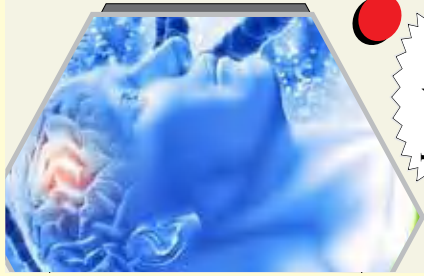
Under Article 368, Constitution can be amended in 2 ways.
In the Kesavananda Bharati case (1973), the Supreme Court ruled that under Article 368 the Parliament can amend the Constitution but it can't alter the 'basic structure' of the Constitution.

- ◆ Constitutions are classified into 2 types
- ◆ written eg India, Germany, France, US
- ◆ unwritten eg UK, New Zealand and Israel.
- ◆ Factors due to which we have such a large constitution are
- ◆ Geographical factors :- Due to vastness and diversity of the country
- ◆ Historical factors:- Due to influence of the Government of India Act of 1935, which was bulky and many other.
- ◆ Single Constitution for both the Centre and the states
- ◆ Dominance of legal experts in the Constituent Assembly

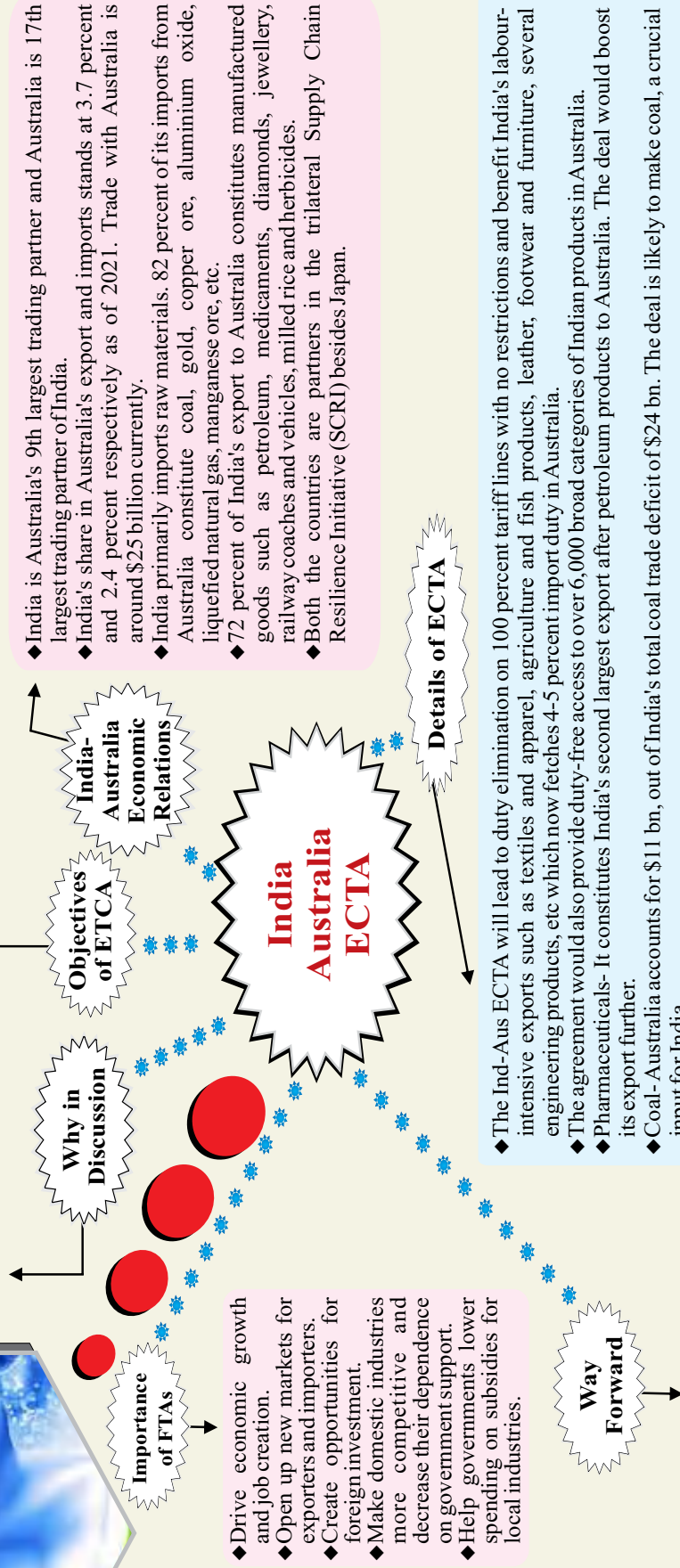
- ◆ Government of India Act of 1935 :- Federal Scheme, Office of governor, Judiciary, Public Service Commissions, Emergency provisions and administrative details
- ◆ British Constitution :- Parliamentary government, Rule of
- ◆ Law, legislative procedure, single citizenship, cabinet system, prerogative writs, parliamentary privileges and bicameralism
- ◆ US Constitution :- Fundamental rights, independence of judiciary, judicial review, impeachment of the president, removal of Supreme Court and high court judges and post of vice-president
- ◆ Irish Constitution :- Directive Principles of State Policy, nomination of members to Rajya Sabha and method of election of President
- ◆ Japanese Constitution :- Procedure established by Law.

The parliamentary system is also known as the 'Westminster' Model of Government, responsible Government and Cabinet Government.

- Features of parliamentary form of government are:-
- ◆ Presence of nominal and real executives
 - ◆ Majority party rule
 - ◆ Collective responsibility of the executive to the legislature
 - ◆ Ministers are members of either of the houses
 - ◆ Prime Minister is the leader
 - ◆ Only Lower House gets dissolved



Recently, the Australian Parliament ratified the India-Australia Economic Cooperation and Trade Agreement (ECTA). This is significant as it is the first such agreement for India with a developed country after more than a decade.



Way Forward

The trade deal will prove to be a milestone in India-Australia relations that will not only increase mutual cooperation, but also significantly contribute to boosting economic growth and the strategic partnership between the two countries.

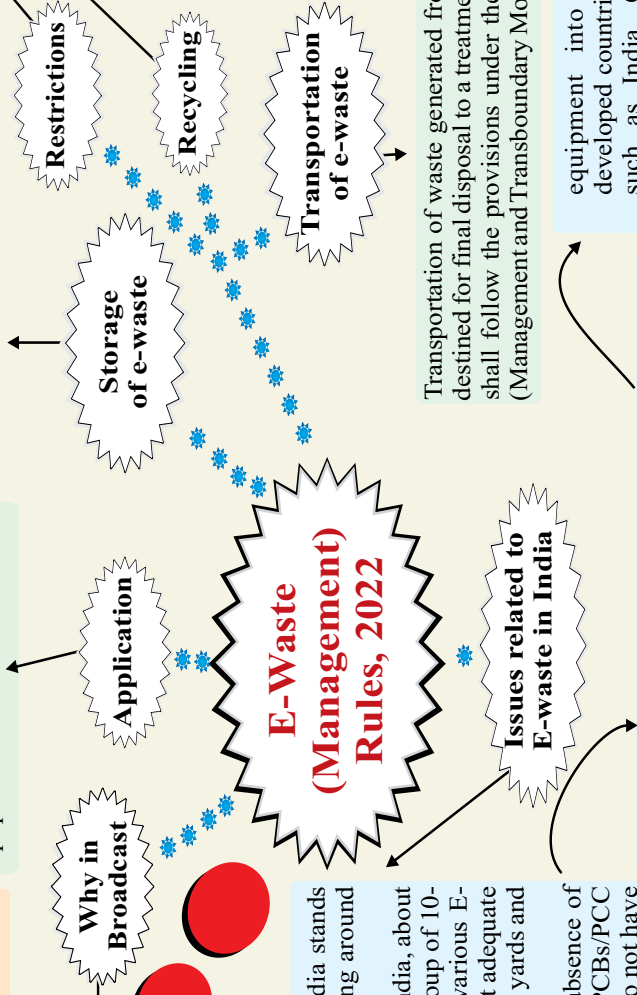


Ministry Of Environment, Forest And Climate Change notified E-waste (management) rules 2022 that will come into force from 1 April, 2023.

These rules shall apply to all manufacturer, producer refurbisher, dismantler and recycler involved in manufacture, sale, transfer, purchase, refurbishing, dismantling, recycling and processing of e-waste or electrical and electronic equipment.

- ◆ Every manufacturer, producer, refurbisher and recycler may store the e-waste for a period not exceeding one hundred and eighty days.
- ◆ He shall maintain a record of sale, transfer and storage of e-wastes and make these records available for inspection and the storage of the e-waste shall be done as per the applicable rules or guidelines for the time being in force.

The government has restricted the use of hazardous substances in manufacturing electrical and electronic equipment (EEE) due to exposure to radioactive material.



- ◆ Manufacturers shall use the technology or methods so as to make the end product recyclable.
- ◆ Manufacturers shall ensure that components or parts made by different manufacturers are compatible with each other so as to reduce the quantity of e-waste.

Transportation of waste generated from manufacturing or recycling destined for final disposal to a treatment, storage and disposal facility shall follow the provisions under the Hazardous and Other Wastes (Management and Transboundary Movement) Rules, 2016.

equipment into India. E-waste generated in developed countries is sent to developing countries such as India, China, Ghana and Nigeria for recycling.

- ◆ **Reluctance of authorities' involved:** Lack of coordination between various authorities responsible for E-waste management and disposal including the non-involvement of municipalities.
- ◆ **Security implications:** End of life computers often contain sensitive personal information and bank account details which, if not deleted leave opportunity for fraud.

ground water. Exposure can cause headache, irritability, nausea, vomiting, and eye pain. Recyclers may suffer liver, kidney and neurological disorders.

- ◆ **Lack of incentive schemes:** No clear guidelines are there for the unorganized sector to handle E-waste. No incentive schemes for producers who are doing something to handle e-waste.

◆ **Poor awareness and sensitization:** Limited reach out and awareness regarding disposal, after determining end of useful life.

◆ **E-waste imports:** Cross-border flow of waste

► **Volume of E-waste generated:** India stands fifth in e-waste generation producing around 1.7 lakhs metric tonnes per annum.

► **Involvement of Child Labor:** In India, about 4.5 lakh child laborers in the age group of 10-14 are observed to be engaged in various E-waste activities and that too without adequate protection and safeguards in various yards and recycling workshops.

► **Ineffective Legislation:** There is absence of any public information on most SPCBs/PCC websites. Most of the PCBs/PCC do not have any information related to E-waste on their websites, their key public interface point.

► **Lack of infrastructure:** There is huge gap between present recycling and collection facilities and quantum of E-waste that is being generated. No collection and take back mechanisms are in place. There is lack of recycling facilities.

► **Health hazards:** E-waste contains over 1,000 toxic materials, which contaminate soil and

MCQs based on Preliminary Exam

- 01. While recommending Minimum Support Prices (MSPs), the Commission for Agricultural Costs and Prices (CACP) looks at which of the following factors?**
1. The market price trends at both domestic and international level
 2. The likely implications of an MSP on consumers of that product
 3. A minimum of 30 per cent as the margin over the cost of production
 4. Inter-crop price parity
- Select the correct answer from the code given below:
- (a) 1, 2 and 3 (b) 1, 3 and 4
(c) 1, 2 and 4 (d) 1, 2, 3 and 4
- 02. Battle of Saraighat was fought between:**
- (a) Marathas and Rajputs
(b) Mughal Empire and Ahom Kingdom
(c) Marathas and Afghans
(d) Marathas and Ahom Kingdom
- 03. Shigmo, a harvest festival is mainly celebrated in:**
- (a) Goa (b) Assam
(c) Maharashtra (d) Tripura
- 04. Jaapi, Xorai and Gamosa are primarily associated with which state?**
- (a) Manipur (b) Nagaland
(c) Assam (d) Mizoram
- 05. Which of the following committees suggested privatisation of some operations in Indian Railways?**
- (a) Usha Thorat Committee
(b) N. Gopalaswami Committee
(c) Subhash Garg Committee
(d) Bibek Debroy Committee
- 06. Internationalization of Rupee would mean:**
1. Paying in rupees both for imports and exports
 2. Repaying in rupees for the bonds issued globally
 3. Accumulating Indian rupee as a reserve currency all over the world by the central banks
- Which of the above statement/s is/are correct?
- (a) 1 and 2 (b) 1 and 3
(c) 2 and 3 (d) 1, 2 and 3
- 07. Consider the following statements regarding Wholesale Price Index (WPI) and Consumer Price Index (CPI):**
1. WPI pertains to only goods, not services.
 2. WPI captures the average movement of wholesale prices of goods and is primarily used as a GDP deflator.
 3. WPI has a higher weight of manufactured goods and the CPI has a greater constitution of food items.
 4. RBI considers WPI as the main metric for the purpose of setting monetary policy.
- Which of the above statement/s is/are correct?
- (a) 1, 2 and 3 (b) 1 and 3
(c) 1, 3 and 4 (d) 2, 3 and 4
- 08. The terms kanal and marla, used during British rule in India denotes:**
- (a) Irrigation system
(b) Types of Barter system
(c) Land measurement units
(d) Units of currency
- 09. The UNESCO Intangible Cultural Heritage can be in which of the following forms?**
1. Oral traditions and expressions
 2. Social practices
 3. Knowledge and practices concerning nature
 4. Traditional craftsmanship
- Select the correct answer from the code given below:
- (a) 1, 2 and 4 (b) 1 and 4
(c) 1, 2 and 3 (d) 1, 2, 3 and 4
- 10. The National Investigation Agency Act, 2019 has empowered the National Investigation Agency to investigate which of the following cases?**
1. Terror cases involving Indians and Indian interests abroad
 2. Cases of cybercrime
 3. Cases of human trafficking
- Select the correct answer from the code given

below:

- (a) 1 only (b) 1 and 2
(c) 2 and 3 (d) 1, 2 and 3

11. Which of the following cities were the metropolis of Indus Valley Civilisation (IVC)?

1. Ganweriwala
2. Rakhigarhi
3. Dholavira
4. Harappa

Select the correct answer from the code given below:

- (a) 3 and 4 (b) 1, 3 and 4
(c) 2, 3 and 4 (d) 1, 2, 3 and 4

12. Consider the following statements regarding Dholavira:

1. Here the walls were made of sandstone or limestone instead of mud bricks in many other Harappan sites.
2. Extensive mortal remains of humans have been discovered at Dholavira.
3. It was also a hub of manufacturing jewellery made of shells and semi-precious stones.

Which of the above statement/s is/are correct?

- (a) 1 and 2 (b) 1 and 3
(c) 3 only (d) 1, 2 and 3

13. Consider the following statements:

1. After undergoing several changes, the Tricolour flag was adopted as our national flag at a Congress Committee meeting in Karachi in 1931.
2. The Indian flag was adopted in its present form during India's independence on August 15, 1947.

Which of the above statement/s is/are correct?

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

14. Consider the following statements regarding Off-budget borrowing:

1. Off-budget borrowing helps keep the country's fiscal deficit within acceptable limits.
2. Off-budget borrowing is not a part of the calculation of the fiscal indicators and does not have any fiscal implications.
3. Public sector banks are not authorised to fund off-budget expenses.

Which of the above statement/s is/are correct?

- (a) 1 only (b) 1 and 3
(c) 2 and 3 (d) 1, 2 and 3

15. Consider the following statements:

1. The northern Indian Ocean experiences a quarter of world's tropical storms.
2. The impact of tropical storms on the Indian subcontinent is severe due to a dense population and poor capacity to absorb large quantities of rainfall in a short period.

Which of the above statement/s is/are correct?

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

16. Consider the following statements regarding Brahmani River Basin:

1. Brahmani is the tributary of the River Ganga.
2. Together with the river Baitarani, it forms a large delta before emptying into the Bay of Bengal.
3. It is famous for Mangrove vegetation.

Which of the above statement/s is/are correct?

- (a) 1 and 2 (b) 1 and 3
(c) 2 and 3 (d) 2 only

17. Sea level rise occurs mainly due to:

1. Expansion of warm ocean waters
2. Melting of glaciers on land
3. Melting of ice sheets in Greenland and Antarctica

Select the correct answer from the code given below:

- (a) 1 and 2 (b) 1 and 3
(c) 3 only (d) 1, 2 and 3

18. In which of the following situation(s) we can say that monsoon has withdrawn from northwest India?

1. If there is cessation of rainfall activity over the area for three consecutive days.
2. An anti-cyclonic wind has to form over the lower troposphere and there is considerable reduction in moisture content.

Select the correct answer from the code given below:

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

19. Consider the following statements:

1. When Geomagnetic reversal occur, the

animals that use Earth's magnetic field for navigation like sea turtles could get lost during their routine journeys.

2. An increase in the temperature due to climate change, can become a threat to the genetic diversity of sea turtles.

Which of the above statement/s is/are correct?

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

20. Consider the following statements regarding Droughts:

1. Drought is the consequence of a natural reduction in the amount of precipitation over an extended period of time, usually a season or more in length.
2. Drought is often associated with high winds, high temperatures and high relative humidity.
3. Agricultural Drought occurs when available soil moisture is inadequate for healthy crop growth and cause extreme stress and wilting.

Which of the above statement/s is/are correct?

- (a) 1 and 2
- (b) 1 and 3
- (c) 2 and 3
- (d) 1 only

21. Which of the following recommendation(s) has/have been given by Punchhi Commission to improve Centre-State relations?

1. Steps should be taken to uniformly implement the three-languages formula in its true spirit.
2. Governors should be given a fixed tenure of five years and their removal should not be at the will of the Government at the Centre.
3. New All-India Services in sectors like health, education, engineering and judiciary should be created.

Select the correct answer using the code given below:

- (a) 1 and 2 only
- (b) 3 only
- (c) 2 and 3 only
- (d) 1, 2 and 3

22. Which of the following types of crime comes under the purview of investigation of the Central Bureau of Investigation?

1. Bank frauds
2. Foreign Exchange violations
3. Smuggling of cultural property
4. Poaching of wildlife
5. Incidents of terrorist attacks

6. Adulteration of drugs and food products

Select the correct answer using the code given below :

- (a) 1, 2 and 4 only
- (b) 2, 3 and 5 only
- (c) 3, 4, 5 and 6 only
- (d) 1, 2, 3, 4 and 6 only

23. Consider the following statements regarding the 'Directive Principles of State Policy':

1. They aim at establishing 'political democracy' in the country.
 2. The courts can uphold the validity of a law on the ground that it was enacted to give effect to a directive.
 3. They promote the welfare of the individual.
- Which of the statement/s given above is/are correct?

- (a) 1 and 3 only
- (b) 2 only
- (c) 2 and 3 only
- (d) 1, 2 and 3

24. Which of the following petitions do not fall under various categories entertained as PIL?

1. Petitions against police for refusing to register a case
2. Matters related to family pension
3. Landlord-tenant matters
4. Matters related to admission to medical and other educational institutions

Select the correct answer using the code given below :

- (a) 1, 2 and 4 only
- (b) 1 and 3 only
- (c) 3 and 4 only
- (d) 1, 2 and 3 only

25. With reference to the structural composition of the economy, which of the following statement/s is/are correct?

1. At higher levels of development, the service sector contributes more to the GDP than the other two sectors.
2. In the post 1991 period the share of the service sector in India has been, like what we find in developed nations.
3. In Indian Economy, industrial sector never attain highest share in the economy.

Select the correct answer using the code given below :

- (a) 1 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

26. With reference to the Banking System,

consider the following statements:

1. Central bank is the exclusive source for money creation in the country.
2. Commercial banks are also a part of the money-creating system of the economy.

Which of the statement/ s given above is/are correct?

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

27. Consider the following pairs:

Type of exchange rate	Provisions
-----------------------	------------

- | | |
|----------|--|
| 1. LERMS | : Start of floating exchange rate in India |
| 2. NEER | : Includes adjustment of weight |
| 3. REER | : Weighted average of exchange rate |

Which of the pair/s given above is/are correctly matched?

- (a) 1 only (b) 2 and 3 only
(c) 1 and 3 only (d) 1, 2 and 3

28. With reference to the Nano-Technology, consider the following statements:

1. Programmable matters are those whose properties are reversible.
2. Nanomaterials are those which can be both natural or manmade.

Which of the statement/s given above is/are correct?

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

29. Consider the following statements regarding Jainism and Buddhism:

1. They, in their initial stages, did not support the Varna System.
2. They were not in favour of promoting trade and commerce.
3. They condemned the persons living on interest.

Which of the given above similarities between Jainism and Buddhism is/are correct?

- (a) 2 only (b) 3 only
(c) 1 and 2 only (d) 1 and 3 only

30. Which of the following difference/s between the Harappan civilization and Egyptian

civilization is/ are correct?

1. In Egypt, the daughter inherited the throne or property but the nature of inheritance in Harappan society was absent.
2. The artistic work made of stone was massive in Harappan civilization as compared to the Egyptian civilization.

Select the correct answer using the code given below:

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

31. Consider the following statements about the architectural features of the Early Historic period:

1. The Mauryan architecture depicts the influence of both Persian and Greeks.
2. The gateways of the Sanchi Stupa are depicted with Floral motifs.
3. Under Gandhara school of art, the statues of Buddha were made in the likeness of Greek gods.

Which of the statement/s given above is/are correct?

- (a) 3 only (b) 2 only
(c) 1 and 2 only (d) 1 and 3 only

32. Which of the following temples were built during the reign of Pallava rulers?

1. Shore Temple
2. Vaikuntha Perumal Temples
3. Kailashnath Temple
4. Brihadeshwara Temple

Select the correct answer using the code given below:

- (a) 1 and 4 only (b) 2 and 3 only
(c) 1, 2 and 4 only (d) 1, 2 and 3 only

33. Regarding the condition of the people during the early Medieval period of India, which of the following statement/s is/are correct?

1. There was no decline in the high standard of Indian handicrafts.
2. Indian agriculture started declining continuously.
3. The marriageable age for girls was increased while women were denied the right to study the Vedas.

Select the correct answer using the code given

below:

- (a) 1 only (b) 2 only
(c) 1 and 2 only (d) 1 and 3 only

34. With reference to the reasons behind sending the Cripps Mission to India, which of the following statement/s is/are correct?

1. Fear of Japanese threat to invade India, made Indian support crucial for Allied powers.
2. Indian nationalists denied their support to the Allied powers at any cost.

Select the correct answer using the code given below :

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

35. Regarding the Trade Union Act, 1926, which of the following statement/s is/are correct?

1. This act recognised trade unions as legal associations.
2. It laid down conditions for registration and regulation of trade union activities.

Select the correct answer using the code given below:

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

36. Consider the following statements regarding various continents:

1. Asia continent is one-third of the total land area of the earth.
2. Europe is the only continent through which Arctic Circle passes.
3. Africa is the only continent through which the Tropic of Cancer, the Equator and the Tropic of Capricorn pass.

Which of the statement/s given above is/are correct?

- (a) 1 only
(b) 2 and 3 only
(c) 1 and 3 only
(d) 1, 2 and 3

37. Which of the following condition(s) describe(s) 'Deadweight Loss' Income?

1. When the price is too high, there is an excessive amount of the product for sale compared to what people want.
2. When the price is too low, it causes consumers

to want more of the product than producers have available.

Select the correct answer using the code given below:

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) Neither 1 nor 2

38. On the basis of the following disqualifications, a person cannot become a Member of Parliament or the membership of a retained member can be terminated. Here what is/ are those disqualification/s which are finally decided by the President?

1. He may have been convicted under electoral offence or corrupt conduct in elections.
2. He has been sentenced to two years or more in an offence.
3. He voluntarily renounces the political party on which he has been elected on the ticket.

Select the correct answer using the code given below :

- (a) 3 only (b) 1 and 2 only
(c) 1 and 3 only (d) 1, 2 and 3

39. If you are a student of higher education but a group of people in your neighbourhood are staging a dharna against any law which has been formed by the government, due to which you are unable to go to your university and there is a huge noise in the locality. In this situation, which of your right/ rights given by the constitution is/are being violated?

1. Article 19(1)(d)
2. Article 21(a)
3. Article 21

Select the correct answer using the code given below:

- (a) 3 only (b) 1 and 2 only
(c) 1 and 3 only (d) 1, 2 and 3

40. Which of the following statement/s explains/ explain the limitations of the Indian Constitution?

1. The concept of national unity is very centralized in the Indian Constitution.
2. The Indian Constitution does not properly address some important issues of gender justice, particularly those relating to families.

3. It includes some basic social- economic rights in the directive principles of state policy instead of inclusion in fundamental rights.

Select the correct answer using the code given below :

- (a) 3 only (b) 1 and 2 only
(c) 1 and 3 only (d) 1, 2 and 3

41. What is/are the reason(s) for rejecting the proportional representation system for the election of Lok Sabha members by the constituent assembly?

1. Difficulty in understanding voting process for voters.
2. Stability of Parliament due to multi-party system.
3. It is a very expensive system.
4. It does not provide any opportunity for by-election.

Select the correct answer using the code given below :

- (a) 1, 3 and 4 only (b) 1 and 2 only
(c) 1, 2 and 3 only (d) 1, 2, 3 and 4

42. In the context of the G20 group countries, consider the following statements:

1. Its members' participation in global GDP is more than 80% as well as 75% in global trade and more than 60% in global population.
2. The main objective of this group is to build an innovative international financial structure.
3. India is a founding member of this group.

Which of the statement/s given above is/are correct ?

- (a) 3 only (b) 2 only
(c) 1 and 3 only (d) 1, 2 and 3

43. Which of the following mission/s has/have been launched out for exploration of Venus in space?

1. Venera Series
2. Mariner Series
3. Magellan Mission
4. Venuskai Mission

Select the correct answer using the code given below :

- (a) 4 only (b) 1 and 2 only
(c) 1, 2 and 3 only (d) 1, 2, 3 and 4

44. Which of the following is / are the characteristic/s of narrowband internet of things (NB-IOT)?

1. It is a wireless communication standard for internet of things, it falls under the category of local area network.
2. It helps in connecting devices that require less data and low bandwidth.
3. These are operated at LTE base stations from where resource blocks can be allotted for NB-IOT operations.

Select the correct answer using the code given below:

- (a) 3 only (b) 1 and 2 only
(c) 2 and 3 only (d) 1, 2 and 3

45. Consider the following statements in the context of Indian Mathematician Shrinivasa Ramanujam:

1. He presented the modular function which is used in String Theory of theoretical physics.
2. His birthday in India is celebrated as National Mathematics Day.
3. He worked on topics such as hypergeometry series, reman series, elliptical integral, divergent range theory and functional equation of Zeta function.

Which of the statement/s given above is/are correct ?

- (a) 3 only (b) 1 and 2 only
(c) 2 and 3 only (d) 1, 2 and 3

46. What is Tokamak?

- (a) An experimental magnetic fusion device designed to harness the energy of fusion.
- (b) A hypersonic missile with Mac No. 10.
- (c) A missile that has the same capability as an S400 missile.
- (d) A hypersonic missile capable of carrying nuclear weapon.

47. Consider the following statements in respect of Securities Transaction Tax (STT):

1. This tax is applicable to shares, bonds, debt letters, currency derivatives, equity oriented mutual funds, etc.
2. It does not apply to government securities.
3. Its purpose is to encourage tax avoidance and expand taxation.

Which of the statement/s given above is/are correct ?

- (a) 2 only (b) 1 and 2 only
(c) 2 and 3 only (d) 1, 2 and 3

48. Which of the following is / are the effect(s) of contract farming?

1. It reduces the risks of production, price and marketing costs.
2. It creates an environment to open new markets.
3. It makes small scale agriculture competitive.
4. It exploits the farmers.

Select the correct answer using the code given below:

- (a) 4 only (b) 1 and 2 only
(c) 1, 2 and 3 only (d) 1, 2, 3 and 4

49. In which of the following situations, can the

revenue deficit and fiscal deficit be equal?

- (a) If revenue expenditure is equal to revenue receipts
(b) If capital expenditure is equal to non-debt capital receipts
(c) Such a situation is not possible.
(d) If capital expenditure is equal to capital receipts

50. Buffer stock operation in India is / are operated by which of the following ?

1. By the National Agricultural Cooperative Marketing Association of India.
2. By Food Corporation of India.
3. By Small Farmers Agricultural Trade Association.
4. By Price Stabilization Fund Management Committee.

ANSWER

- | | | |
|---------|---------|---------|
| 1. (c) | 18. (b) | 35. (c) |
| 2. (b) | 19. (c) | 36. (c) |
| 3. (a) | 20. (b) | 37. (c) |
| 4. (c) | 21. (c) | 38. (b) |
| 5. (d) | 22. (d) | 39. (c) |
| 6. (d) | 23. (b) | 40. (d) |
| 7. (a) | 24. (c) | 41. (b) |
| 8. (c) | 25. (d) | 42. (d) |
| 9. (d) | 26. (c) | 43. (c) |
| 10. (d) | 27. (a) | 44. (c) |
| 11. (d) | 28. (c) | 45. (d) |
| 12. (b) | 29. (d) | 46. (a) |
| 13. (a) | 30. (a) | 47. (b) |
| 14. (a) | 31. (d) | 48. (c) |
| 15. (b) | 32. (d) | 49. (b) |
| 16. (c) | 33. (a) | 50. (d) |
| 17. (d) | 34. (a) | |

MCQs Based on Current Affairs

1. 'Digital Shakti Campaign' is related to which of the following?

- A. Raising nutritional awareness among women
- B. Empowering Women digitally
- C. Physical fitness of mothers
- D. Empowering women legally

Answer- (B)

2. recently released Network Readiness Index is prepared by which of the following institute?

- A. International Telecommunication Union
- B. Portulans Institute, US
- C. Transparency International
- D. UNESCO

Answer- (B)

3. Consider the following statements on the 19th ASEAN-India Summit.

- 1. This conference has been held in Phnom Penh, the capital of Cambodia.
- 2. India was led by Vice President Jagdeep Dhankhar.
- 3. This year marked the 40th anniversary of ASEAN-India relations.
- 4. Had a wide ranging discussion on human resources, de-mining and development projects, cyber security, smart agriculture, tourism etc.

Select the correct answer using the code given below :

- A. 1, 2 and 3
- B. 3 and 4
- C. 1, 2 and 4
- D. 3 only

Answer: (C)

4. The inaugural meeting of ADMM-Plus was organized at

- A. Hanoi
- B. Brunei
- C. Siem Reap
- D. Malaysia

Ans- (C)

5. Consider the following statements regarding global conference on "Right to a Drug-Free Childhood".

- 1. It was organized by Fourth Wave Foundation in

collaboration with United Nations Office on Drugs and Crime (UNODC)

- 2. It was held in Gujarat.

3. National Action Plan for Drug Demand Reduction (NAPDDR) survey conducted by the Narcotic Control Bureau.

Which of the above statement(s) is/are correct?

- A. 1 and 3
- B. 2 and 3
- C. 1 only
- D. 1, 2 and 3

Answer- (A)

6. Consider the following statements related to Operation Barkhane.

- 1. This counter-insurgency operation was launched on 1 August 2014.
- 2. Its purpose was to assist local armed forces in preventing the resurgence of non-state armed groups in the Sahel region
- 3. It was being led by the US Army.
- 4. It has been abolished on November 9, 2022.

Select the correct answer using the code given below :

- A. 1, 2 and 3
- B. 3 and 4
- C. 1, 2 and 4
- D. 3 only

Answer: c)

7. Who among the following can join the National Pension Scheme (NPS)?

- A. Resident Indian citizens only
- B. Persons of age from 21 to 55 only
- C. All state government employees joining the services after the date of notification by respective state governments
- D. All central government employees including those of armed forces joining the services on or after 1st April, 2004

Answer- (C)

8. Local currency account maintained by a domestic bank for a foreign bank is called-

- A. Vostro Account
- B. Nostro Account
- C. LORO Account

D. None of the above

Answer- (A)

9. Consider the following statement(s) regarding National Financial Reporting Authority (NFRA).

1. NFRA is a constitutional body.
2. Its account is monitored by the Comptroller and Auditor-General of India.
3. It recommends accounting and auditing policies to be adopted by the companies.

Choose the correct options.

A. 1,2,3 B. 2 and 3

C. 3 only D. 1 and 2

Answer- (B)

10. With reference to the recently released Green Bonds framework, which of the given statement(s) is/are correct?

1. India's first green bond was issued by the State Bank of India in 2015.
2. Proceeds from Green Bonds issuance can be mobilized for nuclear power generation.
3. In India, SEBI regulates the norms of Green Bonds.

Select the correct answer using the code given below-

A. 1,2,3 B. 1,2

C. 1,3 D. 3 only

Answer- (D)

11. Consider the following statement(s) related to Wangala Festival

1. The Wangala Festival is held in honor of Saljong, the sun god of fertility.
2. It marks the arrival of summer.
3. It is also known as the 100 Drums Festival.
4. It is most popular among the Garo community of Meghalaya state.

Select the correct answer using the code given below :

A- 1, 2 and 3 B- 2 and 4

C- 2 only D- 1, 3 and 4

Answer: (D)

12. India recently signed Free Trade Agreement, ECTA with which of the following countries?

- A. Israel
- B. United Kingdom

C. Australia

D. Indonesia

Answer- (C)

13. Carbon Cap Adjustment Mechanism is a scheme to tax carbon-intensive products, proposed by?

- A. UN Environment
- B. European Union (EU)
- C. Intergovernmental Panel on Climate Change (IPCC)
- D. World Trade Organization (WTO)

Answer- (B)

14. Consider the following statements.

1. In a narcoanalysis test, a drug is injected into the body of the accused, which puts them into a hypnotic or unconscious state, in which their imagination is neutralized.
2. A polygraph test is based on the assumption that physiological responses when a person is lying are different than before
3. Both Narcoanalysis Test and Polygraph Test are scientifically proven to have 100% success rate.

Which of the above statements is/are correct?

- A. 2 only
- B. 1, 2
- C. 2, 3
- D. 1, 2, 3

Answer- (B)

15. No Money for Terror (NMFT) conference as an initiative

- A. United Nations Security Council (UNSC)
- B. Financial Action Task Force (FATF)
- C. World Bank
- D. None of the above

Answer- (B)

16. Which of the following missions aims to take humans to the Moon?

- A. Chandrayaan-3
- B. Parker Mission
- C. Artemis Mission
- D. Osiris-Rex mission

Answer- (C)

Personality



Jagdish Chandra Bose

India's great scientist Jagdish Chandra Bose was born on November 30, 1858, in the village of Mymensingh (present Bangladesh). India's famous physicist and plant physiologist Bose has written his experience and research in his books. Some of the major books are - Reactions of living and non-living (1902), Reaction of plants (1906), Motivational mechanics of plants (1926), etc. Jagdish Chandra Bose was the first Indian scientist to study radio and microwaves. He proved with his knowledge and invention during the Swadeshi movement that India also has the capability of scientific research and invention. Bose was such a scientist who had brought a revolution in plant research by developing an instrument like the crescograph. They used wireless communication by radio waves before the scientist Marconi.

Basu's contribution is significant in the functioning of microwave ovens including various communication media, such as radio, television, radar, remote sensing. Today the whole world considers Bose as the co-inventor of the radio along with Marconi for his pioneering work in wireless communication.

Bose found a way to produce very small waves, and also developed an advanced form of Heinrich Hertz's receiver. After some time, everyone was surprised to know that before Marconi's wireless receiver was invented, Jagdish Chandra Bose had discovered it. Bose had used wireless communication by

radio waves in the year 1885, even before Marconi's discovery. Bose created such an instrument, which could generate micro-waves from 25 millimeters to 5 millimeters. The device was so small that it could be carried anywhere in a small box. He showed a completely new type of radio wave at that time to the world, which was from one centimeter to five millimeters. Bose was the first to show that electromagnetic waves can reach a distant place with the help of air. These waves can also control an action from another place. His concept later became the theoretical basis for remote control systems.

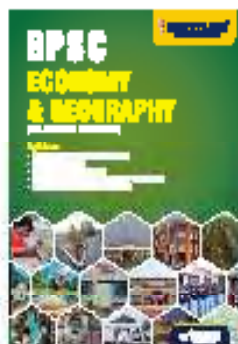
Many microwave devices in use today like wave guides, polarizers, dielectric lenses, semiconductor detectors for electromagnetic radiation. All these devices were invented and used by Bose in the last decade of the nineteenth century. It was Bose who told the existence of electromagnetic radiation coming from the Sun, which was confirmed in 1944. Bose has been inducted into its 'Wireless Hall of Fame' by the Institute of Electrical and Electronics Engineers for his work. Bose has made unprecedented contributions in the field of plant science. Bose studied the effect of electrical signals on plant cells. His experiments were pointing to the fact that all plant cells have sense. Action potentials can be generated in plants due to cold, heat, cutting, touch and electrical stimulation as well as external moisture. He created sensitive instruments that could record even the most subtle biological actions of plants at the physical, chemical, mechanical or electrical level. From the year 1901, Bose used Chui-mui (Touch me not) or Mimosa pudica and Shalparni or Desmon diumgyrens for his experiments. If you touch the leaves of Mimosa, they start bending towards each other. Bose used a pulsation recorder to compare the electrical pulse of the Dismodiumgyrans with the recorded heart rate of the organism. Bose himself made a very sensitive device to measure the slow growth of plants. He named this instrument the Crescograph. This device had the ability to automatically record the growth of the plant by increasing it ten thousand times. Basu showed that plants feel pain just like us. If plants are cut or poison is put in them, then they also suffer and they can even die. Another study area that attracted Basu was the uptake of water in plants from roots to stems and leaves. The water that plants absorb also contains many types of carbon and inorganic elements. The climbing of this water mixture in plants is called "ascent of sap". Jagdish Chandra Basu laid the foundation for the study of the effect of time on plant growth and other biological functions, a branch of science known as chronobiology.



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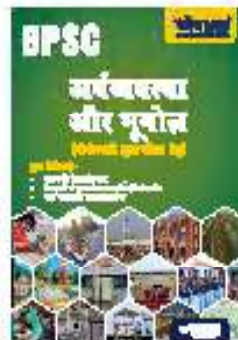
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