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Growing Threat of Cyber Terrorism **In India:** Challenges & Solutions

Increasing Role of NITI Aayog In
Strengthening Competitive Federalism.

Increasing Role of Technology
in Environmental Protection.

Role of Biotechnology &
Related Institutions In
Agriculture and
Farmers Welfare.

Remittances Received
From Indian Diaspora
Strengthen The
Indian Economy.

Need For Covid Vaccine
Trial In View of Increasing
Incidences Of Heart Attack.

Motives Behind Chinese
Incursions In Arunachal
Pradesh & India's Strategy.

Prelims Special 2023: Important Schemes & Initiatives of Government of India

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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.
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-: For any feedback Contact us :-

+91 6393005298

perfect7magazine@gmail.com

OUR OTHER INITIATIVES





Managing Editor : Vijay Singh
: Baghendra Singh
Editor : Vivek Ojha
Co-Editor : Ashutosh Mishra
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Design and : Arun Mishra
Development : Punish Jain
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: Chandan, Guddu
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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.

International

Motives Behind Chinese Incursions In Arunachal Pradesh & India's Strategy

China's foreign policy has been focused on escalating geopolitical, geostrategic, and geo-economics disputes. China's politics move forward with many objectives surrounded by similar controversies in many regions of the world, especially in the Indo-Pacific and Asia-Pacific regions. In this regard, the power politics of the Indo-Pacific region is now reaching its most complicated phase, because the two powers of Asia, China, and India, are once again on the border before each other. Such a skirmish on the border is not something new, because before this the whole world had seen the face-off between the Indian and Chinese armies at Doklam and Galvan Valley. A similar incident was seen on the border of Arunachal Pradesh this time. Nevertheless, whenever such a skirmish takes place between the Indian and Chinese armies, the issue becomes extremely sensitive. Nationalist sentiments run high during this time and there are expressions of anxiety filled with apprehensions of war. According to Defence Minister Rajnath Singh, on December 9, the Chinese army attempted to unilaterally change the status quo by encroaching on the Line of Actual Control in the Yangtse area of Tawang sector. However, the Indian Army faced China's attempt with determination. During this, there was a scuffle between the two armies and the Indian Army forced them to retrieve back.

Possible factors behind China's dispute in Tawang:

- The illegal encroachment by Chinese troops in Arunachal Pradesh comes at a time when India is trying to make the G20 summit an all-India event. World's 19 most powerful economies and the European Union, which is also member of the G20, will be arriving India to participate in the G20 Summit. Along with this, representatives from many other international organizations are participating in it.
- China is perhaps envious to see this opportunity for India's leadership. The kind of legitimacy, recognition of leadership that India will get from the G20, the Wassenaar Arrangement and the presidency of the Global Partnership Alliance on Artificial Intelligence will somewhere negatively impact China's influence. Amidst the Kashmir issue, border dispute, the kind of recognition and support that Indian force has received on the construction of LAC infrastructure from countries around the world, has made China somewhat uncomfortable about it.
- On the other hand, Xi Jinping has also fuelled the encroachment on Arunachal Pradesh to cover up his failures of the Covid pandemic. Significantly, due to the Covid explosion, the COP 15 of the Biodiversity Convention in Kunming, China, had to be postponed, and eventually the meet had to be done in Montreal, Canada. There is a lot of resentment among the Chinese people regarding

China's zero Covid policy and there are open demonstrations by the people of Chinese society against the Xi Jinping government regarding inflation, unemployment, poverty, increasing income disparity in the country. It is clear from this that in order to save his credibility, there was a need to divert the attention of our people elsewhere and hence, Jinping once again raised the dispute on the India-China border.

- Apart from this, India recently has made several strategic partnerships to counterbalance China, which was bound to anger China. China has become somewhat uncomfortable due to initiatives like Indo-Pacific Partnership, India, France Australia Indo Pacific Trilateral Framework, India France, and UAE Indo Pacific Trilateral Framework and thus it has decided to disturb India. It can also be said here that the way India and USA have conducted a joint military exercise in Chamoli's Auli recently, has also filled China with anger. China has also registered its objection against this joint exercise.
- The statement of Dalai Lama, the highest spiritual leader of Tibet, said that he would rather take his last breath in a free and democratic India than die in the presence of some officials in China, gave the nation a different blow. Seeing India's strong security operations near Ladakh, Galvan, and Pangong lake area, now China is trying to put the Eastern Sector in the circle of controversies.
- It is also worth noting that China is getting aggressive on the issue of Taiwan as well, especially since Ukraine has been attacked by Russia. China feels that this is the right time to give shape to its One China policy and merge Taiwan in China. However, if China does so, India will certainly oppose such an attempt, so by creating a border dispute, the country is trying to put pressure on India to remain neutral on the Taiwan issue.

Why China has a border dispute with India:

- China follows an unofficial policy called Five Fingers, under which it sees Tibet as its palm while Ladakh, Nepal, Sikkim, Bhutan and Arunachal Pradesh as its five fingers. That means that these five areas are disputed for it. It captured Aksai Chin of Ladakh in 1962 as well under this policy. China now has its eyes set on Arunachal Pradesh, which it sees as part of southern Tibet. Although, The McMahon Line drawn under the Shimla Agreement of 1914 establishes India's sovereignty over Arunachal Pradesh, but according to China, this agreement was an agreement made by British India with Tibet and not with China, so it considers this agreement invalid. China has been raising this border dispute with India since the Communist Revolution in China in 1949, especially after it annexed Tibet.

Prime Minister Jawaharlal Nehru believed that for India's development it is necessary to have friendly relations with neighbouring countries. Hence, the Panchsheel agreement of 1954 became the basis of 'Hindi-Chini Bhai Bhai', however the Chinese invasion of 1962 revealed China's real intention. Since then the relations between the two nations had been sour.

- In 1988, Rajiv Gandhi improved the relationship again when the Joint Working Group on the border dispute was formed. During the time of Atal Bihari Vajpayee government as well, there was significant attempts to resolve the border disputes and from 2003, dialogues regarding special representatives on the border dispute started. Since then there had been a gradual improvement in relations and it was believed that perhaps a solid solution to the border dispute between the two countries could be found. This optimistic view was further strengthened when India officially recognized Tibet as part of China in 2003 and in 2006 China accepted India's sovereignty over Sikkim. However, in the last few years, the issues between the two nations are becoming more serious and complex. China's aggressive and interventionist policies are increasing even more.

Why China is raising the border dispute:

- Several points have influenced and inspired China for this. After the economic recession of 2008, there has been a gradual decrease in the global influence of America while in comparison to that, there has been an aggressive rise of China. Chinese President Jinping wants to establish a unipolar Asia under Chinese leadership through his Asian Dream. China's hegemonic policies in this direction however have created a situation of insecurity dilemma in many Asian countries including America. Thus, most of such countries are looking at India as an alternative to China in the Indo-Pacific region and India is also defining its role as a net security provider of the region under its new foreign policy. This form of India is troubling China, because this strategic innovation of India is the biggest threat to China's plans in Asia. Especially since India has become a member of the Quad group and during the Covid disaster, China was also openly criticized by India. Not only this, policies like India's Sea Policy, Act East Policy and Connect Central Asia have made China's strategic encirclement effective, which is seen as India's Diamond Necklace policy. In such a situation, China wants to create a psychological edge over India through the border dispute. The nation feels that through this it can distance India from the American bloc.

India's options against China:

- Due to the emergence of disputes between China and India on the Western, Middle or Eastern

sector, this question becomes quite crucial as to what steps India should take in this situation. In this time, the morale of the army or the public should not be weak at all. India will have to make headway in the perception war started by China and has to clearly warn China at the official level.

- It has to be noted here that no good message will be sent by mere agreeing with China's voice. India will have to increase the presence of troops on its borders. Whatever activities are going on at the border should continue uninterrupted. India should also adopt pressure tactics against China on the similar tone of the pressure tactics used by China.
- Along with this, the domestic politics of the country will have to be set on a new narrative. The government should take the opposition into confidence on this issue and talk to them and the opposition should also avoid politicizing the issue of national security. Further, the nation should take its allies into confidence as well. It needs to contact the partner countries of the alliance that has been formed against China in the last few years. A strong message should be sent to China that no country alone can become the world's supreme power and thus there is a need to firmly surround China on regional and global forums.
- If China is in a position to create a psychological edge over India today it is because of one reason, it is not its military power rather its economic power. Hence, India has to work on a long term strategy, where the struggle will not be fought with weapons in the battlefield, but through gaining an edge in the trade of goods and services in the global market. Although, it will take a little longer but it will be more effective. For this, initially economic dependence on China has to be ended immediately and it won't be easy. This can only happen through economic innovation. The world is moving towards Fourth Industrial Revolution and there are talks regarding blue economy, so where are we in this changing era, and why our economic policies are not effective? The Government of India will have to envisage about implementing these policies on the ground rather than mere discussing ambitious plans.
- Since both nations are nuclear powered, war is not an option for either country. In the event of this strategic dilemma, the strategic patience of both the countries is at test. In the coming decade, the tension between the two countries is not going to reduce from anywhere, as neither China's hegemonic approach is going to change nor India is going to compromise on its strategic autonomy. Therefore, India has to get used to such tense situation and it should remember that in international politics mere possession of power is not enough, but power must also be displayed from time to time.

Internal Security

Growing Threat Of Cyber Terrorism In India: Challenges & Solutions

Cyber terrorism has become a major challenge for the national internal security of the country. This is a major dent to the country's cyber domain i.e. Critical Information Infrastructure. Since cybercrime is an organized crime that is also a major source of terror funding, terrorist organizations have chosen the cyber domain to fulfil their motives. The term, 'cyber terrorism' was coined by Barry Collin in the 1980s and since then the term is used to refer to the growing affinity between terrorism and cyberspace. Under this, terrorists target computer networks to achieve any of their political or other objectives. They attack cyber networks that are used for maintaining national security. They also work to destroy information that is of strategic importance. Terrorist organizations also target the digital property of the country, motivated by their religious, political, or ideological goals. Even in the 26/11 Mumbai terror attack, cyber networks were used to carry out the attacks. Cyberspace and information and communication technology are used by terrorist organizations to execute their organizational communication.

The biggest potential challenge from cyber terrorism is posed in front of critical security infra such as nuclear power plants, power grids, air surveillance systems, stock markets, important ports of India, and the Navy and Coastguard from where cyber terrorists constantly seek to take sensitive information. Cyber terrorists also try to collect the intelligence (secret information) of the country. Terrorists buy and sell weapons on the dark net or deep web. Cyber terrorists also do the work of taking cyber ransom in bitcoins or cryptocurrencies. Recently, China attacked the computer system of AIIMS. The information regarding the attack was given by Intelligence Fusion Strategic Operations of Special Cell of Delhi Police probing the AIIMS Delhi server attack case. Looking at the recent ransomware attack on AIIMS server, the Cyber Cell Intelligence Fusion and Strategic Operations Unit of Delhi Police Special Cell has filed a case under the section of Cyber Terrorism under Information Technology Act apart from extortion. The police, however, has denied reports that say that the hackers demanded Rs 200 crore in cryptocurrency as ransom to restore the system.

In the AIIMS server hacking case, the Delhi Police has written a letter to the Central Bureau of Investigation (CBI) as well, seeking details about the Chinese hackers through Interpol. CBI is the nodal agency to reach out to the Interpol. Delhi Police has also sought information relating to the IP address used by the hackers. The cyber attack on the server of the All India Institute of Medical Sciences (AIIMS) was done in China. The hackers were located in Hong Kong and Henan and they targeted 5 out of 100 servers of

AIIMS. AIIMS clarified that the data from these five servers have now been retrieved.

Factors complicating cyber terrorism and crime:

Dark Web or Deep Web also has a major role in making cyber terrorism more complex. This is a special area for cyber terrorists, that is generally used only for illegal work. Here several crimes like the drug trade, illegal weapons, online data theft, human trafficking, child pornography, theft of confidential information related to credit and debit cards, live murder, illegal biological experiments, and other cyber crimes, etc. are carried out. The dark net uses technologies or software such as 'The Onion Router' and the Invisible Internet Project, to keep processes on the Internet confidential. The organisations use the Onion Router and the Invisible Internet Project to avoid monitoring by law enforcement agencies for drug sales, pornography, and other crimes. This is evident from the cyber connection of terrorists to law enforcement bodies since 2001, and it clearly shows the kind of danger of cyber terrorism poses. Terrorists are known for using the internet for preparing the terror plans, raising funds and spreading cyber terrorism. For instance, Razmi Yousef, a key figure behind the World Trade Centre attack, had plans in his laptop computer to destroy United States airliners encrypted files.

Cyber Security Measures:

- Necessary arrangements are being made at the Central and State Governments levels, to deal with cyber terrorism across the country. Jammu and Kashmir state government is planning to create a pool of cyber security analysts to deal with cyber terrorism and other internet related crimes. In addition to this, Computer Emergency Response Team will be formed as well. Cyber security analysts will work as part time security experts and advise the government from time to time to address the cyber terrorism, cyber attacks and other loopholes in the security.
- In view of increasing incidents of cyber crime and cyber terrorism, states are expected to adopt Cyber Dome model to deal with it. There is also a need for an inclusive, coordinated and holistic strategy at the national and state levels. The Police Department of Kerala had initiated the Cyber Dome Project, which is a technical research and development centre and it was formed as a centre of excellence in the field of cyber security. It stands as a high technology public and private partnership hub that integrates all cyber security stakeholders for a coordinated effort. In this, special emphasis has been laid on the experts related to the information technology industry. Also, an attempt has been made to connect ethical hackers, expert coders, youth with special skills in software, law

enforcers, and citizens serving voluntarily, on a single forum. They have been designated as the first line of defence for the state's law enforcement, who will assist in combating online threats. Apart from Kerala, Assam, Maharashtra, and Telangana have also taken steps towards adopting the cyber dome project realizing its usefulness.

- The punishment for cyber terrorism has been provided in section 66F(1) of the Information and Technology Act which states that, whoever uses computer resources in an unauthorized manner with the intent to create a threat to the unity, integrity, security, or sovereignty of India or to cause terror among the people, or is guilty of cyber terrorism, can be punished with imprisonment for life.
- Any act that causes serious damage to the unity, integrity, sovereignty, or the public of the country is terrorism, and the person who commits such an act is called a terrorist. To punish such terrorists, a provision has been made in the Indian Penal Code. If a person commits the same crime through computer means or damages the friendly relations of any states or foreign countries by hacking the computer kept under government security, then it will be a crime of cyber terrorism.
- The Government of India has taken strict steps from time to time to counter the increasing cybercrime and cyberterrorism in India. In this context, the nation has also emphasized getting international cooperation. India has also raised the issue of strategy to deal with cyber terrorism in the past, during the bilateral meeting of G-20 Digital Ministers on Digital Economy in Germany.
- It is noteworthy that in September this year, the National Security Council Secretariat (NSCS) of India and the British Government, in collaboration with BAE Systems, conducted a Ransomware Drill that was successfully operated in a virtual manner for 26 countries to deal with Ransomware in order to prepare to deal with a widespread cyber attack at the international level. The exercise was part of the International Counter Ransomware Initiative -Resilience Working Group, which is being led by India under the National Cyber Security Coordinator. India is continuously making several such efforts to create a world that is free from cyber challenges. In this context, India can further propose to include cyberterrorism and related criminal activities in the universal definition of terrorism, which all countries should include in their national criminal laws. India can also work for the sovereignty of cyber domain of countries, strengthening cyber democracy, declaring cyber literacy as a fundamental duty in the current G20 summit.
- India needs to remember that it had launched Cyber Secure India initiative which can prove to be

very fruitful if executed properly in this direction. It is the first public private partnership program in the field of cyber security with provision for harnessing the expertise of the IT industry. Those supporting the campaign include Microsoft, Intel, Wipro, Redhat and Dimension India Data. In addition, it includes knowledge partners like Computer Emergency Response Team-In, NIC, NASSCOM, FIDO Alliance as well as Deloitte, etc.

It is necessary to spread cyber awareness:

- Recently the Indian Renewable Energy Development Agency Limited (IREDA) celebrated "Cyber Jagruti Diwas" with the aim of creating cyber security awareness among the workers. It is an initiative launched by the Ministry of Home Affairs in which cyber security awareness is spread in all government organizations. This day is celebrated on the first Wednesday of every month. It aims to create awareness and sensitize internet users to guard against cyber fraud and cyber crimes.

Following are the steps taken by the government to prevent cyber crime and hacking:

- Sections 43, 43A, 66, 66B, 66C, 66D, 66E, 66F, 67, 67A, 67B, 70, 72, 72A and 74 of the Information Technology Act 2000 deal with hacking and cyber crimes.
- The government has approved the framework related to cyber security. For this, the National Security Council Secretariat has been made the nodal agency.
- National Technological Research Organization has been made the nodal agency for cyber security in national critical infrastructure and specific sectors.
- India Computer Emergency Response Team (CERT-In) has been made the nodal agency to analyse, forecast, and warn against cyber security threats.
- The Ministry of Home Affairs has issued advisories to the States/UTs which are available on the website of the Ministry of Home Affairs.
- Ministry of Home Affairs for cyber crimes against women and children is implementing the programme 'Prevention of cyber crimes against women and children'.
- The Home Ministry has constituted an inter-ministerial committee to deal with phone fraud. In addition, it has also issued guidelines to the States/UTs on January 13, 2018, and February 12, 2018.
- Thus, measures have been taken at various levels for cyber security in India. Some laws have been made at the legislative level, while some important institutions and organizations have been established at the institutional level. Along with this, some important national policies, plans have also been formulated to deal with cyber crimes.

6 Technology

Role Of Biotechnology & Related Institutions In Agriculture And Farmers Welfare

Introduction:

- Biotechnology can be best defined as the application of scientific methods to enhance and modify the value of plants, animals, and microorganisms. Biotechnology has become a part of many industries over the years, including medicine, agriculture, genetic engineering, etc.
- Demand for resources and necessities like food, shelter, clothes, etc. has increased as a result of a population's significant growth. The overuse of the land for food production is a consequence of the growing population. We must exert a lot of effort in order to satisfy the expectations with the resources we have. The face of this ailment has changed as a result of agricultural biotechnology.
- Biotechnology is the use of technology to any biological system or living system in order to generate or enhance goods for a variety of uses. Agriculture is one of the many industries where it is commonly used. Various strategies have been put forth by researchers to increase food production. Agriculture based on genetically modified crops is a choice, along with agrochemical-based agriculture and organic agriculture.
- Although, the green revolution attempted to increase food production, it was unable to keep up with the rising demand. Later, the notion of a program to develop agricultural varieties was advanced. The use of agrochemicals by farmers, however, appears to be impractical. Additionally, the environmental problems associated with them decreased their usage.
- Embryo rescue is a type of plant in-vitro cultivation technology. Here, a developing embryo is raised in a regulated environment to increase its chance of survival. This might aid in preserving seed species that are at danger of going extinct. This might include regional grains with cultural importance, heritage seeds, etc.
- Somatic hybridization is a process that fuses to protoplasts allowing for the manipulation of the cellular genome.
- Molecular-gene markers are unique DNA segments that are connected to certain locations in the genome and are used in genetic engineering.
- **Molecular diagnostics:** A collection of methods for examining biological markers in the genome and proteome is known as molecular diagnostics. Finding out how their cells express their genes as proteins is made easier by it.
- A vaccine is a substance that is administered intravenously to a host in order to elicit a specific immunological response. It aids in the prevention of several illnesses, including polio. To combat COVID, it is presently produced in large quantities.
- **Micropropagation:** This is the controlled and aseptic clonal multiplication of plants in a confined vessel.

Important Developments of Biotechnology that are Crucial in Agriculture:

Genetically Modified (GM) Crops:

The most recent development in agriculture is genetically modified crops (GMO). These crops are the consequence of changes made to the genetic structure of the crops. The crops benefit from this change in a number of ways, including:

- After harvest, there are less losses.
- Crops may be altered to provide more nutrients valuable to human welfare.
- These crops have been developed to be very effective, producing a high yield while using less minerals.
- The reduction in the usage of pesticides and insecticides, both of which cause environmental damage.
- Greater resistance to environmental pressures such natural disasters, high temperatures and weather, and a shortage of minerals and water.

Genetically Modified Pesticides:

- A bacteria called *Bacillus thuringiensis* (Bt for short) produces the Bt toxin.

Application Of Biotechnology And Its Significant Role In Agriculture:

A set of scientific methods that can enhance plants, microorganisms, and animals based on DNA and its ideas might be referred to as agricultural biotechnology. The numerous instances where biotechnology has been used in agriculture are highlighted by the following:

- **Genetic engineering**, often known as rDNA technology, is a technique that involves purposefully altering one or more genes in a laboratory setting. Recombinant DNA (rDNA) technology is used to do this, changing an organism's genetic make-up in the process.
- **Tissue culture:** Tissue culture entails preserving and promoting the growth of small pieces of plant or animal tissue in a sterile setting. It is necessary however, to separate this tissue

- The bacteria's Bt toxin gene has been cloned and expressed in plants to give them insect resistance without the use of pesticides.
- Essentially produced a biopesticide. Bt cotton, Bt corn, Bt rice, Bt tomatoes, Bt potatoes, etc. are few examples.
- Certain *Bacillus thuringiensis* strains generate proteins that are toxic to several insects, including dipterans, lepidopterans, and coleopterans (flies, mosquitoes).
- During a certain stage of their development, *B. thuringiensis* produces protein crystals.
- A poisonous insecticidal protein is present in these crystals.

Pest Resistant Plants:

- Numerous nematodes parasitize a broad range of plants, animals, and even people.
- The roots of tobacco plants are infected by the worm *Meloidogyne incognita*, which significantly reduces production.
- A unique approach based on the RNA interference mechanism was used to stop this invasion (RNAi). All eukaryotic species use RNAi as a kind of cellular defense.
- With this technique, a particular mRNA is silenced by a complementary dsRNA molecule that binds to it and inhibits the mRNA from being translated (silencing)

The Role of Biotechnology in Enhancing Farmers' Quality of Life:

Agricultural Biotechnology for farmers:

- Crops that can withstand unfavourable climatic circumstances: On occasion, it is required to produce crops that can withstand such unfavourable conditions. Farmers will be able to protect themselves from losses brought on by crop losses thanks to this. Ex: A paddy that resists water may withstand heavy downpours.
- By diversifying the gene pool, genetic engineering can hasten advancements in plants. Additionally, it can aid in the growth of plants that have:
 - » A brief maturation time.
 - » Greater yield.
 - » Capacity to increase food production under unfavourable circumstances like salinity and drought.

In India, Ex-Bt Cotton increased cotton yields.

- **Enhancement of nutritional capacity:** In an effort to fulfill the demands of a growing population, agricultural biotechnology may be utilized to boost the nutritional content of a range of crops. Crops made through genetic engineering can have more vitamins.

Animal husbandry using biotechnology:

- Sexing of semen and embryos (by deleting the Y chromosome) results in the creation of solely female cattle, higher milk output, and increased profitability.
- Cloning, somatic cell nuclear transfer, and transgenic animals all increase breed quality and make animals more resistant to sickness and the elements.
- Compared to natural cow-milk, milk from transgenic cows can provide human infants with a better balanced protein and nutritional profile. More money is made by selling such high-end goods.

Food Processing:

- The flavor, yield, shell life, and nutritional qualities may all be improved with the use of modern biotechnology. Additionally, it is helpful for food processing (fermentation and enzyme involving processes). Therefore, biotechnology can aid in eliminating illnesses, hunger, and malnutrition from impoverished nations.
- Because modern biotechnology products are economically viable, they may enhance both agriculture and the food business, which will increase the income of subsistence farmers.
- The food industry has a significant use for biotechnology.
- The first biotechnological goods are really those that are manufactured by cultivating microbes, such as bread, cheese, wine, beer, yogurt, and vinegar.
- It aids in enhancing the meal's edibility, texture, and preservation as well as guarding against bacteriophage attacks on food, particularly dairy.
- Additionally, biotechnologists are creating tests that will enable the identification of food-contaminating microbes and the poisons they create, even in very small concentrations.
- The identification of mutagens (substances that result in genetic alterations) in certain food products is another use for biotechnology.
- Corn, maize, soy, tomato, potato, and papaya are just a few of the GM crops that have been given the green light for usage in food products in a few nations.
- Recent biotechnological advancements that fortify important staple foods with micronutrients like vitamin A, zinc, and iron have the potential to drastically reduce India's hunger issue.

Biotechnology In India:

1. The majority of the biotechnology sector's programs in India are managed by the Department of Biotechnology. The Ministry of

Science and Technology oversees it. The goals of it are:

- To provide assistance in the areas of research, infrastructure, human resource development, popularization of biotechnology, industry promotion, and establishment of centers of excellence.
 - To put into practice biosafety regulations for genetically modified organisms, recombinant DNA products, and initiatives based on biotechnology for the good of society.
 - To create an information network for India's bioinformatics mission in the local, national, and worldwide scientific community.
2. Genetic Engineering Appraisal Committee (Geac)
- The Ministry of Environment, Forests, and Climate Change oversees the GEAC's operations (MoEF&CC).
 - It is in charge of evaluating from an environmental standpoint operations requiring extensive use of risky microorganisms and recombinants in research and industrial production.
 - The committee is also in charge of evaluating requests for the release of genetically modified (GE) goods and organisms into the environment, including field tests.
 - The Special Secretary/Additional Secretary of MoEF&CC and a representative from the Department of Biotechnology co-chair the GEAC (DBT).
3. In order to produce more goods and technologies for economic and social benefit, the SOCIETY OF BIOTECHNOLOGY OF INDIA (SBPI) recently encouraged transformational

reforms and approaches toward core research in contemporary biotechnology.

4. The Agricultural Initiatives include:
- Program for wheat genome sequencing.
 - Functional genomics of rice.
 - Program for crop biofortification and quality enhancement.
 - Program for the National Plant Gene Repository.
 - Program for the Next Generation of Challenges in Chickpea Genomics.

Conclusion:

- There are other additional biotechnology-related uses in agriculture and related industries that might considerably help achieve the objective of tripling farmers' incomes in the near future. Utilizing current technology effectively and allocating enough funding for creative research in this field are urgently needed.
- In contrast to how it has frequently been done in the industrial countries—in methods sparing of the environment and resources—the developing countries are faced with the arduous job of doubling their food output over the next 25 years.
- In many emerging nations, population pressure has already started to have an impact on the environment. The vital nutrients and organic matter in farmed soils are being reduced as a result of increased land usage and a general scarcity of biomass. Resources used for forestry, cattle, and fishing are all being strained more and more. One of the key solutions for this is biotechnology.


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Economy

Remittances Received From Indian Diaspora Strengthen The Indian Economy

India is expected to receive a record \$100 billion in remittances in 2022, being the top recipient this year, the World Bank has said. In its Migration and Development Brief, the World Bank has said India's remittance will grow to 12 per cent from 7.5 per cent last year, resulting in \$100 billion flow as compared to \$89.4 billion in 2021. The term "diaspora" originates from the Greek term diaspeirein, which translates to "dispersion". The phrase expanded over time and now broadly refers to anyone who is a citizen of a certain country and shares a common ancestry or culture but resides beyond their homeland for a variety of reasons. In India, the term 'diaspora' refers to Non-Resident Indians (NRIs), Persons of Indian Origin (PIOs), and Overseas Citizens of India (OCI), the latter of which was amalgamated into a single category – OCI — in 2015. During British administration, vast numbers of Indians migrated as indentured labourers to former colonies such as Fiji, Kenya, and Malaysia. It continued post-independence, with Indians of various social classes migrating to countries such as the United Kingdom, the United States, and Gulf region.

Indian Diaspora around the world:

- India has the largest diaspora population in the world with 18 million people from the country living outside their homeland in 2020, according to 'International Migration 2020 Highlights' report by the UN, which says UAE, the US and Saudi Arabia host the largest number of migrants from India.
- India's large diaspora is distributed across the United Arab Emirates (3.5 million), the United States of America (2.7 million) and Saudi Arabia (2.5 million).
- The United Arab Emirates (UAE), the United States of America (USA) and Saudi Arabia have been the three major destinations of Indian migrants for the past two decades. Out of the total migrants from India, 48.6 per cent were in the UAE, the USA and Saudi Arabia.
- Other countries hosting large numbers of Indian migrants included Australia, Canada, Kuwait, Oman, Pakistan, Qatar and the United Kingdom.

Remittances From Indian Diaspora:

- Remittance is the sending of money to a recipient who lives abroad. Remittance plays an important part in developing countries in terms of their economic systems, individual households, and businesses. As per the World Bank, remittance inflows are a measure of the creditworthiness of a nation which implies it can borrow more money. According to World bank report world remittances are expected to touch \$794 billion, \$626 billion

went to low and middle income countries.

- The huge Indian diaspora is responsible for a significant amount of money inflows to the country.
- Since 1991, India has been steadily experiencing great remittance growth and continues to be on track. There has been a significant surge of remittances from 2016 (\$62.75 billion) to 2021 (\$89.8). In 2022, the World Bank estimated remittance of India to be the highest in the world with \$100 billion, followed by Mexico and China at \$60 billion and \$50 billion respectively. These remittances constituted 3 % of India's GDP and remittances formed the country's foreign exchange money of roughly around 22% to 23%.

Reasons for sustained growth in Remittances:

- **Spread Of Indian Diaspora-** Very large number of Indian diaspora are spread throughout the globe.
- **Quality of education in the country-** India's IITs and IIMs are still world most reputed educational institutes and there various alumni that hold top post in various companies abroad.
- **Affluency of India Diaspora-** From Google, Microsoft, Twitter CEOs to Nobel laureate scientist Har Gobind Khorana, the list of Indians abroad and their contribution to the world is endless.
- **Scenario after Covid19 pandemic-** According to the World Bank, one of the main reasons is the gradual reopening of various sectors in host country economies, following Covid-19 pandemic induced closures and travel disruptions. This required supply of skilled, semi – skilled labour. During the Covid-19 pandemic, Indian migrants in high-income countries benefited from work-from-home and large fiscal stimulus packages. As the pandemic eased, the wage hikes and "record-high employment conditions" helped migrants send money home despite high global inflation.
- **Structural shift-** Remittances have increased from a gradual structural shift in Indian migrants' key destinations from largely low-skilled, informal employment in the GCC countries to a dominant share of high-skilled jobs in high-income countries such as the U.S., the U.K., and East Asia, Australia and New Zealand.
- **Depreciation of Rupee-** The depreciation of the Indian rupee vis-à-vis the U.S. dollar - it fell by 10% between January and September 2022 - to increase their remittances.

Impact of remittances on Indian Economy:

- **Forex Reserve-** Remittances balance CAD thereby balancing BOP and increasing Indian Forex reserve. The high forex reserve provides macro-economic stability and serves as cushion during

an internal and external crisis. For instance 1991 economic crisis was because of fall in remittances from Gulf countries due to 1990 Gulf war.

- **Foreign investment-** The remittances are invested in countries economy in FDI & FPI, thus providing capital to economy, which in turn increases employment and consumption. Diasporic professionals are working in senior positions in manufacturing industry can be helpful in promoting India as an important destination for out-sourcing.
- **Socio- Economic benefit-** Kerala case study- Kerala having one of the highest emigrants in Gulf, has seen a large scale change in its economy. The states economy and socio economic indicators stagnant in 1960s, witnessed a exponential change with remittances. The rise in consumption, savings and social investments augmented the domestic economy, spearheading a cultural and social change in the society. As per the Kerala Migration Survey 2018, in every one out of 5 houses there is an emigrant and about 38 percent of the household remittances was used for daily living expenses. About 19 percent was cash in hand/ bank, 12 percent used it to pay back debts, and 8 percent used the money for children's education. Between 2013 and 2018, the remittances for day-to-day expenses increased by 42 percent and children's education by 26 percent. Kerala is first in NITI Ayog SDG index and one of the country's most prosperous state in terms of human capital.

International Examples

According to world bank increase in remittances by 1%, increases GDP by 0.7%

El Salvador case study- Studies based on Household survey found that children of remittance recipient household have lower dropout rates.

Sri Lanka case study- Families receiving remittances have children with higher birth weight.

Nepal case study- Between 2000 to 2005 poverty rate reduced by 10% due to increase in remittances form 2% of GDP to 15%.

Steps to increase Remittances to country:

- **Pravasi Bhartiya Diwas:** 9th January was chosen as the day to celebrate PBD since it was on this day in 1915 that Mahatma Gandhi, the greatest Pravasi, returned to India from South Africa, led India's freedom struggle and changed the lives of Indians forever. PBD Conventions are held once every two years. PBD 2021: The 16th PBD Convention was held virtually in New Delhi. The theme was "Contributing to Aatmanirbhar Bharat". On the occasion, several events such as PBD Convention, Pravasi Bharatiya Samman Award and Bharat ko Janiye Quiz are organised. Regional conventions are also held.

- Merger of OCI cards with PIO cards scheme.
- Global Pravasi Rishtha Portal for better connectivity and communication with the Pravasi Bharatiyas.
- **Education:** NRI seats are reserved in all the medical, engineering and other professional colleges. Other youth-centric outreach programs include Bharat Ko Jano online quizzes.
- **Easing the passport facility:** Head Post Offices launched as passport centers enabling thousands more to apply for a passport.
- Merger of the Ministry of Overseas Indian Affairs with the Ministry of External Affairs
- India also allowed visitors from 43 countries, including the United States, Australia and Fiji, to receive visas upon arrival, replacing the previous process, which took weeks
- The Overseas India Facilitation Centre was set-up by the Government of India in partnership with the Confederation of Indian Industry (CII), to facilitate economic engagement of overseas Indians with India.
- The government evacuated Indian Diaspora in Yemen in 2015 through the Operation Rahat and from South Sudan through Operation Sankat Mochan.
- The government is emphasising more on youth and has started a scheme "Know your country".
- "Pravasi Kaushal Vikas Yojana" targeting Indian youth seeking overseas employment.
- The Indian government is active on the social media and the government provides quick response and solves the problems of Indian Diaspora through the social media.
- **Promotion of Cultural Ties with Diaspora:** an aim to showcase Indian culture and new initiatives & developments of modern India.
- **Scholarship Programme for Diaspora Children:** launched in 2006-2007 for the children of overseas Indians (PIOs/NRIs) with the objective to make higher education in Indian Universities/ Institutions accessible to diaspora children and promote India as a centre for higher studies.
- **Pravasi Teerth Darshan Yojana:** In the year 2018-19, the Ministry has started a special Know India Programme in association with Indian Railway Catering & Tourism Corporation (IRCTC) for the PIOs in the age group of 45-60 years
- **India Centre For Migration:** is a 'not for profit' society under the Societies Registration Act 1860, in July, 2008. The Centre serves as a research think-tank to the Ministry of External Affairs on all matters relating to 'International Migration'.
- **Indian Community Welfare Fund:** set up in 2009, is aimed at assisting Overseas Indian nationals in times of distress and emergency in the 'most deserving cases' on a 'means tested basis'.
- **Pravasi Bharatiya Bima Yojana:** is a mandatory

insurance scheme for all Emigration Check Required (ECR) category workers going to ECR countries.

- **Pre-departure Orientation Training:** Ministry has made robust efforts towards ensuing a safe, orderly, legal and humane migration process. This includes a broad-based institutional framework for welfare and protection of migrant workers and awareness generation
- **Vaibhav Summit:** Vaishwik Bhartiya Vaigyanik or Vaibhav summit is an event to bring together resident and overseas scientists of India at a common platform to solve the current problems facing India.
- The Ministry of External Affairs is running a scheme since October 2008 known as “Tracing the Roots” to facilitate PIOs in tracing their roots in India.
- Skilled Workers Arrival Database for Employment Support (SWADES), an initiative for returning immigrants from the Gulf and other areas.
- **Easing NRI bank deposits norms-** RBI has relaxed the norms governing the Foreign Currency Non-Resident Bank [FCNR(B)] and Non-resident External (NRE) deposits to arrest the outflows from the NRE accounts and bring more inflows. This will allow banks to offer higher returns to NRIs on their deposits.

Challenges to Indian Diaspora abroad:

- Rising incidence of hate speech and crimes against Indians by the locals due to racism, communalism emboldened by coming of nationalist and ultra-nationalist governments to power in many countries.
- Increasing anti-globalization (Fear of losing jobs and educational opportunities to outsiders) has resulted in stricter visa rules in many countries including the USA, Australia, etc for instance stricter H1B visa norms.
- Sectarian crisis, increasing terrorist activities and war in the Middle East countries leave diaspora vulnerable to attack
- Use of remittances may not always be used for beneficial purposes. For instance, India faced problems due to foreign funding for extremist movements like the Khalistan movement.
- **Diaspora as a threat:** India has had problems with negative campaigning and foreign funding, coming from abroad, for separatist movements like the Khalistan movement.
- **West Asia:** job cuts, Shia - Sunni conflicts and radical Islamism, fierce competition from skilled labour from Philippines and cheap labour from Nepal, Regressive and medieval policies like employer seizing the travel documents upon arrival known as Kafala labour system is exploitative.

- **Impact of Brexit-** UK which served as ground for Indians to enter in Europe, can now face challenge due to Brexit.
- **Brain Drain-** Many skilled labour who otherwise contribute to development moves to foreign countries.
- **Informal remittance transfer-** Use of hawala route to transfer money to India. This is preferred by many un-skilled and semi-skilled labour to send money to India due to lack of awareness of formal route or high charges in formal route.

Way forward:

- While addressing the diaspora, India should be careful about not crossing some red lines. China, for example, is getting into trouble in many countries for turning its relationship with the diaspora into an active intervention in the domestic politics of the host nation.
- Address the problems of overseas blue-collar workers by skilling them and try to negotiate with host countries to end discriminatory practices like Kafala system & monitoring and supervision of overseas workers by Indian Missions.
- **Reducing Risks of Indian emigrants-** Compulsory insurance schemes covering the risks faced by overseas workers & welfare of Indian Women married to NRIs/PIOs.
- Focus on promoting tourism amongst 2nd generation PIOs.
- Government should also consider setting up Special Economic Zones, exclusively for projects to be set up by NRIs/PIOs.
- Government should consider issuing special infrastructure bonds for attracting NRI/PIO investments on the lines of the Israel Bonds.
- **Communicating with the diaspora:** It is important to make the diaspora feel respected if we expect them to contribute to the development of the country. Therefore, it is critical to have two-way communication to understand their problems and design the policies accordingly.
- **Awareness generation:** Many NRI/PIOs have pointed to the lack of knowledge of specific schemes implemented for their welfare. There is a need for better information flow and making the diaspora aware of the schemes benefitting them, by making proper use of technology.
- Thus need to improve and strengthen the diaspora contribution to economy, a Parliamentary Standing Committee on the Indian Diaspora could be constituted. It should have in it, members with an interest in Diaspora affairs. Along with this India's foreign policy should be oriented to translate partnerships with diaspora to benefit key projects like Swachh Bharat, Clean Ganga, Make In India, Digital India, and Skill India.

Social Issues

Need For Covid Vaccine Trial In View Of Increasing Incidences Of Heart Attack

Context:

Recently, the issue of rising heart attack incidents was raised in the Rajya Sabha. Members of Parliament demanded to test the role of corona vaccine in the context of increasing heart attacks.

Introduction:

There has been a massive increase in the number of heart attacks in India over the past few years. This problem was generally associated with the old age group, but since few years the youth has become more vulnerable to this problem. The rising incidences of heart attacks among the youth is a matter of national concern. Whether the vaccine is responsible for this or not is a matter of research. Recently, in the Rajya Sabha, the Members of Parliament demanded the Ministry of Health form a committee on this and requested to find out what is the real reason behind such deaths.

What is heart attack?

It is a disorder commonly known as myocardial infarction (MI) or acute myocardial infarction (AMI) or heart attack. This condition mainly occurs due to resistance of blood circulation in some parts of the heart. This resistance may happen due to blockage in the arteries which is caused by an unstable accumulation of lipids (fatty acids) and white blood cells (specific macrophages) in the arterial lining. Infarction in the heart may also occur by lack of oxygen, which, if not treated in time, can lead to damage or death (myocardial infarction) of the heart muscle tissue (myocardium). According to a Lancet report, India has the highest mortality rate due to Cardiovascular Disease (CVD) India.

Cases of increasing heart attack during Covid- 19 and its possible reasons:

- **Change in lifestyle during Corona:** In research conducted by the Center for Blood Pressure Disorders at the Cleveland Clinic in the United States, it was found that the problem of blood pressure has increased in people due to lack of exercise, obesity, and excessive drinking during the lockdown. This can lead to heart attack over time.
- **Uncertainty during Corona:** Research conducted by Circulation Trusted Source General has revealed that the COVID-19 pandemic has affected people indirectly as well. People are at risk of heart attack due to increased blood pressure or hypertension due to corona-related uncertainty arising from the situations like unemployment and loss of job, due to the death

of one's parent, sibling, or loved ones.

- **Increased vulnerability to a heart attack in people suffering from corona:** During a conversation with cardiologists, this fact surfaced that people who were seriously affected by Corona virus, have an increased susceptibility to a heart attack. Due to the corona, many parts of the body, including the lungs, stop functioning properly, along with this, the corona is also responsible for the decrease in blood circulation. Further, the corona has affected the immune system of people, due to which people may look healthy from the outside but have become vulnerable from the inside. Therefore, with the increase in diseases, incidents of sudden heart failure have been seen in them.
- **Problems arising during Covid Management-** The Standing Committee on Health and Family Welfare submitted its report on 'Vaccine Development and Distribution Management and Relief in COVID-19 Pandemic' on September 12, 2022. The report highlighted the following major concerns -
 - » Weak health infrastructure and shortage of health workers.
 - » An initially slow rate of vaccination in rural areas.
 - » Mismanagement of oxygen supply during the second wave.
 - » Restrictions eased after the first wave and testing declines.
 - » EUA was granted to vaccines in India without explicit provision in the Indian Drug Laws and Regulations.
 - » Lack of transparency in information related to protocols followed in India and clinical trial data of vaccines.
 - » Lack of clarity in the approval process for the booster dose.
 - » The supply of vaccines was not as per the demand of the states, since the Government of India did not make any advance payment to any vaccine manufacturer in the initial phase, nor did it sign any pre-purchase agreement.
 - » The contribution of public sector units in the production of the Covid-19 vaccine is negligible

Due to the above reasons, the impact of Corona worsened and due to procedural ambiguity, it can become a reason for promoting heart attack.



Other Facts

Types of heart disease:

Cardiovascular diseases (CVDs) are a group of diseases primarily related to the heart and blood vessels. The following diseases can be included in this group -

- **Cardio-arterial disease:** Blockage of blood circulation in the heart.
- **Cerebrovascular Disease:** Related to the blood vessels that supply blood to the brain.
- **Peripheral artery disease:** related to the blood vessels that supply blood to the arms and legs.
- **Rheumatic heart disease:** Damage to the heart muscle and heart due to fever caused by streptococcal bacteria.
- **Congenital heart disease:** malformation of the heart structure present at birth;
- **Acute venous thrombosis and pulmonary embolism:** Blood clots in the veins of the legs that affect the heart and lungs.

Phases of vaccine trial:

- **Exploratory stage:** In this scientists identify artificial antigens to prevent disease and induce an immune response.
- **Pre-Clinical:** Testing the vaccine on mice, monkeys, rabbits, etc., to ensure its efficacy.
- **Clinical Trial:** This is the most important phase. In this, through the cell culture system, the resistance capacity is tested on the human body. It is completed in three phases -
 - » **Phase 1** - small group (around 20 to 80 people) trial to test the effectiveness
 - » **Phase 2-** Trial on a relatively large group (500 people) of different age groups and testing of favorable and adverse effects by changing the amount of vaccine. In this stage, an attempt is made to include people of all age groups.
 - » **Phase 3-** In this stage, testing the vaccine on a group of several thousand people and checking the full effect
- **Regulatory review and approval:** All stages of vaccine testing are reviewed and approved by the concerned authority ('Drug Controller General of India' in India) for the manufacture of that vaccine.
- **Manufacturing and Quality Control:** Quality testing through scientists and regulatory authorities from time to time.

- **Other problems:** In many countries, people were vaccinated without a full trial of the vaccine. Along with this, because of black marketing during the supply of oxygen cylinders, ever-

increasing apprehensions, increase in gifts given to doctors by pharma companies to increase sales of their medicines, many misconceptions about the vaccine spread among the people. These situations not only worsened the impact of the corona but also gave rise to a trust deficit for the vaccine among the people. As a result, there was an increased mental stress among the people; This mental stress is also a possible factor in a heart attack.

Status of a heart attack in India:

Heart attacks have historically been a major problem in India. But in the last few years, there has been an increase in cases of heart attack among Indian youth. Big Boss winner Siddharth Shukla and actor Puneet Rajkumar are prime examples of this. But even before Corona, the condition of prevention of heart attack in India was not very good.

- The report of the European Journal of Preventive Cardiology says that India ranks second globally in terms of death due to heart attack. India and China together represent 46.5 percent of the global incidence of heart attacks.
- According to research from the European Journal of Preventive Cardiology, there has been an increase of 91.9 percent in heart failure cases between 1990 and 2017. This report also proves that air pollution is also a major cause of diseases like cardiovascular diseases and respiratory diseases.
- The National Crime Records Bureau (NCRB) report also highlights the state of a heart attacks in India. According to this report, there has been a 53 percent increase in heart attack deaths from 2014 (18,309 deaths) to 2019 (28,005 deaths).
- The report also presents data by age group. In 2016, where 6,646 people died due to heart attacks in the age group of 30 to 45, and 7,752 people died in 2019. In the age group of 45 to 60, this number has been 8,862 and 11,042 respectively.

Are Vaccines Responsible for Heart Attacks?

- Corona has indeed increased the problem of a heart attack. According to American research, blood pressure disease has increased on a large scale in people due to changed living habits during the Covid epidemic. The risk of heart attack has also increased due to an increase in blood pressure. Although this problem is seen more in women than in men. But countries like India were already facing the problems of a heart attack which has already been described.
- The report of the Standing Committee on Health and Family Welfare, made for 'Vaccine

Development and Distribution Management and Relief in Covid-19 Pandemic', has expressed concerns on many issues, but this report has not indicated anywhere that there is any adverse effect of the vaccine. The reaction increased heart attack.

- During the conversation with cardiologists (heart disease specialists), they told that so far no death has been reported in India due to a vaccine-caused heart attack. And it is just an illusion that people who get vaccinated are dying of heart attacks. The vaccine provided in India is an immunity booster. It is reacting only in the same situation if the person is already suffering from serious diseases, in this situation there can be a possibility of a quick death, but there is absolutely no possibility of death after many days of vaccination.

Way forward:

What should be done by the government:

- The Standing Committee has presented several suggestions to solve this problem.

For Anti-Covid-19 Initiatives:

- Increasing public expenditure on health and investment in research and development,
- Promoting public-private partnerships to ensure last-mile delivery of health services,
- Increasing the capacity of health services.

For Emergency Use Authorization (EUA):

- Making specific provisions for EUAs,
- Rigorously evaluating clinical trial data before granting EUAs in the future,
- Using scientific findings to drive vaccine policy changes.

For booster dose:

- The committee recommended that the need for scientific research and clinical trials should not be overlooked for implementing booster dose proposals and studies on the potency and efficacy of various combinations of vaccines should also be encouraged.

Manufacturing of vaccines in the public sector:

- The committee has pointed out that India has been following the flexible policy of Intellectual Property Rights (IPR) on Covid-19 vaccines globally, therefore the possibilities of technology transfer of Covaxin should be examined and its production should be started in public sector units.

What should be done by people:

- Ignore rumors.
- Follow social distancing, covid protocols.
- Must get vaccinated.
- Improve lifestyle.
- Stay away from the use of drugs like alcohol, cigarettes etc
- Do not engage in corrupt practices.

Conclusion:

Admit the, increasing impact of Corona in China and the possibility of recurrence of Corona, if the demand regarding testing vaccine arises then it is necessary to reduce the trust crisis between the public and hence the government should conduct the testing of the vaccine. Its effect on heart attack should be properly investigated. If any such direct possibility is found, then necessary caution must be taken during the vaccination of booster dose.


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Environment

Increasing Role of Technology in Environmental Protection

At present, the role of science and technology has increased in dealing with different types of challenges around the world. Be it renewable energy, defence, agriculture, farmer's welfare, water management, food security, or biodiversity conservation, the role of technology has become crucial in all of these. Today the use of various technologies is on a continuous increase, it has been used to control forest fires, prevent wildlife trafficking, obtain accurate documents using technology in wildlife census, and provide timely information about various natural disasters, climate change, and global warming. Further, there is an increased presence of technology in saving the environment, transport, and agriculture sector from the effects of warming, greenhouse gas emissions, and pollution. Important efforts are being made in the direction of the conservation of the environment, and biodiversity through biotechnology, animal cloning technique, captive breeding technique, artificial intelligence or robotics, drone technology, nanotechnology, and early warning detection.

An e-bird app was developed recently for waterfowl census in the state of Bihar, India. This app will list the migratory birds arriving in the state. It is worth mentioning that information regarding how many species of migratory birds are there at a certain place, in which season they come, and what kind of environment is necessary for their stay, has already been made available in Chandigarh through the eBird app.

The e-bird app was launched by Cormal University. Through this app, this university collects the data of the birds found around the world. This will show whether birds of a particular species are increasing or decreasing in the coming times. If the number is decreasing, then reasons behind such decrease can be found and these birds can be saved from going extinct.

Simultaneously, photography and videography through drone cameras are also aiding in better documentation of forest development. It is presented to the Forest Survey of India, which does inventory for forest and non-forest areas and develops a database on forest tree areas. The forest department in Jharkhand's Dhanbad is also using a drone camera to monitor the forest cover as well as the different stages of plant growth.

Similarly, the Uttar Pradesh government has decided to monitor pollution sources with 'drone cameras' for environmental protection and effective control over pollution. With this, accurate reports

of pollution sources will be revealed immediately. Along with this, after inspecting various sources of pollution, its report will be uploaded online. This means that the officers will go to the place and they will be able to upload their inspection report online from the place itself. This is likely to accelerate the work of pollution control. Earlier it usually took a while to get the investigation report on the pollution sources, and due to which the action was also delayed. Consequently, the situation of pollution in many places would get worse. The Uttar Pradesh Pollution Control Board has now given instructions to upload the real-time report after inspecting the spot. Along with this, it has been decided that the sensitive places will be inspected with drone cameras.

Role of technology in combating forest fires:

- The Forest Survey of India (FSI) has developed a new technique, through which the information relating any place in the forest, that is vulnerable to fire breakout or can catch fire, can be made available in advance. An alert will be issued to the concerned states and along with this, complete information will also be shared.
- Under this technique, fire forecast is made by analysing NASA's Fire Weather Index (FWI) and Indian Meteorological Department's temperature and rainfall data. Through this, the rise and fall of temperature and humidity in area is continuously assessed. If the temperature is rising continuously and there is dryness, then there is a possibility of fire.
- The forest area is identified with the help of forest map prepared by Forest Survey of India and GIS (Geographical Information System). This year, an alert was issued regarding the fire in Sariska Tiger Reserve in Rajasthan. However, since the alert was not taken seriously, adequate arrangements were not made. The fire became very wild and had to be extinguished with the help of army helicopters.
- The Forest Survey of India (FSI) claims that this technique is being used in developed countries like Canada, Australia, and South Africa. Though these nations are not able to make accurate analyses like India. Since India takes the help of forest mapping and GIS etc. as well in its assessment, this makes the information more accurate.
- According to the World Resources Institute, from 2001 to 2021, approximately 12.9 million hectares of forests around the world were burnt

to ashes. The fire in the forests of the Amazon and Australia could not be controlled for a long time. As the information is not made available on time, the fire brigade team cannot reach on time. By the time the team arrives, the fire already assumes its wild form. Scientists have developed a system using AI technology, through which the incident of fire can be detected in time. According to the report of Deutsche Welle, various companies are using Artificial Intelligence for this. Their software simultaneously analyses satellite images as well as the sensors on the ground.

- If there is smoke or a change in the thermal infrared data of the area, the software immediately captures it. As soon as there is confirmation of fire, information is sent to the fire brigade personnel and the fire brigade team reaches the spot immediately.

Fire Map Technique:

- In the event of a fire in the forests, the fire along with the winds can change its direction in a short span of time. So is there any technique to catch it as well? There is a technology called fire map, which can predict the direction of fire in the next few hours.
- Artificial intelligence technology quickly reports data such as weather and drought of the forest, based on the information received from sensors and satellites on the ground. There is a software that can tell in which direction the forest fire will spread.

Role of Geospatial Technology:

- Hosting the United Nations World Geospatial International Congress, the Indian Prime Minister has specially underlined the importance of geospatial technology in environment and ocean conservation. The oceans related Digital Platform is using geospatial technology to manage our oceans and it is extremely important for our environment and marine ecosystem.
- India has already set an example in sharing the benefits of geospatial technology. The South Asia Satellite is improving connectivity and facilitating communication in India's neighbourhood. There is no doubt that the possibilities offered by geospatial technology are endless. Sustainable urban development, managing disasters and even mitigating their effects, monitoring climate change effects, forest management, water management, combating desertification, food security, etc. are many aspects through which we can do a lot for our earth using the geospatial technology.
- The role of technology has been seen quite

positively when it comes to exchange of tsunami advisories, storm surge warnings, high tide warnings, critical situation information arising out of various hazards, and assessment of various types of risks due to maritime disasters in their coastal areas.

DNA Barcoding Techniques and Wildlife Conservation:

- To identify any species, a sample of DNA is taken either from the skin of the animal or the leaves of the plants. Then the polymer chain reaction of these DNA and primers is done and eventually, the sequencing is done by the process of electrophoresis. As a result, we get to know the barcode of that sample. DNA fingerprinting is also used in this.
- DNA barcoding has so far identified more than 100 species of plants, animals, and fruits. This not only gives information regarding the new species rather it also provides information relating to adulteration in substances. The uses of DNA barcoding are not limited to just one area and its usage can be made in various sectors through research. This technology is also effective in identifying the parts of animals used in wildlife smuggling. DNA barcodes of turtle species have been prepared in the Indian state of Uttarakhand. This will enable identification of different species of turtles and tracing the origin of the seized turtle meat.
- The technology adopted for energy saving has also helped in combating climate change and global warming. The Indian construction sector has recognised the importance of energy efficiency in promoting energy-saving ShadeSmart and radiant cooling technologies to keep buildings cool. The technology is yet to be effectively adopted in the construction industry. Smart, dynamic shade devices to keep rooms cool in India's climate zones and latitudes, and low-energy technologies for air conditioning can help the country make progress toward energy efficiency, a large part of which remains in the high temperature conditions.
- The Energy and Resources Institute (TERI) in collaboration with the Department of Science and Technology, under the Project Habitat model, has come up with a novel and cost-effective solution for heat retention in residential and commercial buildings with outward-facing windows. ShadeSmart with low power consumption makes homes comfortable. Similarly, there are many such measures and technologies through which necessary steps are being taken towards environmental protection.

Governance

Increasing Role of NITI Aayog In Strengthening Competitive Federalism

Recently, the Government of India's think tank Niti Aayog, while appreciating the policies and programs of the Haryana government, said that "Haryana is above the country's national level standards in terms of progress and is better than other states in many respects. Climate change, water resource management, and providing more employment can be a challenge for Haryana over time. That's why Haryana needs to work more in this direction." With this statement of the Vice Chairman of NITI Aayog, it is natural that one's attention is directed to the notion of competitive federalism which is getting stronger in the country.

Shortly before, NITI Aayog CEO Parameswaran said that food processing is not only an important sector for the health of the economy and people, but it can also prove to help increase the income of farmers. Along with this, nutrition can also play an important role in achieving goals. Today various Indian states are working towards increasing the income of farmers, adopting organic agriculture, creating mega food parks, reducing food waste, and making the food processing industry more competitive.

NITI Aayog expects the states to adopt such models which can prevent food wastage. Food comes from all over the world through very long and complex supply chains. It covers all, be it animal husbandry or agriculture, fisheries, storage, retail transportation, or even distribution. Therefore we need to stop food wastage through processing. This will not only save billions every year but with this millions of people around the world will be helped to get out of malnutrition.

Advantages of competitive federalism:

- When the concept of competitive federalism is strengthened, states like Uttar Pradesh move towards making District Good Governance Index, states like Assam form Act East Department, and states like Manipur looks active for the development of sports infrastructure under the vision of the country's first National Sports University. Today Indian states, in order to give new heights to their economy, are adopting new goals and devising methods to achieve these goals.
- The state governments of Uttar Pradesh and Tamil Nadu have set a target of \$1 trillion economy, and they are trying to attract foreign investment by organizing Global Investors' Summits. At the same time, Indian states are working with the vision of developing indigenous

technology by reducing their dependence on foreign technologies. In this direction the states, while coordinating with the central government, have not compromised with the goals of 'Atmanirbhar Bharat' and 'Make-in-India'. This is one of the positive features of Indian competitive federalism that has emerged in the last two-three years.

- **The activism of NITI Aayog to make laws relevant:**
- The role of NITI Aayog in setting better standards for competitive federalism and good governance in India can be identified from the fact that recently NITI Aayog, raised some objections on the five Bills, before the Ministry of Commerce of India. These issues have been discussed recently in a meeting between senior officers. NITI Aayog recently submitted its opinion on the Draft Spices (Promotion and Development) Bill, 2022; The Rubber (Promotion and Development) Bill, 2022; The Coffee (Promotion and Development) Bill, 2022; the Tea (Promotion and Development) Bill, 2022 and the Tobacco Board (Amendment) Bill, 2022.
- **Meaning and rationale of competitive federalism in India:**
- For a long time in India, work has been done on the model of cooperative federalism to improve the center-state relations. Many important steps have been taken at different times for the necessary cooperation and coordination between the Center and the State for the national interest. However, at the same time there have been periods in Indian politics when in the era of coalition politics, concepts like Bargaining Federalism were also in use.
- Nevertheless, in the creation of a new India in the 21st century and for achieving India's polity and constitutional commitments it is considered necessary to make competitive federalism successful, along with cooperative federalism. Continuous efforts are being made to strengthen Competitive federalism in India under the leadership of NITI Aayog.
- The concept of competitive federalism was particularly emphasized by Indian Prime Minister Narendra Modi when he noted its importance during his visit to the Liberty Foundation in the US. It has been considered necessary to work on the commitments of the Indian Constitution such as the concept of a welfare state, providing basic fundamental rights and facilities to the people, working under

the principle of separation of power i.e. Seventh Schedule to develop a better governance model. Now under the leadership of NITI Aayog, along with the achievement of these constitutional goals, emphasis has been laid on developing a healthy competition among the states to set new benchmarks of development for them, so that different states of India can compete in capital, investment, labour, entrepreneurship, innovation etc.

- Better competition among states creates new methods and standards of resource generation, which makes the state innovative, efficient, and capable. NITI Aayog is of the view that today the state government should not depend on any one unit for its development and its needs. The necessary assistance that are designated to them will be provided to them eventually. However the states should come forward to generate their own resources, this will also reveal their leadership capability.
- With these goals, NITI Aayog is trying to promote competitive federalism by motivating Indian states and union territories to perform better in all dimensions of development. It is engaged in encouraging healthy competition among states through transparent rankings related to the development of states in various fields. For this purpose, NITI Aayog has developed several indices to compare the qualitative development of states, which include: School Education Quality Index, State Health Index, Water Management Index, Sustainable Development Goal Index etc.
- These indices have such indicators to measure development, which can clearly ascertain the competitive ability of the states. Here it becomes necessary to know the definition of competitive federalism. According to the definition given by the American organization Liberty Foundation, in a federal system, when the states compete to provide high-quality goods and services to the citizens at the lowest cost, it is called competitive federalism. In such federalism, decentralization of powers and autonomy of states are most crucial.
- There have been effort on making the fiscal federalism run on the ideals of competitive federalism. This can be seen in the report of the 15th Finance Commission. The 15th Finance Commission in its interim report has preserved the recommendations of the earlier commission. The commission has recommended 41 percent share for the states in the divisible revenue for the financial year 2020-21, which was 42 percent till now.
- Overall, we can say that globalization, liberalization, increasing trends of privatization, increasing trend of digital economy and digital society, smart leadership in state governments and district administration, increasing role of think tanks and academia, flexibility of decision making system and factors like emphasis on making decision making system more people participatory have paved the way for making competitive federalism a success in India.



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PMI

(PRE+MAINS+INTERVIEW)
PROGRAMME 2022
JANUARY 2023
SCHEDULE

8
JAN.

PRELIMS

Timing :
12:00Noon-2:00pm

15
JAN.

MAINS

Timing :
GS Test : 9:00am-12:00Noon
Essay Test : 1:00pm-4:00pm

29
JAN.

INTERVIEW

Personality Test by a Panel of Retd.
& Working Bureaucrats and Professors

SYLLABUS

PRELIMS & MAINS

(TOPIC : Polity & Constitution,
of September 2022)

Source :
NCERT-11th + 12th, Dhyeya booklet & Current Affairs
(Dhyeya Class Notes + Magazine Perfect-7 +
Open Sources)

SYLLABUS

Essay

(TOPIC : India and its neighbourhood-relations, Bilateral,
regional and global groupings involving India and
affecting India's interests, Role of family, society and
educational institutions in developing values)

Source : Open Source, Dhyeya Booklet

☎ 9506256789, 7570009002

A-12 Sector-J Aliganj, Lucknow



National Issue

1 Citizenship Path to be Eased for 6 Minority Groups From 3 Nations

Why in News:

- On December 19, 2022, the Ministry of Home Affairs (MHA) has issued a notification with regard to imparting the Indian Citizenship to the Hindus, Sikhs, Parsis, Christians, Buddhists, and Jains from Pakistan, Afghanistan, and Bangladesh.

Key takeaways:

- The Indian Government has decided to make the citizenship process easier for minorities who have entered India from Pakistan, Afghanistan, and Bangladesh with valid documents.
- At present, the citizenship portal run by the MHA accepts expired passports as supporting documents only in the case of Hindu and Sikh applicants from Pakistan and Afghanistan who came to India before December 31, 2009. In 2018, after reports of corruption emerged during manual screening, all processes related with citizenship were moved online.
- The MHA is expected to structure a citizenship portal for accepting the expired passports and visas as supporting documents for members of six minority communities from Pakistan, Afghanistan, and Bangladesh.
- There is an organization working for the rights of Pakistani minorities in India, their portal doesn't accept expired Pakistani passports for people who came on or after January 1, 2010.

Citizenship Amendment Act (CAA), 2019:

- CAA 2019 seeks to grant citizenship to undocumented (or illegal) migrants from these six non-Muslim communities from the 3 neighbouring countries.
- It can help in scrutinising the applications of the documented minority migrants.

Indian Citizenship:

- Indian Constitution does not define the term 'citizen' but information regarding various categories of persons who are entitled to citizenship is given in Part 2 (Articles 5 to 11).
- There are five ways in which Indian citizenship can be acquired, i.e. by birth, descent, registration, territory acquisition and by nationalisation. The provisions related to this are listed under the Citizenship Act, of 1955.

Conclusion:

There are 18,000 registered Pakistani Hindus who await citizenship. The MHA informed parliament in December 2021 that between 2018 to 2021, the

government received 8,244 citizenship applications from minority groups and granted citizenship to 3,117 applicants. The government needs to take better and well-sorted decisions in this direction so that no one is negatively impacted through this.

2 A Public Servant can be Convicted for Graft on Circumstantial Evidence

Why in News:

Supreme Court said that public servants can be convicted for illegally grafting under the prevention of corruption act based on circumstantial evidence when there is no direct oral or documentary evidence against them. Under the IPC, a public servant is defined as a government employee, an officer in the military, navy, or air force; police, judges, officers of the Court of Justice, and any local authority established by a central or state Act.

Observation by court :

- Court said in order to prove the guilt of the accused; the prosecution has to first prove the demand of illegal gratification and the subsequent acceptance as a matter of fact. This fact in issue can be either proved by direct evidence, or in the nature of oral evidence/documentary evidence.
- Further, the fact in issue, namely, the proof of demand and acceptance of illegal gratification, can also be proved by circumstantial evidence in the absence of direct, oral, or documentary evidence. The court clarified that the presumption of demand or acceptance of a bribe would be made by the court only when foundational facts are proven.
- The court elaborated aspects to be considered to prove guilt. If a public servant does not demand a bribe in the first place but accepts it later, they would be guilty. However, mere acceptance or receipt of illegal gratification without anything more would not make it an offense under prevention of corruption act.

Corruption law in India:

- Corruption laws in India Public servants in India can be penalized for corruption under the Indian Penal Code, 1860 and the Prevention of Corruption Act, 1988. The Benami Transactions (Prohibition) Act, 1988 prohibits Benami transactions. The Prevention of Money Laundering Act, 2002 penalises public servants for the offence of money laundering. India is also a signatory (not ratified) to the UN Convention against Corruption since 2005.

Prevention of Corruption Act, 1988:

- Act said that if a public servant takes gratification other than his legal remuneration in respect of an official act or to influence public servants are liable to a minimum punishment of six months and maximum punishment of five years and a fine.
- The Act also penalizes a public servant for taking gratification to influence the public by illegal means and for exercising his personal influence with a public servant.
- It is necessary to obtain prior sanction from the central or state government in order to prosecute a public servant.

Conclusion:

CVC is a statutory body that monitors corruption cases in government departments. CBI works under its supervision. CVC can refer the cases to either Centre Vigilance Officer (CVO) in each department or CBI. Although the CVC or CVO recommends action against a public servant, the disciplinary action against a civil servant rests with departmental authority.

3 Court Vacation

Why in News:

Union Law Minister Kiren Rijiju criticized the judiciary for taking long vacations, saying the pendency of cases rises to record levels every year. A day later, Chief Justice of India (CJI) DY Chandrachud said that it will not have a vacation bench when the Supreme Court recesses next week for its annual winter break. This situation has once again brought the government and the judiciary into a confrontation.

About court vacations:

- Court vacation is a court holiday. The judicial schedule has its origins in colonial practices. The summer break probably began because the European judges of the Federal Court of India found the Indian summer too hot and took the winter break for Christmas.
- The Supreme Court's annual summer vacation typically lasts 7 weeks – it begins in late May, and the court reopens in July. The court takes a week's break each for Dussehra and Diwali and takes a two-week break at the end of December.

Vacation Bench:

- Normally, some judges are available to hear urgent matters even when the court is on vacation. A combination of two or three judges, called a vacation bench, hears important matters that cannot wait, such as bail, eviction, etc.
- In 2015, a five-judge bench of the Supreme Court heard a challenge to the constitutional amendment to set up the National Judicial

Appointments Commission (NJAC) during the summer vacation. In 2017, a constitution bench held a six-day hearing during the summer vacation in a case challenging the practice of triple talaq.

Arguments in favour of court vacation:

- Lawyers have often argued that in a profession that demands intellectual rigor and long working hours, holidays are much needed for rejuvenation.
- Apart from the day's work in the court, some hours are also spent in preparing for the next day.
- The legal fraternity argues that judges use the leave to write judgements.
- In addition, when the Court is in session, judges do not take leave of absence like other working professionals.
- Family tragedy and health are rare exceptions, but judges rarely take a day off for social work.
- Cutting down court holidays will not lead to a dramatic reduction in the pendency of cases, as pendency largely pertains to old cases which need to be systematically dealt with.
- The argument that reducing the length of leave will solve the pendency is not supported by the data and takes away from the real issues that contribute to the problem of pendency.

Criticism against court vacation:

- In the light of the increasing pendency of cases and the slow pace of judicial proceedings, the frequent extension of holidays is not good.
- For a common litigant, the holiday means a further unavoidable delay in the listing of cases.
- In 2014, when the pendency of cases touched the 20 million mark, CJI RM Lodha suggested keeping the Supreme Court, High Courts, and trial courts open throughout the year.

Conclusion:

The 230th report of the Law Commission of India in 2009 stated that holidays in the higher judiciary should be reduced to at least 10 to 15 days and the working hours of the court extended by at least half an hour should go.

4 Multi-State Co-operative Societies (Amendment) Bill 2022

Why in News:

Recently, The Lok Sabha referred the Multi-State Co-operative Societies (Amendment) Bill 2022 to a joint committee of Parliament.

Key Highlights:

The Bill was introduced on December 7. Many Opposition MPs asked for the Bill to be referred to a Standing Committee for review arguing that it

encroached on the rights of States.

Co-operative Societies:

Cooperatives are organisations formed at the grassroots level by people to harness the power of collective bargaining in the marketplace. They can be organised in different kinds of arrangements, such as using a common resource or sharing capital, to derive a common gain that would otherwise be difficult for an individual producer to get.

Amul is perhaps the best-known cooperative society in India. In 2021, the government carved out a separate Cooperation Ministry.

Constitutional Provision:

- 'Cooperatives' is a state subject under the Constitution. They come under the state government's jurisdiction. However, there are many societies whose members and areas of operation are spread across more than one state. For example, most sugar mills along the districts on the Karnataka-Maharashtra border procure cane from both states.
- Through the 97th constitutional amendment, Part IX-B (The Co-Operative Societies) was inserted into the Constitution. The right to form cooperative societies was included as the Right to Freedom under article 19 (1)(c). Article 43-B (Promotion of Cooperation societies) was inserted as one of the Directive Principles of State Policy.

The existing Laws:

- The Multi-State Co-operative Societies Act (MSCS) of 2002 — was enacted for managing Multi-State Cooperative Societies.
- Cooperatives of more than one state are registered under the MSCS Act.
- Their board of directors has representation from all states they operate in.
- Administrative and financial control of these societies is with the central registrar, with the law making it clear that no state government official can wield any control over them.

Key Features of the Amendment Bill:

- The Bill seeks to strengthen governance, reform the electoral process, improve the monitoring mechanism, and ensure ease of doing business in multi-State cooperative societies.
- It also aims to improve the composition of boards.
- It ensures financial discipline, besides enabling the raising of funds in multi-State cooperative societies.
- The Bill has provisions for setting up a Cooperative Election Authority, a Cooperative Information Officer, and a Cooperative Ombudsman. It will make the governance of multi-state cooperative societies more democratic, transparent, and accountable.
- To promote equity and facilitate inclusiveness,

provisions relating to the representation of women and Scheduled Caste/Scheduled Tribe members on the boards of multistate cooperative societies have been included.

5

Rule 267 Becomes The Bone of Contention in Rajya Sabha

Why in News:

Recently, Rule 267 of the Rajya Sabha rulebook became the bone of contention in the Upper House of Parliament.

About Rule 267:

- The Rajya Sabha rulebook defines "Rule 267" under "Suspension of Rules."
- According to the rulebook, "Rule 267 is an instance where any Member, with the consent of the Chairman, may move that any rule be suspended in its application to a motion related to the business listed before the Council of that day, and if the motion is carried, the rule in question shall be suspended for the time being."
- The rule gives a Rajya Sabha member the power to suspend the pre-decided agenda of the day with the Chairman's approval.
- In Parliament, a member has several ways to raise issues and seek the government's response, such as in Question Hour, Zero Hour, and Special Mention.
- A discussion under Rule 267 is of great significance simply because all other business would be put on hold to discuss an issue of national importance.
- An issue admitted under Section 267 signifies its importance, and the government will have to respond to the matter.

Bone of contention:

- Any notice by the opposition members under Rule 267 has not been entertained by the Chairman in this winter session of 2022.
- The opposition members in the Upper House have been consistent in demanding a debate on the India-China border situation.
- According to statistics, the rule has been invoked in 11 instances between 1990 and 2016. The last instance was in 2016 under then Chairman Hamid Ansari on "demonetization of currency."
- Previous Chairman Venkaiah Naidu had not accepted a single notice under the rule during his five-year term.
- Former Vice President Shankar Dayal Sharma, between 1990 and 1992, accepted four such notices.
- Bharon Singh accepted three, while Hamid Ansari accepted four under Rule 267.
- It is stated that moving motions under Rule 267 have become a well-known mechanism for

causing disruption.

Way Forward:

Rule 267 is an imperative tool of the Upper House to question the government on important matters. The notices brought under Rule 267 must be examined thoroughly on merit basis, and any intention of disruption should be rejected by the Chairman.

6 Sanitation Workers' Development Scheme

Why in News:

Recently, to ensure the welfare of sanitation workers in Tamil Nadu, Chief Minister MK Stalin launched the development program for sanitation workers across the state during a function.

About Sanitation Workers Development Scheme:

- The Sanitation Workers' Development Scheme has been launched by the Government of Tamil Nadu to identify sanitation workers and ensure their welfare through various government initiatives.
- The objective of the scheme is to improve the welfare of sanitation worker who faces several socio-economic challenges in their workplace every day.
- A mobile application has been launched for the identification and census collection of sanitation workers under this scheme. A survey will be conducted to identify the sanitation workers and the data collected will be uploaded to the application.
- The first phase of this scheme will be implemented in five urban local bodies of the state. Later it will be extended to other local bodies.

Key Point:

- The scheme will not only benefit 53,301 sanitation workers, including 18,859 permanent employees of urban local bodies and 34,442 temporary contract workers, but all informal workers engaged in sanitation work in the private sector.
- In collaboration with the Urban Management Centre, Ahmedabad, the local bodies propose to implement the scheme effectively, especially with a focus on strengthening waste and faecal sludge management.
- SWDScheme will be implemented through local bodies, so that they can take advantage of various welfare schemes of the government. It will provide necessary skill training for mechanization of cleanliness drive. It will ensure that all Sanitation Workers are covered under pension and insurance schemes.
- It will ensure that children of sanitation workers have access to education and other basic facilities
- It will provide loan assistance and other facilities through banks to the Sanitation Workers for pursuing alternative occupations.

Way Forward

Sanitation workers are at the forefront of keeping our cities clean and healthy but despite the implementation of regulatory measures, the sanitation workers face various socio-economic challenges. Through this scheme, the standard of living of the sanitation workers will improve and the economy will improve.

7 'Betta -Kuruba' or 'Kadu- Kuruba' Community

Why in News:

On 22 December 2022 Rajya Sabha passed a bill Constitution (Schedule Tribes) Order (Fourth Amendment) Bill 2022 to include Betta-kuruba community in schedule tribe category of karnataka. Lok Sabha has already passed the bill on 19 December 2022. The Bill seeks to amend the Constitution (ST) Order, 1950, with respect to its application to Karnataka by substituting entry 16 to include "Betta-Kuruba" as a synonym for the "Kadu Kuruba" community as requested by the state government.

About Betta-Kuruba community:

- Betta kuruba (Betta means 'hill' and kuruba means 'shepherd') community lives in the hilly region of Karnataka and one of the few indigenous community of the Nilgiris. This community was economically backward. They suffer from lack of education. Their occupation involves collection of forest produce and bamboo. They have their own dialect with no script. They use primitive hunting tools.
- They have only 5000 members living in the southern state. They are generally believed to be the descendants of the Pallavas. Their language name is "Betta kurumba" (Dravidian language) which is closely related to tamil. Consanguineous marriages are preferred among them.

Process of inclusion in ST category:

- In case of state/UT, President issues the notification after consulting the governor of the state concerned. But any inclusion or exclusion of any caste or tribe from presidential notification can be done by parliament only.
- After inclusion in the ST category list, they will be entitled to all benefits provided to the members of the Scheduled Tribes, especially reservation in educational institutions and government jobs. Through this Bill, their living standard will improve, they will get education and their social structure in the hierarchy will improve.

Way Forward:

Only adding communities in the ST list will not help. The government should consider taking welfare measures for them as well. Many Tribal communities are still facing some serious issues pertaining to education, health and employment.



International Issue

1 India-Australia Economic Co-operation and Trade Agreement

Why in News:

India and Australia have signed the India-Australia Economic Cooperation and Trade Agreement (Ind-Aus ECTA) on 2 April, which will come into force on 29 December 2022.

Benefits for India under ECTA:

- Indian exports will benefit from preferential zero duty market access in Australia for 100 % of its tariff lines.
- It will benefit India's labour-intensive sectors such as gems and jewellery, textiles, leather, footwear, furniture, food, agricultural products, engineering products, medical devices, and automobiles.
- The agreement would also provide duty-free access to over 6,000 broad categories of Indian products in Australia.
- **Pharmaceuticals-** It constitutes India's second largest export after petroleum products to Australia. The deal would boost its export further.
- **Service Sector-** Australia has provided additional market access and mobility facility for Indian professionals including chefs and yoga teachers.

Benefits for Australia under ECTA:

- Australia gains preferential access on over 70 % of tariff lines, which are primarily raw materials and intermediaries such as coal, mineral ores, etc., required for India's domestic manufacturing industry.
- India will reduce import duties from 150 percent to 100 percent on Australian wines.
- The trade deal also resolves the long-pending Double Taxation Avoidance Agreement (DTAA) related to IT/ITES which will save a yearly \$200 million.
- **Merchandise Trade-**The deal is likely to increase bilateral merchandise exports by \$10 billion by 2026-27.

Objective of ECTA:

- The deal has the potential to raise bilateral trade between the two countries to nearly \$50 billion in next five years.
- This is expected to create at least 10 lakh jobs in the start-up economy.
- It provides an opportunity for Australian exporters to tap the vast Indian market of 1.4 billion consumers; on the other hand, it provides an opportunity for Indian exporters to market their value-added products.
- It provides a model for future FTA with other

developed countries.

Importance of FTAs:

- Drive economic growth and job creation.
- Open up new markets for exporters and importers.
- Create opportunities for foreign investment.
- Make domestic industries more competitive and decrease their dependence on government support.
- Help governments lower spending on subsidies for local industries.

Way Forward:

ECTA is a milestone in India-Australia Economic relations. It will boost economic cooperation and enhance the bilateral relations between the two countries.

2 China's WTO Dispute over US Chip Sanctions

Why in News:

China has filed a dispute before the World Trade Organization against the US restrictions on chip exports, accusing Washington of threatening the global supply chains.

US Chip Sanctions:

- The United States, in October 2022 announced new export controls aimed at restricting sales and services to Chinese chip manufacturers, effectively causing a technology decoupling from China
- The intention behind this is to prevent China from buying and manufacturing high-end chips with military applications, complicating Beijing's push to further its semiconductor industry and develop advanced military systems.
- It also includes export restrictions on some chips used in supercomputing as well as stricter requirements on the same of semiconductor equipment.

Concerns of China:

- The dispute filed by China in WTO is related to the export-measures of US as per the CHIPS Act of 2022, specifically targeting Chinese semiconductor industry.
- China has accused the US of hindering the normal international trade of semiconductors and threatening the stability of the global supply chains.
- It has invoked Article 4 of the Dispute Settlement Understandings (DSU) of the WTO which requires the US to reply within 10 days of receiving China's request for consultations and enter into consultations within not more than 30 days after

receiving the request.

WTO Dispute Settlement Mechanism:

- WTO has been one of the most active international dispute settlement mechanisms in the world.
- If the parties failed to achieve a mutually agreed solution, the complaint is guaranteed a rule-based procedure in which merits will be examined by an independent body (panels and appellate body).
- Introduced in the Uruguay Round (1994), the Dispute settlement Mechanism is a formal framework for settling disputes between WTO Member States.
- **Priority:** Amicable settlement through consultations
- Through this, WTO members can ensure that their rights under the WTO Agreement can be enforced.

Way Forward:

The current trade war between US and China has interrupted the growth dynamics in the world. Disputes arising between the nations must be settled speedily through WTO and both countries should identify ways of cooperation.

3 China Building Ropeway Near Tri-Junction

Why in News:

Recently, China has set up a ropeway near the Torsa Nala near Doklam on its side of the India-Bhutan-China tri-junction and is strengthening roads and other infrastructure along the entire eastern sector.

Insights of the news:

- According to defence officials, China has stepped up patrols in the Yangtse area of the Tawang sector to assert its claims in the area.
- Yangtse is one of the eight major friction points in the eastern sector, located 30-35 km northeast of Tawang at an altitude of around 17,000 feet.
- There has been hectic activity and construction along the eastern sector.

India-China Border:

- India-China (3488 km border) has differing perceptions owing to the non-marking of boundaries leading to transgressions and face-offs.
- The Line of Control (LAC) is divided into three sectors: western (Ladakh), middle (Himachal Pradesh and Uttarakhand), and eastern (Arunachal Pradesh and Sikkim).
- LAC in the border areas of Sikkim and Arunachal Pradesh is called Macmohan Line which is 1,140 km long.
- **Doklam and its significance:**
- Doklam is a high-plateau valley located between

China's Chumbi Valley in the north, Bhutan's Ha district in the east, and India's Sikkim state in the west.

- Also known as Donglang in Chinese, the area is spread over less than 100 sq. km area.
- Doklam is strategically important because it is located near the Siliguri Corridor which connects mainland India with the north-eastern part of the country.
- The Siliguri Corridor, a vulnerable point for India is also called Chicken's Neck.
- If a war breaks out with China, it will have an advantage in conquering the Chicken's neck of India as well as the entire North-Eastern of India.



Way Forward:

The rising frequency of scuffles between Indian and China troops is mirrored by growing political tension. India and China have mutually agreed upon the disputed areas and areas of differing perception along the LAC. Dialogue is the only viable option to resolve the tussle.

4 “Group of Friends” to Promote Accountability for Crimes Against Peacekeepers

Why in News:

India has launched “The Group of Friends” to promote accountability for crimes against peacekeepers, along with a database that will record all crimes against the Blue Helmets. It was launched during India's current presidency of the UNSC.

About ‘Group of Friends’:

- It is an informal group that seeks to promote accountability for all acts of violence against United Nations peacekeepers.
- It will facilitate support for the host state by

creating awareness, exchanging information, sharing best practices, supporting initiatives, and mobilising resources.

- The group will be convened and moderated by representatives of the Permanent Missions of Bangladesh, Egypt, France, India, Morocco, and Nepal as co-chairs and include all interested Member States and UN Partners.
- The Group of Friends represents the “political will” of member states to champion the implementation of the provisions of UN Security Council Resolution 2589, adopted in August 2021 under India’s Presidency of the UN Security Council.
- Resolution 2589 calls on Member States hosting UN peacekeeping operations to take all appropriate measures to bring to justice perpetrators of the killing of and all acts of violence against UN personnel, including, but not limited to, their detention and abduction.
- The Group of Friends will convene two meetings of its members per year and organise and host one event annually.
- A comprehensive database and analytical tools for recording and assessing crimes against peacekeepers will be the key to addressing impunity.

UN Peacekeeping:

- It was developed as an instrument to help countries torn by conflict and in order to create the conditions for lasting peace.
- The peacekeeping forces were established when the UNSC approved the deployment of UN Military Observers to the Middle East in 1948.
- Every year on September 29, the UN Peacekeepers International Day is observed.
- India is one of the most significant troop contributors to peacekeeping forces, having lost 177 soldiers in the line of duty.

Issues with the peacekeepers:

- The peacekeepers take on robust mandates in extremely hostile conflict zones.
- The involvement of armed groups, terrorists, and transnational organised crime has adversely impacted their operations.
- Also, some host states do not have the necessary capabilities to ensure such accountability when crimes happen against peacekeepers.
- Disinformation campaigns have also increased the risks for peacekeepers.

Way Forward:

Peacekeepers are the key tools available with the Security Council to maintain international peace and security, to practically stabilise conflict zones, and to move towards peace. It is the duty of host nations and other stakeholders to “Protect the Protectors.”

5

UNSC Adopts First-ever Resolution on Myanmar

Why in News:

Recently, the UN Security Council adopted its first resolution on Myanmar in 74 years to urge the military junta to end the violence and release all political prisoners, including ousted leader Aung San Suu Kyi. The resolution reiterated the call to uphold the country’s democratic institutions and respect human rights. Twelve members voted in-favor of the resolution, none opposed, while India, China and Russia abstained. India’s Permanent Representative to the UN Ruchira Kamboj said, “Being a neighbor of Myanmar, we are still not sure what impact this resolution will have on resolving issues in Myanmar.”

Procedure of UNSC voting

- The voting procedure of the Security Council is governed by Article 27 of the United Nations Charter and Rule 40 of the Provisional Rules of Procedure. As provided in Article 27, the decisions of the Security Council are made by an affirmative vote of nine members, with each member having one vote. However, voting takes place for two types of issues-
 - » Procedural Decisions
 - » Non-Procedural Decisions
- A negative vote cast by a permanent member on procedural matters does not invalidate a decision i.e. it does not establish a veto system.
- A non-procedural decision requires the concurring votes of all permanent members, meaning it establishes the veto system.



About the United Nations Security Council

- It is one of the six main organs of the United Nations, it was established on 24 October 1945 in New York. Its headquarter is located in New York City. It is the only organ of the United Nations that has the power to make decisions that member states are bound to implement.
- The council is made up of 15 members, which include permanent and temporary members.

Permanent member

- China, France, Russia, the United Kingdom and the United States

Non-permanent members:

- Albania, Brazil, Gabon, Ghana, India, Ireland, Kenya, Mexico, Norway, United Arab Emirates.
- Ecuador, Japan, Malta, Mozambique and Switzerland were elected to the UN Security Council as non-permanent members for the 2023-2024 term and will replace India, Ireland, Kenya, Mexico and Norway.

Functions and powers:

- Maintenance of international peace and security in accordance with the principles and purposes of the United Nations.
- Formulating a plan for setting up a system to regulate arms.
- Passing a resolution to take military action against an aggressor.
- Recommending admission of new members.
- Recommending the appointment of the Secretary-General to the General Assembly.
- To select judges of the International Court of Justice.

Conclusion:

India expects all parties in the Myanmar to shun violence and return to the path of dialogue. It reiterated its call to uphold democratic institutions and processes and to pursue constructive dialogue and reconciliation in accordance with the wishes and interests of the people of Myanmar, and urged all parties to respect human rights, fundamental freedoms and the rule of law.

6

Gender Recognition Reform Bill

Why in News:

Spain and Scotland recently passed a Gender Recognition Reform Bill that makes self-determining gender easier.

The Bill:

- This bill makes it easier for people to change their legally recognised gender.
- It will ease gender self-identification for LGBTQ+ people.

The Scottish Bill:

- The new rules require anyone applying for a Gender Recognition Certificate to have lived full-time in their declared identity for three months and six months (if they belong to the age group from 16 to 17), as opposed to the previous period of two years. The bill lowered the minimum eligibility age from 18 to 16.
- The revised law also establishes a three-month "reflection period", during which applicants can change their minds.

Spain's Bill:

- The minors from the age group of 12 and 13

will need a judge's authorisation to make the gender change, while those between 14 and 16 will have to be accompanied by their parents or legal guardians.

- People over 16 years of age may change their legally registered gender without any medical supervision.

Significance of the law:

- **Reduce harassment and stigma-** Till now, Spanish transgender people needed a diagnosis by several doctors of gender dysphoria — the psychological condition of not feeling a match between one's biological sex and gender identity. The new bill does away with these procedures.
- **Ease of living-** It will improve the lives of transgender people by allowing them to get official documents that correspond with their gender identities.
- **Reduce discrimination against transgender-** Due to the mismatch between one's identity and gender, LGBTQ+ people often face discrimination at their work and in public places.
- **Reduce violence-** Scotland's social justice minister Shona Robison said the passage of similar laws in other countries had benefited transgender people and has resulted in a "remarkable" decrease in violence against them.

Challenges and concerns:

- These changes could pose a threat to the safety of women and girls by making it easier for the predatory males to access single-sex spaces such as bathrooms.
- The declaration of an individual's desired gender and making changes to it, is a lengthy, expensive, and degrading process.
- Such laws could encourage more gay teenagers towards hormones and surgery.

Gender self-identification system:

- Gender self-identification is the concept that allows an individual to legally identify the gender of their choice by simply declaring it so, without facing any medical tests.
- The system for gender self-identification has been demanded by transgender people across the world, including India, as discrimination against them has been rampant.

Countries currently recognize gender self-identification:

- In 2014, Denmark became the first country in the world to approve the gender self-identification system for people wanting to change their legal gender.
- Other countries that currently have this system are Portugal, Norway, Malta, Argentina, Ireland, Luxembourg, Greece, Costa Rica, Mexico (only

in Mexico City), Brazil, Colombia, Ecuador, and Uruguay.

India's gender self-identification system:

- In India, transgender people's rights are governed by the Transgender Persons (Protection of Rights) Act, 2019 and the Transgender Persons (Protection of Rights) Rules, 2020.
- Under these rules, an application declaring gender is submitted to the District Magistrate. The individual applying for gender identification is not required to undergo medical examination for declaring the desired sex.
- The District Magistrate can process the application, based on the affidavit submitted, declaring the gender identity of an individual without medical or physical examination and provide an identification number to the applicant, which can be used as a proof of the application.
- Under the rules, state governments are required to constitute welfare boards for transgender persons to protect their rights and interests and facilitate access to schemes and welfare initiatives implemented by the Central Government.

Way forward:

The gender self-identification is key to breaking the gender binary, improving the ease of living for LGBTQ+ people, ending their discrimination, and allowing them basic rights without being to compromise on their self-desired identity. The bill brought by Spain and Scotland's government will give new impetus to a global debate on the rights of LGBTQ+ and strengthen their struggle for recognition, and inclusiveness and end their discrimination.

7 Indefinite Ban on Education of Women Students in Afghanistan

Why in News:

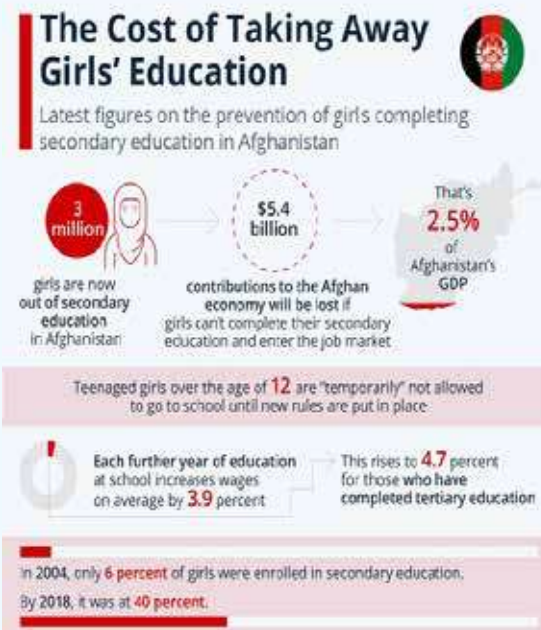
Recently the Taliban's Ministry of Higher Education ordered an indefinite ban on university education for women in Afghanistan.

#LetHerLearn campaign in social media:

- Youth around the world are protesting against the Taliban decision through posts on social media using #LetHerLearn.
- #LetHerLearn and #LetAfghanGirlsLearn have become a global talking point and people are using it to express their support for Afghan girls and women's right to education.
- World leaders have also joined the protest and have expressed their concerns in these forums.

Reaction of international organizations:

- The decision has been strongly opposed by the United Nations. It said that the Taliban cannot expect to be a legitimate member of the international community until they protect the rights of all Afghans, especially the human rights and fundamental freedoms of women and girls.
- Turkey and Saudi Arabia and Qatar (Muslim majority nations) strongly condemned the act and said that there is no explanation for not giving education to women in Islam. On the contrary, Islam is not against education rather it encourages education and science.
- New UNICEF analysis finds girls in Afghanistan are being denied their rights. Secondary education will have a devastating effect on the



country's economy, with the denial of secondary education to girls costing the Afghan economy at least US\$500 million over the past 12 months.

India's View:

- India reminded the Taliban of UN Security Council Resolution 2593, which reaffirms the importance of upholding human rights, including that of women and calls for the full, equal and meaningful participation of women.

Way Forward:

The entire world community has to come together and oppose it strongly and understand that denying education to women has been the main objective of Taliban. All the leaders of Muslim countries should strongly advocate for female education in Taliban ruled Afghanistan.



Environmental Issue



1 Himalayan Medicinal Plants in IUCN Red List

Why in News:

Three medicinal plant species *Meizotropis pellita*, *Fritillaria cirrhosa*, and *Dactylorhiza hatagirea*, found in the Himalayas have made it to the IUCN Red List of Threatened Species following a recent assessment. The assessment shows deforestation, habitat loss, forest fires, illegal trade, and climate change pose a serious threat to the species.

About *Meizotropis pellita*:

- Commonly called 'Patwa', it is a perennial shrub, endemic to Uttarakhand with a limited area of occupancy (less than 10 sq. km).
- **IUCN Status-** Critically endangered
- The species is threatened by deforestation, habitat fragmentation, and forest fires.
- **Medicinal Value:** Essential oil extracted from the leaves possesses strong anti-oxidant and is a promising natural substitute for synthetic antioxidants in the pharmaceutical industry.

About *Fritillaria cirrhosa* (Himalayan fritillary):

- **IUCN status:** Vulnerable
- It is a perennial bulbous herb that has declined at least 30 % of its population over the assessment period (22 to 26 years).
- **Medicinal Value:**
 - » In China, the species is used for the treatment of bronchial disorders and pneumonia;
 - » It is a strong cough suppressant and a source of expectorant drugs in traditional Chinese medicine.

About *Dactylorhiza hatagirea* (Salampanja):

- It is a perennial tuberous species endemic to the Hindu Kush and Himalayan ranges of Afghanistan, Bhutan, China, India, Nepal, and Pakistan.
- **IUCN Status:** Endangered
- **Medicinal Value:** The species is extensively used in Ayurveda, Siddhi, Unani, and other alternative systems of medicine to cure dysentery, gastritis, chronic fever, cough, and stomach aches.
- The species is threatened by habitat loss, livestock grazing, deforestation, and climate change.

Way Forward:

The Himalayan region is a biodiversity hotspot with a rich repository of medicinal plants. The assessment of these plants will set conservation priorities, and help protect the species.

2 Urgent Action Needed in South Asia to Curb Deadly Air Pollution

Why in News:

World Bank has released a report titled- 'Striving for Clean Air: Air Pollution and Public Health in South Asia'. In the report, it says that concentrations of fine particulate matter such as soot and small dust (PM 2.5) in some of the region's most densely populated and poor areas are up to 20 times higher than what WHO considers healthy ($5 \mu\text{g}/\text{m}^3$).

Reason for pollution in South Asia:

- The report highlights many sources of pollution in south Asia which include large industries, power plants, and vehicles. Besides this, the combustion of solid fuels for cooking and heating, emissions from small industries such as brick kilns, burning of municipal and agricultural waste, and cremation also play a big role in polluting the south Asia.
- The biggest problem with air pollution is that it travels long distances crossing the municipalities, States, and national boundaries, and gets trapped in large "air sheds" that are shaped by climatology and geography.
- The report identifies six major air sheds in South Asia where spatial interdependence in air quality is high. Particulate matter in each air shed comes from various sources and locations, for example less than half of the air pollution in South Asia's major cities is produced within cities.
- Several South Asian countries have adopted policies to help improve air quality, but their focus on mitigating air pollution generated within cities is yielding insufficient results.
- The report shows that current policy measures will only be partially successful in reducing PM 2.5 concentrations across South Asia even if fully implemented. To achieve greater progress, the focus of policy makers should expand into other sectors, particularly small manufacturing, agriculture, residential cooking, and waste management.

Three-phased roadmap to control pollution:

- **Phase 1:** Sets the condition for air shed wide coordination by expanding the monitoring of air pollution beyond the big cities, sharing data with the public, creating or strengthening credible scientific institutes that analyse air sheds, and taking a whole-of-government approach.
- **Phase 2:** Abatement interventions are broadened

beyond the traditional targets of power plants, large factories and transportation. During this phase major progress can be made in reducing air pollution from agriculture, solid waste management, cook stoves, brick kilns, and other small firms. At the same time, air shed-wide standards can be introduced.

- **Phase 3:** Economic incentives are fine-tuned to enable private-sector solutions, to address distributional impacts, and to exploit synergies with climate change policies. In this phase trading of emission permits can also be introduced to optimize abatement across jurisdictions and firms.

Conclusion:

Exposure to extreme air pollution has impacts ranging from stunting and reduced cognitive development in children, to respiratory infections and chronic and debilitating diseases. This drives up healthcare costs, lowers a country's productive capacity, and leads to lost days worked. Apart from this air pollution, can lead to several manmade disasters including the climate change catastrophes. Hence, it becomes crucial to reduce air pollution from the region by coordinate action.

3 Growing Habitat Crisis of the Himalayan Brown Bear

Why in News:

The Zoological Survey of India established in 1916 for the survey and research related to various animals of extraordinary and natural importance. It recently published a report claiming that by the year 2050 there may be a shortage in the habitat of brown bear by 73%.

Key Facts:

- The scientific name of Himalayan brown bear is *Ursus arctos isabellinus*. It is a subspecies of the brown bear that lives in the Himalayas and its adjoining areas. Especially found in northern India (Jammu-Kashmir, Himachal), northern Afghanistan, eastern Pakistan, western China and Nepal.
- The length of the Himalayan bear ranges from 1.3 meters to 1.2 meters and the length of the male bear may be upto 2.5 meters. Their body is covered with large and thick fur which is sandy and reddish brown in colour.
- Efforts are being made by IUCN to count them, but their actual number has not been counted.
- Their number has reduced to around 100 in the Ladakh. In other areas also their number was estimated between 700 to 800 which is decreasing rapidly.

- Based on the above report, teams have been formed to identify the threats to the Himalayan bear.
- In the preliminary survey, their residence related problems have been identified. This includes the construction of large-scale dams in the Himalayan regions and the construction of large-scale rail networks in the countries of Central Asia, the environmental damage caused by the construction of the Pakistan-China Economic Corridor, etc.
- At the same time, cutting of forests and large scale human activities and intrusion in their habitat will generate threats in the future.
- Rapidly decreasing glaciers, shortage of food and poaching are also a matter of concerns.
- Degrading environmental conditions, waste generated and accumulation of plastic and inorganic components due to excessive tourism in the Himalayan region have increased problems for the bears.
- Himalayan bears survive on the prey of grass, herbs, small creatures. Due to the lack of sufficient food, the consumption of waste generated from tourism and human settlements, such as plastic and inorganic components, they have started falling prey to disease and untimely death.
- However, protection from poaching has been provided by listing in Schedule-I of the 'Indian Wildlife Protection Act-1972'.
- The Zoological Survey of India plans to declare the study area a protected area for the conservation of the species.
- The study also aims to create an 'Adaptive Spatial Plan' for protected areas so as to reduce the risk and uncertainty of climate change and conserve organisms in their primary habitat.

4 IEX Becomes India's First Carbon-Neutral Power Exchange

Why in News:

Energy trading platform Indian Energy Exchange (IEX) became the country's first carbon-neutral power exchange, using market-based tradable instruments to offset its carbon emissions.

About Indian Energy Exchange (IEX):

- IEX is the first and the largest energy exchange in India operating since 2008.
- IEX provides a nationwide, automated trading platform for the physical delivery of electricity, Renewable Energy Certificates, and Energy Saving Certificates.
- It is a publicly listed company with NSE and BSE and is regulated by Central Electricity Regulatory

Commission (CERC).

- It enables efficient price discovery and increases the accessibility and transparency of the energy market in India.
- The beneficiary consumers belong to industries such as metal, food processing, textiles, chemicals, automobiles, IT industries, etc.

Central Electricity Regulatory Commission (CERC):

- It is a statutory body established under the Electricity Act 2003.
- CERC regulates power sector in India.
- It is mandated to promote competition, efficiency, and economy in bulk power markets, improve quality, promote investments and advise the government.

Significance:

- To reduce its carbon footprint, IEX voluntarily cancelled CERs (certified emissions reductions) from clean projects registered under the Clean Development Mechanism of UNFCCC.
- This will support corporate and industries that want to be associated with an environmentally responsible organisation and will enable them to contribute towards climate change.
- According to UNEP 2022 report, global greenhouse gas (GHG) emissions must be cut by 45% by 2030 to limit global warming to 1.5 degrees pre-industrial level.
- Total global emissions were estimated at around 53 GTCO₂eq in 2021.

Way Forward:

With IEX becoming India's first carbon-neutral power exchange, it encourages other players to contribute towards the cause of global warming. India has set a target to net zero emissions by 2070. This will enable India's energy transition in a sustainable manner.

5 73 Critically Endangered Species in India

Why in News:

The Union environment minister informed Rajya Sabha that 73 species are critically endangered in India, up from 47 in 2011, citing a report by the International Union for Conservation of Nature (IUCN). According to the IUCN report, the 73 species include 9 species of mammals, 18 birds, 26 reptiles, and 20 amphibians. The IUCN, which monitors the health and biodiversity status of species globally, declares a species critically endangered when it is believed to face an extremely high risk of extinction in the wild.

What did the environment minister say and what is its significance?

- The government is now considering including the most critically endangered species in Schedule-I

of the Wild Life (Protection) Act, 1972, to provide the highest level of protection.

- Out of the nine species of mammals considered critically endangered, eight are endemic, which means their habitat is restricted to a small geographical area within India. These include Kashmir stag (hangul), Malabar large-spotted civet, Andaman shrew, Jenkins shrew, Nicobar shrew, Namdhapa flying squirrel, large rock rat, and leaf-legged, leaf-nosed bat.
- The 18 critically endangered bird species include Bear's Pochard, White-rumped Vulture, Forest Owlet, Great Indian Bustard, Bengal Florican, Siberian Crane, Spoon-billed Sandpiper, Sociable Lapwing, Jerdon's Courser, White-backed Vulture, Red-headed Vulture, White-bellied Heron, Slender-billed Vulture, Indian Vulture, Pink-headed Duck, and Himalayan Quail.
- Of the 26 reptile species, five are endemic to India, including the island pit viper, whose habitat is restricted to a single location in the Car Nicobar Islands.
- Among amphibians, several species are restricted to habitats in the Western Ghats, the North East, and the Andaman and Nicobar Islands.
- The Charles Darwin's frog, for example, has an occurrence range of less than 100 km² in the Andamans, its distribution is severely fragmented, and it is in steady decline in the area.
- The Dattatreya night frog has an extension of less than 30 sq km, with all individuals in the same threatened area defined by the same threat.
- The Center is monitoring these species through various projects. For example, the Department of Science and Technology supported a project to study their foraging behaviour on white-bellied herons in the Namdapha Tiger Reserve in Arunachal Pradesh. The species is found only in Arunachal Pradesh and Assam.
- MoEFCC has also proposed that endangered species be included in various appendices of the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) to prevent trafficking.

Conclusion:

- The details are significant in view of the Kunming-Montreal Global Biodiversity Framework adopted at the United Nations Biodiversity Summit (COP15).
- Under the agreement, 196 member states commit to protecting 30% of the world's reserves for nature by 2030, reducing environmentally harmful subsidies by at least \$500 billion per year, and reducing at least 30% (by region) of degraded area to restore the ecosystem.

6 Lion @ 47: 'Vision for Amrutkal'

Why in News:

Recently, a document titled Lion @ 47: Vision for Amrutkal" has been launched by the Ministry of Environment, Forest & Climate Change to secure and restore lions' habitat.

Key Points:

The Project Lion document titled "Lion @ 47: Vision for Amrutkal" has been prepared with the following objectives:

- To secure & restore lions' habitats for managing their growing population;
- Scale up livelihood generation and participation of local communities;
- Become a global hub of knowledge on big cat disease diagnostics and treatment and
- Create inclusive biodiversity conservation through the Project Lion initiative.

Project Lion:

- The Project is being implemented in the Gir landscape in Gujarat, which is the last home of the Asiatic lion'.
- It envisages landscape ecology-based conservation of the Asiatic Lion in the Gujarat Project.
- Project Lion is being implemented by the State Government of Gujarat and other stakeholders like the Central Zoo Authority.

Gir National Park & Wildlife Sanctuary:

- It is located in the Junagarh district of Rajasthan.
- It was declared a sanctuary in 1965, and National Park in 1975.
- Maldharis, which are pastoral communities, reside in Gir.
- Maldharis have a symbiotic relationship with lions and their settlement is called 'nesses'.
- Gir has the largest tract of dry deciduous forests in the semi-arid western part of the country.

About Asiatic Lion:

- IUCN status- Endangered. CITES- appendix I.
- The Asiatic Lions are listed in Schedule I of the Wildlife (Protection) Act 1972.
- Distribution- They cover 9 districts including Junagadh, Gir Somnath, Amreli, Bhavnagar, Botad, Porbandar, Jamnagar, Rajkot, and Surendranagar, spread around 30,000 sq. km. termed as Asiatic Lion Landscape.
- Threats- Hunting & Loss of Natural Habitat. Lion Census is conducted every five years in India.

Way forward:

Lions are the flagship species. Initiatives like Project Lion and other conservation efforts ensure the protection of the entire ecosystem inhabited by these species.

7 Tal Chhapar Blackbuck Sanctuary

Why in News:

Recently, the famous Tal Chhapar blackbuck sanctuary received a protective cover against a proposed move of the State government to reduce the size of its eco-sensitive zone.

Need for Protection:

- The World Wildlife Fund for Nature (WWF) has taken up a major project for the conservation of raptors in the sanctuary.
- The Rajasthan High Court has intervened through suo-motu public interest litigation to protect the sanctuary.
- The court took cognisance of reports that its area was going to be reduced to three sq. km. under pressure from mine owners and stone crusher operators.

About Tal Chhapar Black Buck Sanctuary:

- It is situated in Rajasthan's Churu district which is spread over an area measuring 7.19 sq. km.
- Tal Chhapar was given the status of a sanctuary on May 11, 1966.
- The "Tal" word is Rajasthani, meaning plane land.
- The water during the rain goes through thin little lying regions and gets in the tiny seasonal ponds of water.

Tal Chhapar Wildlife Sanctuary:

- It is known as the home of blackbuck and a variety of birds in Rajasthan.
- The sanctuary is flanked by the Great India Desert, Thar and boasts a unique ecosystem and is an important birdwatching destination in India.
- Tal Chhapar Sanctuary is one of the top halting places for migratory birds such as harriers.
- The migratory birds pass through Tal Chhapar Sanctuary during September.
- The commonly seen migratory birds in the sanctuary are harriers, eastern imperial eagles, tawny eagles, short-toed eagles, sparrows, little green bee-eaters, black ibis, and demoiselle cranes, whereas skylarks, crested larks, ring doves, and brown doves are seen round the year.
- Apart from birds, desert foxes, and desert cats can be spotted in the sanctuary.
- The sanctuary is host to about 4,000 blackbucks and other wild animals, over 40 species of raptors, and more than 300 species of resident and migratory birds.

Way Forward:

Wildlife sanctuaries are important for the conservation of endangered species like blackbucks. They need to be protected to avoid the extinction of wildlife.



1 INS Mormugao

Why in News:

In a boost to its maritime capability, the Indian Navy has commissioned the indigenously-built guided missile destroyer INS Mormugao at a naval dockyard in Mumbai.

About INS Mormugao:

- The warship is packed with a plethora of sophisticated sensors, modern radar, and weapons systems such as surface-to-surface missiles and surface-to-air missiles.
- It has weapons like the BrahMos supersonic cruise missiles, whose range is being extended from 290 km to 450 km.
- The ship has 70-km MRSAM (medium-range surface-to-air missile) system, torpedo and rocket launchers, and different gun systems as well as a wide array of radars and sensors.
- The ship measuring 163 metres in length and 17 metres in breadth with a displacement of 7,400 tonnes can be regarded as one of the most potent warships to have been constructed in India.
- Named after the historic Goan port city Mormugao, the ship undertook her first sea sortie on December 19 last year when Goa celebrated 60 years of liberation from Portuguese rule.
- INS Mormugao is the second of the four 'Visakhapatnam' class destroyers, indigenously designed by the Indian Navy's Warship Design Bureau.
- It is constructed by Mazagon Dock Shipbuilders Ltd under Project-15B at an overall cost of Rs 35,800 crore.
- The ship is propelled by four powerful gas turbines and it is capable of achieving speeds in excess of 30 knots.
- It is equipped to fight under nuclear, biological and chemical (NBC) warfare conditions and that it is fitted with a modern surveillance radar which provides target data to the gunnery weapon systems.
- The ship's anti-submarine warfare (ASW) capabilities are provided by the indigenously developed rocket launchers, torpedo launchers, and ASW helicopters.

About Project 15B:

- Four Guided Missile Destroyers of Project 15B (P15B) are under construction at M/s Mazagon Dock Shipbuilders Limited, Mumbai. The contract to build these four destroyers was signed

in 2011. Their names are INS Vishakhapatnam, INS Mormugao, INS Imphal, and INS surat. Two destroyers INS Vishakhapatnam, and INS Mormugao have already been commissioned.

Conclusion:

Technically, destroyers are a category of warship that has high speed, manoeuvrability, and longer endurance to be part of the escort for larger vessels in a fleet or a carrier battle group. Guided missile destroyers are capable of anti-aircraft and anti-submarine warfare, apart from anti-surface operations. They are key assets in various types of naval operations, mainly offensive.

2 mRNA Vaccine Helps Fight Cancer

Why in News:

- The trial of an experimental cancer vaccine built on the mRNA (messenger ribonucleic acid) platform, made by Moderna and MSD (Merck&Co.), has shown promising results.

The significant trial:

- The trial companies claimed that patients taking the immunotherapy drug Keytruda for advanced melanoma (a kind of skin cancer) were less likely to die if injected mRNA vaccine.
- The vaccine showed a 44% reduction in the risk of dying of cancer or having the cancer progress.
- It is a personalized cancer vaccine, i.e., tailor made for each individual.

What is mRNA?

- It is a single-stranded RNA involved in protein synthesis.
- Role of mRNA is to carry protein information from the DNA in a cell's nucleus to the cell's cytoplasm, where the protein-making machinery reads the mRNA sequence and translates into corresponding amino acid in a growing protein chain.

mRNA Vaccine:

- mRNA vaccines do not inject the virus or a part, but rather enables the body itself to make a part.
- mRNA vaccination requires a smaller dose, given that the antigen (spike protein) will be created inside the body itself.
- These vaccines are fragile and need to be stored at ultra-low temperatures, below zero, to prevent from breaking.

How does mRNA vaccine for cancer works?

- It allows the body's immune system to seek and

- destroy cancerous cells, in this case melanoma.
- The personalized cancer vaccines work in concert with keytruda to disable a protein called programmed death 1 (PD-1) that help tumours to evade the immune system.
- When injected into the body, the body's cells act as a manufacturing plant, producing perfect copies of mutations for the immune system to recognize and destroy.

Way Forward:

The idea of cancer has been around for a long time. But with mRNA vaccine technology and personalization of the vaccine that it allows, provides a lot of optimism.

3 Navy Gets 5th Scorpene-Class Submarine; Commissioning in January

Why in News:

The fifth Scorpene-class conventional submarine under Project 75, Vagir was delivered to the Navy by Mazagaon Dock Shipbuilders Limited (MDL), Mumbai. It is scheduled to be commissioned into service in January 2023.

The P-75 India Project:

It has two parts- the P-75 and P-75I.

P-75:

- It includes the indigenous construction of six diesel-electric attack submarines of Scorpene design.
- These submarines are being constructed by Mazagaon Dock Shipbuilders Limited (MDL) in Mumbai in collaboration with the Naval Group of France.
- The Navy has commissioned four Scorpene, INS Kalvari (2017), INS Khanderi (2019), INS Karanj (2021), and INS Vela (2021) till now.

P-75I:

- It envisages the construction of six conventional submarines with better sensors and weapons and an Air Independent Propulsion (AIP) system.
- The P-75I is in the Request For Proposal (RFP) stage but has suffered delays.

The Current capability of Indian Navy:

- The Navy currently has 15 conventional and one nuclear submarine in service.
- It includes seven Russian Kilo class submarines, four German HDW submarines, four scorpene class submarines and the indigenous nuclear ballistic missile submarine INS Arihant.

Kalvari class submarines:

- These are also known as 'Hunter-Killer' type submarines, meaning they are designed to target and sink adversary naval vessels.

- They can operate in a wide range of Naval combat such as anti-warship and anti-submarine operations, intelligence gathering, etc.
- The submarines have around 220 feet length and 40 feet height.
- They can reach a highest speed of 11 knots when surfaced and 20 knots in water.

Way Forward:

The Scorpene's addition to the Navy is a welcomed and much needed step. With superior stealth features like advanced acoustic absorption techniques and low radiated noise levels, they will give boost to Atmanirbhar Bharat. This will also give edge to the Indian Navy to counter Chinese movement in the Indian Ocean.

4 IISc Develops Air Filtration System

Why in News:

A newly developed air filter by IISc, Bangalore can deactivate the germs 'self-cleaning' them out of the system using ingredients commonly found in green tea.

About the Research:

- The research of carried put by Prof Suryasarathi Bose and Prof Kaushik Chatterjee at Indian Institute of Science (IISc), Bangalore.
- It was supported by special grants from Science & Engineering Research Board (SERB).
- A patent has been granted to this technology in 2022.

Air-Filter:

- The germ destroying air filters can inactivate germs using ingredients like polyphenols and polycationic polymers commonly found in green tea.
- These 'green' ingredients rupture the microbes through site-specific binding.
- The novel antimicrobial air filters were found to deactivate SARS-CoV 2 (delta variant) with an efficiency of 99.24%.
- This technology was transferred to AIRTH, a startup which is replacing the germ-growing air filters with germ-destroying air filters for commercialization.

Significance:

- Over continuous usage, the existing air filters become a breeding ground for captured germs.
- The growth of these germs clogs the pores of the filter, reducing the life of filters and infecting people in the vicinity.
- India had an average drop of 3.86 years in life expectancy due to air pollution causing 1.8 million premature deaths in 2015.

- Usage of these filters will curb these concerns.

Way Forward:

The deployment of these novel antimicrobial filters in ACs, central ducts, and air purifiers can play a crucial role in fight against air pollution and mitigate the spread of air borne pathogens such as several coronaviruses.

5 Scientists Freeze Great Barrier Reef Coral in a World-First Trial

Why in News:

Scientists working on Australia's Great Barrier Reef have successfully trialled a new method for freezing and storing coral larvae which could eventually help re-wild reefs that are threatened by climate change.

Highlights of the new technology:

- Cryogenically frozen coral can be stored and later reintroduced to the wild. Though the current process requires sophisticated equipment including lasers.
- Scientists used the 'Cryomesh' to freeze coral larvae at the Australian Institute of Marine Sciences.
- The mesh technology could help store coral larvae at -1960C (-3200F).
- Cryomesh is lightweight, cheap, and ensures better preservation of the corals.
- Cryomesh technology was initially tested with smaller and larger varieties of corals on Hawaiian islands. The trial on larger varieties however failed.

The Great Barrier Reef:

- This is the world's most extensive coral reef ecosystem, located in the Coral Sea (North-East Coast), off Queensland, Australia.
- It is composed of over 2,900 individual reefs and 900 islands, which can be seen from outer space.
- It is the world's single biggest structure made by living organisms, called coral polyps.
- It was declared World Heritage Site in 1981.
- Significance of Mesh Technology for Great Barrier Reef:
- The Great Barrier Reef has suffered four bleaching events in the last seven years including the first ever bleach during a La Nina phenomenon, which typically brings cooler temperatures.
- The Cryomesh could help restore the corals in the ecosystem.

Way Forward:

The cryomesh paves the way for a future where coral reefs could be easily preserved and restored in the wild, enabling assistance to come to the aquaculture and restoration interventions.

6 Cervical Cancer Vaccine

Why in News:

India is expected to roll out an indigenously developed CERVAVAC vaccine for the prevention of cervical cancer among girls aged 9-14 years through their schools by mid-2023. The decision was based on the recommendation of the National Technical Advisory Group for Immunisation (NTAGI), to introduce the Human Papillomavirus (HPV) Vaccine in the Universal Immunisation Programme.

What is CERVAVAC?

- It is India's first indigenously developed quadrivalent human papillomavirus (qHPV) vaccine for the prevention of cervical cancer, which is said to be effective against four strains of the virus - Type 6, Type 11, Type 16, and Type 18.
- A quadrivalent vaccine is a vaccine that works by stimulating an immune response against four different antigens, such as four different viruses or other microorganisms.
- CERVAVAC is based on VLP (Virus-Like Particles), similar to the Hepatitis B vaccination.
- The Vaccine is developed by Serum institute of India.

Approval:

- The vaccine has received the approval of Drugs Controller General of India and has been cleared by the government advisory panel NTAGI for its use in the public health programme.

Significance:

- It has a significant potential to eliminate cervical cancer and it would be helpful if included in national HPV vaccination efforts and offered at a lower cost than existing vaccinations.
- Existing Two vaccines licensed globally are available in India — a quadrivalent vaccine (Gardasil, from Merck) and a bivalent vaccine (Cervarix, from GlaxoSmithKline) and are costly, with approximate cost of Rs. 2,000 to Rs. 3,500 per dose, and none of them are included in the national immunization program.
- Dr Rajesh Gokhale, Secretary of the Government of India's Department of Biotechnology, and Chairperson of the Biotechnology Industry Research Assistance Council (BIRAC) told vaccine would cost around Rs. 200 to 400.
- Also the indigenous vaccine has demonstrated a robust antibody response that is nearly 1,000 times higher than the baseline against all targeted HPV types and in all dose and age groups.
- The vaccine is extremely effective only when it's administered before the first sexual intercourse.

About Cervical Cancer:

- Cervical cancer is a prevalent as sexually transmitted infection.
- It's a type of cancer that occurs in the cells of the cervix, the lower part of the uterus that connects to the vagina.
- It is mostly caused by long-term infection with particular forms of HPV.
- It is the second most prevalent cancer form and the second leading cause of cancer death in women of reproductive age (15-44).
- Mode of transmission- Nearly 99% all cervical cancer cases are linked to infection with high-risk HPV, an extremely common virus transmitted through sexual contact.

Extent of cervical cancer:

- Despite being largely preventable, cervical cancer is the fourth most common cancer among women globally, according to the WHO. In 2018, an estimated 570,000 women were diagnosed with the disease and it accounted for 311,000 deaths across the world.
- Nearly fifth of the global cervical cancer cases are from India, with 1.23 lakh cases and around 67,000 deaths per year.
- On an average it kills one woman every 8 minutes in the country.

Challenges:

- The biggest task will be in allocating adequate resources and manpower for vaccinating the massive demographic of adolescent girls aged between 9 and 15, to ensure that they are protected from HPV early on.
- Lack of awareness- Overall awareness and screening for cervical cancer is very low in the community and that is a cause of concern.

Way Forward:

- Screening and vaccination are two powerful tools that are available for preventing cervical cancer. However, there is little awareness among women about the prevention of this cancer and less than 10% of Indian women get screened.
- Therefore, all women aged between 30-49 years must get screened for cervical cancer even if they have no symptoms and get their adolescent daughters vaccinated with the HPV vaccine.
- Concerted efforts should be made to ensure the involvement of private healthcare facilities and NGOs toward an effective rollout.

7

AI-based Model for Breast Cancer Detection

Why in News:

- Two researchers in India have developed a new method to help diagnose breast cancer at an

early stage. They have developed a model called NAS-SGAN, which can differentiate different cancer grades. Their model leverages deep learning and uses both labelled and unlabelled images to achieve high accuracy.

- Dr. Madhu Nair and Dr. Asha Das took help from Intel for image clarification for the project. Intel enabled the two researchers with a technology architecture based on its Xeon Scalable processors that are much more powerful than typical GPUs.

About NAS-SGAN model:

- NAS-GAN works in two steps: A GAN (Generative Adversarial Network) is used to generate images that are indistinguishable from real histopathological images. GANs are trained using unlabelled images, which are relatively easy to obtain.
- The new images are then used to help understand the data distribution. The GAN discriminator is then trained with labelled images to predict cancer grade. That is, in this model, cancer is detected using GAN and GAN discriminator.
- NAS-SGAN achieves high accuracy results even with a limited amount of annotated data, which helps to reduce the time-consuming and labour-intensive process of image classification.

About breast cancer:

- Breast cancer is a disease in which cells in the breast grow out of control. There are various types of breast cancer. The type depends on the cells in the breast which turn cancerous. Breast cancer can start in different parts of the breast
- A study conducted by ICMR-National Centre for Disease Informatics and Research (NCDIR) reveals that one out of every nine people in India is at risk of getting cancer in their lifetime.
- According to the study published in the Indian Journal of Medical Research (IJMR), one in every 67 men is at risk of developing lung cancer and one in every 29 women is at risk of developing breast cancer during their lifetime.
- It is estimated that in 2022, 14.6 lakh people in India were affected by cancer. Lung and breast cancer were found to be the most common cancer cases in men and women respectively.

Conclusion:

Currently, ultrasound, mammography, and MRI are used to detect breast cancer. A new automated technology known as 'NASSGAN' was developed by two scientists to discriminate different cancer grades. The proposed model can significantly reduce the need for annotated data, reducing time and cost.



Economic Issues



1 ILO Singapore Declaration

Why in News:

The 'Singapore Declaration' was adopted at the 17th Asia and the Pacific Regional Meeting of the International Labour Organization (ILO).

Singapore Declaration of ILO:

- The declaration was adopted by the delegates representing governments, employers, and workers' governments, employers, and workers in the regions.
- It agreed on the need for a social dialogue to address labour market challenges and find solutions in crises such as the COVID-19 pandemic, natural disasters, and economic uncertainty.

Key highlights of the Declaration:

- The declaration said that social dialogue is key to building trust, and resilient labour market institutions are essential to sustained recovery and inclusive & sustainable growth and need to be strengthened in the regions.
- Labour Protection- It urged governments to ensure labour protection for all through the promotion of freedom of association and the effective recognition of the right to collective bargaining throughout the regions.
- Closing Gender Gaps- The declaration called for closing gender gaps through measures that increase women's labour force participation, promote equal pay for equal work and promoting women's leadership.
- Formal economy- It asked governments to pursue collective and determined efforts to promote a smooth and sustained transition from informal to formal economy guided by the Transition from the Informal to Formal Economy Recommendations, 2015 (No.204 of ILO recommendations).
- Strengthen governance frameworks and respect for "Freedom of Association for migrant worker".
- Expand social protection to all the workers.

About ILO:

- ILO is a specialized agency of the United Nations (UN), established in 1919 through the Treaty of Versailles.
- It is headquartered at Geneva, Switzerland.
- Its mandates include setting labour standards, develop policies and devise programmes promoting decent work for all women and men.
- Important reports published by ILO are:
 - » Global Wage Report

» World Employment and Social Outlook

Way Forward:

The terms agreed at 17th APRM of ILO will shape and direct the regional and global policies towards labour welfare. It will promote job-rich growth which is inclusive and transformative.

2 48th Meeting of GST Council

Why in News:

The 48th Goods and Services Tax (GST) Council meeting was held in the national capital Delhi. The meeting, however, concluded without any decision on the much-awaited GST Appellate Tribunals, and tax rates applicable to Gutkha and Pan Masala.

Important decisions of the 48th GST Council meeting:

- The GST Council agreed to decriminalize certain offenses and raised the threshold for initiating prosecution to Rs 2 crore from the earlier Rs 1 crore. Further, the decision to ease business was taken in the meeting.
- Although, GST on pulses husk was reduced from 5 percent to nil and GST on ethyl alcohol supplied to refineries for blending with motor spirit (petrol) was reduced from 18 percent to 5 per cent, no new tax has been introduced.
- The issue regarding the mechanisms to prevent tax evasion on Pan Masala and Gutkha businesses also could not be taken up, the Finance Minister informed the media during a press briefing.
- GST on online gaming and casinos was not discussed. Although the Group of Ministers (GoM) headed by Meghalaya Chief Minister Conrad Sangma submitted its report on the issue a few days back, the report was also not circulated among the members.
- It was clarified by the Council that the incentives provided by the Government to banks under the scheme to promote RuPay Debit cards and low-value BHIM-UPI transactions are in the nature of subsidy and thus are not taxable.

About the GST council:

- The GST Council was constituted under the Article 279A(1) of the amended Constitution. As per the Article 279A, the GST Council, which shall be a joint forum of the Center and the States, shall consist of the following members:-
 - Union Finance Minister - Chairperson
 - Union Minister of State in charge of Finance and Revenue - Member
 - Minister in charge of Finance or Taxation or

any other Minister nominated by each State Government - Member

- Article 279A(4) empowers the Council to make recommendations to the Union and the States on important issues relating to GST, such as goods and services that may be subjected or exempted from GST, Model GST law, and principles governing place of supply.
- Further it can make recommendations on thresholds GST rates including floor rates with ceilings, bands, special rates for raising additional resources during natural calamities/disasters, special provisions for certain states, etc.

Conclusion:

Eight points out of 15 items on the Council's agenda, including data-sharing matters, were discussed. Nevertheless, the rest of the matters relating to revenue augmentation matters, setting up of GST appellate tribunal and GST on Gutkha and Pan Masala that could not be taken up were crucial in terms of better administration and better governance. Thus, remaining issues should be resolved soon.

3

Trade Data

Why in News:

India's merchandise exports recorded a flat growth at \$31.99 billion in November as against \$31.8 billion in the same month last year. The merchandise trade deficit, on the other hand, stood at \$23.89 billion from \$26.91 billion in the previous month, as per the data released by the Ministry of Commerce & Industry.

Exports:

- Exports grew by 0.6% over November 2021. This November's performance appears better because last year, Diwali was in November and that resulted in fewer working days and, as a result, lesser exports. It is over that smaller base that exports have grown by less than a percentage point.

Reason for the decline in exports:

- The bulk of the decline in India's growth rate is being contributed by the fall in volumes exported. Across the world, economies, especially those of India's biggest trading partners such the US and European countries, are either in recession or struggling to grow. This, in turn, implies a fall in demand for Indian goods that reflects in weaker exports growth.

Imports:

- Imports grew by 5.4% over November 2021.

The decline in imports growth has been more a balanced effect of declines in volume and prices. However, overall import has increased compared to previous year.

Reason for the decline in imports growth:

- It suggests that India's domestic demand is weakening as the effect of a tighter monetary policy (Higher interest rates and their drag on overall consumption and investment demand)

India- China trade:

- Total merchandise trade between India and China is set to grow by 34% to \$115.83 billion in the 12 months to March 2022, according to Commerce Ministry data released in Parliament. So far this year, between April and October, trade between China and India stood at \$69.04 billion.
- In recent years, Modi's administration has been trying to cut India's reliance on China — the country's biggest source of imports. It has imposed curbs on trade and businesses in 2020 amid the deadliest standoff in decades at their disputed Himalayan borders. However, this strategy did not work properly.

About Trade deficit:

- A trade deficit occurs when a country's imports exceed its exports during a given time period. It is also referred to as a negative Balance of Trade (BOT).

Impact of trade deficit:

- A trade deficit puts pressure on the rupee's exchange rate against the dollar (presuming that all imports require payment in US dollars). Persistently high trade deficits tend to weaken the rupee's exchange rate. A higher trade deficit will push up India's current account deficit (which includes the trade in goods as well as in services).

		November 2022 A \$ Billions	November 2021 A \$ Billions
Merchandise	Exports	31.99	31.80
	Imports	55.88	51.98
Services ¹	Exports	26.25	26.67
	Imports	17.96	12.63
Overall Trade (Merchandise+Services) ²	Exports	58.22	58.46
	Imports	73.83	64.61
	Trade Deficit	-15.61	-6.15

Conclusion:

A modest pick-up in export growth in November 2022 does not indicate a strong rebound, and a deceleration in import growth suggests that India's domestic demand is weakening, as tighter monetary policy begins to take effect. The government will have to work at the foreign policy level to increase exports.

4 **PNGRB Eying Petroleum Product Pipeline too within its Ambit**

Why in News:

The Petroleum and Natural Gas Regulatory Board (PNGRB) has undertaken a vital exercise to bring all petroleum product pipelines under its ambit. This will help determine their tariff and facilitate non-discriminatory third-party access to public sector oil companies' pipelines.

Petroleum and Natural Gas Regulatory Board (PNGRB):

PNGRB is a statutory body, constituted under the Petroleum and Natural Gas Regulatory Board Act, 2006. It mandates PNGRB-

1. To protect the interests of consumers and entities engaged in specified activities relating to petroleum, petroleum products and natural gas,
2. To promote competitive markets and for matters connected therewith or incidental thereto.
3. To regulate the refining, processing, storage, transportation, distribution, marketing and sale of petroleum and natural gas excluding production of crude oil and natural gas.

New mandate for PNGRB:

- The PNGRB Act of 2006 covers all petroleum and natural gas pipelines, but the focus so far has been only on gas pipelines.
- The new law requires PNGRB's authorisation apart from government approval for laying of cross-country petroleum products pipeline.
- The regulator also pointed out that the oil companies' reference to their pipelines as 'captive' did not have any legal backing.
- The PNGRB Act recognised only three types of pipelines: common carrier, contract carrier, and a dedicated pipeline laid to supply petroleum products to a specific consumer.

The merit of the new law:

- Access to state-run companies' product pipelines can dramatically increase private fuel retailers' ability to serve new markets across the country.
- This will increase competition in the fuel business and benefit end consumers.
- The availability of all-capacity use data with the regulator could also help the private sector lay common carrier pipelines.

Way Forward:

The new law mandated by the PNGRB needs to be

carefully examined to enhance the private player capacity and secure country's energy needs.

5 **Bulletin on India's Digital Economy**

Why in News:

According to a recent published bulletin of Reserve Bank of India (RBI), India's digital economy grew 2.4 times faster than the economy between 2014 and 2019 generating around 62.4 million jobs.

Highlights:

- In absolute terms, the size of the digital economy has grown from \$107.7 billion in 2014 to \$222.5 billion in 2019.
- In absolute US dollar terms, India's digital economy exhibited a growth rate (compounded annually, CAGR) of 15.63 percent during 2014-19.
- India's GVA (Gross Value Added) grew annually at a compound rate of 6.59 percent (as per ADB's IO tables).
- India's core digital economy increased from 5.4% of GVA in 2014 to 8.5% in 2019.
- The digitally dependent economy was 22.4% of the overall economy in 2019.

Digital Economy:

- It refers to economic activity which uses electronic communication and digital technologies to provide goods and services.
- The backbone of digital economy is hyper-connectivity which means the growing interconnectedness of people, organizations, and machines that results from internet, mobile, and Internet of Things (IoT).
- Components of Core Digital Economy includes-
 - » Hardware
 - » Software Publishing
 - » Web Publishing
 - » Telecommunication services
 - » Specialization and support services

Advantages of Digital Economy:

- **Revenue Increase-** In digital economy, each and every transaction is recorded. The customers get bills for the purchase and merchants are bound to pay tax to the government.
- **Empower People-** Curb the corruption; Transparency; Direct Benefit Transfer; Creation of jobs.
- **Curb on Black Economy-** It does so by restricting the cash transactions and ensuring digital payments.
- **E-Governance-** Digital economy help smooth the process of e-governance by delivering government services electronically.

- The core digital adds value to the non-digital sectors, such as construction, food and beverages, textiles, electrical, etc.

Important terms:

- **Gross Value Added (GVA)**- GVA is an economic productivity merit which measures the contribution of a corporate subsidiary, company, or municipality to an economy, producer, sector, or region.
- **Compound Annual Growth Rate (CAGR)** - It is the rate of return (RoR) that would be required for an investment to grow from its beginning balance to its ending balance, assuming the profits were reinvested at the end of each period of the investment's life span.

Way Forward:

The digital economy of India is growing at faster pace employing around 62.4 million workers. This tremendous growth underscores the need for digital literacy and skilling.

6

Jan Vishwas (Amendment of Provisions) Bill

Context:

- The Jan Vishwas (Amendment of Provisions) Bill has been introduced to shed the baggage of antiquate laws that were adversely affecting the development trajectory and also to increase ease of doing business and ease of living.
- The government through this bill tends to decriminalize 182 provisions of 42 laws across 19 ministries.
- It proposes amendments to the Acts, including The Boilers Act; The Aadhar Act, 2016; the Legal Metrology Act, 2009, 2006; Drugs and Cosmetics Act, 1940; Public Debt Act, 1944; Pharmacy Act, 1948; Cinematograph Act, 1952; Copyright Act, 1957; Patents Act, 1970; Environment (Protection) Act, 1986; Motor Vehicles Act, 1988; Trade Marks Act, 1999; Railways Act, 1989; Information Technology Act, 2000; Prevention of Money-laundering Act, 2002; Food Safety and Standards Act, 2006; Legal Metrology Act, 2009; and Factoring Regulation Act, 2011, among others.
- These Acts are administered and enforced by 19 ministries, including finance, food production and distribution, financial services, agriculture, commerce, environment, road transport and highways, posts, electronics, and IT.

Benefits:

- **Decriminalisation of minor offences.**
- **Rationalisation of monetary penalties-** depending on the gravity of the offence the bill envisages

increasing the minimum amount of fine or penalty by 10% every three years after it becomes law.

- **Bolstering trust-based governance-** A web of outdated rules and regulations causes a trust deficit. There are many laws in our country under which people are punished or have to make rounds of courts for very minor offences.
- **Honour the honest principle-** Commerce minister Piyush Goyal said that honest businesses want an honest system to run their business honestly, and live an honest life. The bill upholds this by ensuring that they aren't prosecuted unjustly for a small offence.
- **Minimum government maximum governance-** fear of imprisonment for minor offences is a major factor hampering the growth of the business ecosystem and individual confidence.
- **Redefining the regulatory landscape of the country-** The Bill strives to ensure that the regulatory ecosystem of the country doesn't hamper growth and remains helpful to growing and honest businesses.
- **End Red-tapism-** Commerce minister Piyush Goyal said that we want to give foreign investors the red carpet, not red-tapism.

Other steps relating to ease of doing business:

- **GST-** to end cascading effect of indirect taxation.
- **Repeal of 1500 obsolete laws.**
- **Simplifying 39,000 compliances.**
- **New 3500 provisions introduced that have decriminalized minor offences.**
- **The Bill will amend the Competition Act, 2002,** to regulate mergers and acquisitions based on the value of transactions. Further, it will deal with transaction value of more than Rs 2,000 crore will require CCI's approval.
- **Decriminalisation of various provisions under the companies act to help small companies by reducing the litigation burden on them.**
- **The Bill has been referred to a 31-member joint Parliamentary committee for scrutiny.** The committee will submit its report to parliament by the second part of the Budget session in 2023.

Way Forward:

The Bill seeks to improve the ease of doing business in the country which is a prerequisite for realising the success of various government initiatives like Make in India, Startup India, \$5 trillion economy, attract foreign investment and to make India leader of global manufacturing. Along with this there is also a need sensitise public servants about changes so that they don't harass honest businesses.

7 Punjab Ranks Second in Average Monthly Income per Agricultural Household

Why in News:

In data provided by Union Minister of Agriculture and Farmers Welfare Narendra Singh Tomar in the ongoing session of the Rajya Sabha, it has been revealed that Punjab ranks second in average monthly income per agricultural household, followed by Haryana.

National Sample Survey:

- The National Statistical Office (NSO) released the 77th survey on "Land and Livestock Holdings of Households and Situation Assessment of Agricultural Households" in the rural areas of India in September 2022.
- To calculate the average monthly income of farming households in different regions, various factors like leasing out of the land, net receipt from crop production, income from wages, net receipt from farming of animals, and net receipt from the non-farming business were added.
- As per the survey, Meghalaya has the highest average monthly income per agricultural household at Rs 29,348. It is followed by Punjab (Rs 26,701).
- However, considering imputed and paid-out expenses, the average household income decreases to Rs 26,973 in Meghalaya, Rs 21,705

in Punjab, and Rs 16,530 in Haryana.

- According to calculations, the average monthly income per household in India is Rs 10,218.

About agricultural households:

- Households having the value of produce from agricultural activities like cultivation, animal husbandry, etc., be more than Rs 4,000.
- At least one member of the household must have been self-employed in agriculture, either in principal status or subsidiary status, during the last year. This is a mandatory condition.

Average monthly income:

- The average monthly income of any household is the average net monthly earnings after business expenses and before taxes.
- For the survey, income from wages, from leasing out of the land, from crop production, from farming of animals, and from non-farm businesses has been considered for calculating the average monthly income.

Outstanding loans:

- Only 69.6% of the outstanding loans have been taken from institutional sources like banks, cooperative societies, and government agencies, even though 20.5% of loans have been taken from expert cash lenders.
- For the average amount of outstanding loan per agricultural household, Andhra Pradesh and Kerala are on top, followed by Punjab.



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Miscellaneous Issues

1 Kochi-Muziris Biennale 2022

Why in News:

Postponed twice due to the pandemic, recently the Kochi-Muziris Biennale opened displaying the works of over 90 artists from across the globe in varied media.

What are Biennales?

- It is an international large-scale showcase of art that takes place every two years at a particular site,
- Biennales are usually non-commercial enterprises- unlike art fairs, that centre around a curatorial theme.
- Venice Biennale is one of the oldest and prestigious biennales in the world.
- Bienal de Sao Paulo was instituted as the first non-European biennial in 1951.
- In 2009, Global Biennale Foundation was established with an “aim to create a platform for dialogue, networking and knowledge sharing among contemporary art biennials around the world”.

Significance of art Biennales:

- An invitation and participation in the global showcase is often viewed as a validation of an artist's work.
- Biennale participation can open opportunities for future museum exhibitions, gallery representation and acquisitions.
- Additionally, biennales are often named after the host city, bringing pride and promoting cultural tourism, generating revenue through visitors.

Kochi-Muziris Biennale:

- It was founded in 2011 by Kerala-born, Mumbai-based artist Bose Krishnamachari and Riyas Komu with an aim to “create a platform that will introduce contemporary, global visual art theory and practice to India”.
- It is organised by the Kochi Biennale Foundation in Kochi, Kerala.
- In ancient India, Muziris was a port city; Kochi is among the few cities in India where pre-colonial traditions of cultural pluralism continue to flourish.

Kochi-Muziris Biennale-2022:

- Central theme: “In Our Views Flow Ink and Fire”.
- It is curated by Singapore-based Indian-origin artist Shubigi Rao.
- It is the largest of its kind in South Asia.
- This four-month-long celebration of art will be organized across multiple venues in Kochi, expected to attract tourists from the world over.

Way Forward:

The Kochi-Muziris Biennale-2022 help showcase artworks of a variety of mediums including film, installation, painting, sculpture, new media, and performance art besides generating revenue for the country.

2 2022 Global Food Security Index (GFSI) Report

Why in News:

The recently released 11th Global Food Security Index (GFSI) shows deterioration in the global food environment, which is threatening to food security.

Global Food Security Index (GFSI) Report:

- It is designed and developed by London-based Economist Impact and is sponsored by Corteva Agriscience.
- It captures the year-on-year changes in structural factors impacting food security.
- GSFI considers the issue of-
 - » Affordability
 - » Availability
 - » Quality and Safety
 - » Sustainability and Adaptation
- The index takes 58 unique food security indicators including income and economic inequality.

Key Findings of the 2022 Report:

- **Food security trends down-** The deteriorating global food environment is getting vulnerable to shocks. The overall GSFI score jumped 6 percent in food security from 2012 to 2015. However, there is a reversal in the overall food security environment for the past three years due to structural issues.
- **Affordability plummets-** 2022 GSFI dragged down in two pillars- affordability & food quality and safety. It saw continuous weakness in ‘availability’ & ‘sustainability and adaptation’, due to sharp rises in food costs, declining trade freedom, and decreased funding for food safety nets.
- **The food security gap is widening-** Eight out of 10 top performers in 2022 index come from Europe, led by Finland (83.7), Ireland (81.7), and Norway (80.5). There is a continued widening of differences between top performers and the bottom rankers since 2019. It reflects inequality in the global food system.
- **Innovation is essential to building resilience-** Access to agricultural inputs and financial products, investment in R&D, and a strong supply chain infrastructure helped countries to have high food security scores.
- **Africa's Performance-** South Africa (59th position) is the most food-secure country in Africa. It achieved this rank despite various global

challenges to the country's agriculture sector, such as climate change, the fertilizer crisis caused by the Ukraine-Russia war, inflation, etc. South Africa is followed by Tunisia in Africa at 62nd position.

Way Forward:

The index shows that to meet these conventional and emerging challenges, investment in food security needs to be sustained from innovation in climate-resilient crop yield to investment in programs to assist the most vulnerable. It calls for attention to systematic gaps and actions needed to accelerate progress towards UNSDG of Zero Hunger by 2030.

3 World Malaria Report 2022

Why in News:

Recently, on December 8, WHO (World Health Organisation) released the World Malaria Report for 2022 under the theme "Harness innovation to reduce the malaria disease burden and save lives".

World Malaria Report:

- The WHO (World Health Organisation) releases the global malaria infection Report annually for creating awareness on the present trends relating to malaria management and its elimination at the worldwide, regional and national levels.
- The report highlights the progress towards the global targets and identifies opportunities and challenges for curbing and eliminating malaria.
- The findings of the 2022 edition of the report state that, despite disruptions in prevention, diagnosis, and treatment services throughout the world due the pandemic, the countries around the world have made positive efforts in this regard.

The key highlights of the report:

- The number of deaths has declined from 625,000 in 2020 to 619,000 in 2021. However, this number is more than the pre-pandemic levels (568,000 deaths in 2019).
- As for Malaria cases, the upward trend continued although at a slower rate 247 million cases in 2021, compared to 245 million cases in 2020 and 232 million in 2019.
- However, among the eleven high-burden countries, five countries namely, the Democratic Republic of the Congo, Ghana, India, Niger, and Tanzania, have recorded a decline in the number of deaths caused by malaria. However, these countries still be among the very best contributors to the world malaria burden.
- Insecticide-treated bednet (ITN) is a very important vector management tool in endemic countries. The quantity of ITNs distributed is same as it was in the pre-pandemic levels.
- In Africa, seasonal malaria chemoprevention

(SMC) is usually recommended for shielding children against the infectious disease. In 2021, the number of youngsters who received the treatment has increased considerably in comparison to the 2020 and 2019 figures.

About Malaria:

- Malaria is a critical mosquito borne blood disease caused by plasmodium parasites, preponderantly found in the tropical and semitropical areas of Africa, South America as well as Asia.
- The parasites unfold through the bites of infected female Anopheles mosquitoes.
- Shivers and chills, headache, muscle aches, tiredness, as well as fever and flu-like illness are some of the symptoms of Malaria.
- The RTS, S vaccine is a malaria vaccine, which is developed by GlaxoSmithKline (GSK) company and approved by the European Medicines Agency in 2015. It reduces the risk of Malaria by nearly 40%.

Way Forward:

The WHO has identified 25 countries to eradicate malaria by 2025 under its 'E-2025 Initiative'. As per the theme of the report in 2022, the WHO Global technical strategy for malaria 2016–2030 seeks to reduce malaria case, both incidents and mortality rates, by at least 40 percent by 2020, 75 percent by 2025 and at least 90 percent by 2030 against a 2015 baseline. The nations around the world need to work collectively in this direction.

4 GI Tag to Raktsey Karpo Apricot

Why in News:

Ladakh got its first ever Geographical Indication (GI) Tag to its Raktsey Karpo Apricot. Raktsey Karpo Apricot is one of the nine items recently registered in the GI tag lists. Although Ladakh grows more than thirty varieties of Apricots, the Raktsey Karpo variety is unique to the region. This Ladakh exclusive variety is matchless in terms of organic sweetness, it is colourful with a white seed coat.

About Apricot

- Apricot is the major fruit of Ladakh with large-scale cultivation in both Leh and Kargil districts. It is also being promoted under One District One Product for Kargil.
- Ladakh produces the most apricots in India, with a total output of 15,789 tonnes. Himachal Pradesh and Jammu & Kashmir are India's top two apricot-producing state and UT after Ladakh.

Climatic Conditions Required for Growing Apricots:

- Most of the apricots grow well in mid-hilly regions of India as they require cooler climatic conditions while the yellow apricots require warm climatic conditions. South-western and North-eastern

parts of India are highly suited for the cultivation of Apricots.

- Apricots are designed to be grown in a wide variety of soils. Though mostly they grow well in well-drained soil with good organic matter content.

What is the health benefit of apricot?

- Apricots are a great source of many antioxidants, including beta-carotene and vitamins A, C, and E. They are rich in a group of polyphenol antioxidants called flavonoids, these antioxidants have been shown to protect against illnesses, including diabetes and heart diseases.

What is GI Tag?

- A GI or Geographical Indication is a name or sign given to certain products that relate to a specific geographical location or origin of a region, city, or country. Geographical Indications are included as a component of Intellectual Property Rights (IPR) under the Paris Convention for the Protection of Industrial Property.
- At the international level, GI is governed by the Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPS) of the World Trade Organization (WTO).
- In India, Geographical Indication registration is administered by the Geographical Indications of Goods (Registration and Protection) Act, 1999 which came into effect from September 2003. GI is valid for 20 years.
- Darjeeling tea was the first product in India with GI tag in the year 2004-05.

Conclusion:

The other 9 products that received the GI Tag, include the Gamosa of Assam; Alibag White Onion from Maharashtra; and Attappady Aattukombu Avara, among others. Of the 9 GI tags given, five were for products from Kerala. With this, the total number of registered GI products in India stands at 432. These products represent the heart of the place and they should be protected and must be freed from any kind of infringement.

5

FIFA Football World Cup 2022

Why in News:

Argentina defeated France and won the FIFA (Fédération Internationale de football association) World Cup 2022, which was hosted in Qatar.

About this World Cup:

- The FIFA World Cup was in its 22nd year.
- The men's national teams of the FIFA member associations competed in this international football competition.
- Host nation: Qatar (awarded in 2010).
- It was the first time the World Cup had been staged in the Muslim and Arab worlds.

- It is the costliest World Cup to date, with a projected cost of nearly \$220 billion.
- With 48 teams expected to compete in the 2026 tournament, this world cup will be the last with 32 teams.
- After defeating Croatia 4-2 in the championship game of 2018, France was the reigning champion.

The FIFA World Cup:

- **About:** The most prestigious competition in the world, held every four years. Uruguay won the 1930 FIFA World Cup, which was held in Uruguay.
- **Jules Rimet Trophy:** Named after the Frenchman who initiated the competition, the Jules Rimet Trophy was given from 1930 until 1970. In 1970, a brand-new trophy known as the FIFA World Cup was placed up for grabs.
- **Membership:** 211 national associations are now included. The six regional confederations that make up the globe are: CAF (Africa), AFC (Asia and Australia), UEFA (Europe), CONCACAF (North & Central America and the Caribbean), OFC (Oceania), and CONMEBOL. These national associations must all be members of one of these regional confederations (South America).
- Swiss city of Zürich serves as the headquarters.

Key Moments from FIFA World Cup 2022:

Awards: FIFA announced a variety of prizes to honor players for their outstanding efforts at the World Cup, including:

- Kylian Mbappe won the Golden Boot for scoring the most goals (France).
- Emiliano Martinez won the golden glove (Argentina).
- Golden Ball (Tournament Performer of the Year): Lionel Messi (Argentina).
- Enzo Fernandez, a young player (Argentina).
- England wins the FIFA Fair Play Award.

WC Official Ball from FIFA:

- Al Rihla, which translates to "the trip," is a reference to a travelogue authored by the 14th-century adventurer Ibn Battuta.
- The Al Rihla World Cup ball is the first to be constructed entirely of water-based glues and inks.
- There was no official ball used in the First FIFA World Cup (1930), thus both of the finalists, Uruguay (T Model ball) and Argentina (Tiento), brought their own.
- More than two-thirds of the world's footballs are made in Pakistan, with Sialkot serving as the production center.

Mascot:

- La'eeb served as the FIFA World Cup 2022's official mascot.
- The Arabic word "la'eeb" means "super-talented player."

6 UNESCO World Heritage Sites

Why in News:

Recently, The Archaeological Survey of India said that three new cultural sites in India, including the iconic Sun Temple at Modhera, the historic Vadnagar town in Gujarat, and the rock-cut relief sculptures of Unakoti in Tripura, have been added to the tentative list of UNESCO world heritage sites.

Key Highlight:

- The UNESCO tentative list is an “inventory of those properties which each State Party intends to consider for nomination”.
- Though adding a site on the tentative list is a necessary prerequisite for any cultural, natural, or mixed heritage site to make it to the UNESCO World Heritage List. With this, India now has 52 sites on UNESCO’s Tentative List.
- The list indicates a rich cultural and natural wealth of India and shows the huge diversity of our heritage.

About The Cultural Sites:

- **The Sun Temple, Modhera:** It is dedicated to the Sun deity or Surya Dev. It is the earliest of such temples which set trends in architectural and decorative details. It represents the Solanki style of temple architecture at its best.
- **Vadnagar:** It is a municipality under Mehsana district of Gujarat. A multi-layered historic town, the history of Vadnagar stretches back to nearly the 8th century BCE. The town still retains a large number of historic buildings that are primarily religious and residential.
- **Unakoti:** It is located in the north-eastern region of Tripura. It is known as an ancient holy place associated with Shaiva worship. The site is a massive gallery set in an afforested area displaying a number of towering low-relief images in a unique style, making it a masterpiece of human creative genius.

World Heritage Sites:

World Heritage Sites are designated by UNESCO for having cultural, historical, scientific, or other forms of significance. The sites are judged to contain “cultural and natural heritage around the world considered to be of outstanding value to humanity”. They have been inscribed on the World Heritage List by the World Heritage Committee. The UNESCO World Heritage Committee is composed of 21 UNESCO member states, elected by the General Assembly. UNESCO seeks to protect and preserve such sites through the Convention Concerning the Protection of the World Cultural and Natural Heritage. This international treaty was drawn up in 1972. As of 2022, there are 40 World Heritage Sites located in India. Out of these, 32 are cultural, 7 are natural, and one, the Khangchendzonga National Park, is of mixed type. India has the sixth-largest number of sites in the world.

7 National Energy Conservation Awards, 2022

Why in News:

The State of Rajasthan was given a ‘Certificate of Merit’ by the Bureau of Energy Efficiency (BEE) under the National Energy Conservation Award 2022 for the efficient use of available resources for energy conservation and energy saving.

Energy Conservation Awards:

- The award was launched in 1991 by the Bureau of Energy Efficiency (BEE) under the Ministry of Power. These are awarded to recognise the contributions of industries and establishments in minimizing energy consumption while also maintaining their production level.
- They are given every year on Energy Conservation Day.

National Energy Conservation Day:

- This is celebrated annually on 14th December.
- It focuses on making people aware of global warming and climate change.
- It promotes efforts towards saving energy resources and highlights the achievements in the field of energy efficiency and consumption.
- The main attractions of Energy Conservation Day, 2022 were-
 - » National Energy Conservation Awards (NECA) 2022
 - » National Energy Efficiency Innovation Awards (NEEIA) 2022
 - » National Painting competition for school children 2022
 - » Launch of EV-Yatra portal and mobile app

National Energy Efficiency Innovation Awards (NEEIA) 2022:

- It is awarded to recognize outstanding work and innovative minds of India in the field of Energy Efficiency. NEEIA awards were started in 2021.
- The awards are evaluated based on Replicability, Affordability, Reliability, Impact on Energy Savings and Impact on Environment & Sustainability.

Launch of ‘EV-Yatra Portal’ and Mobile App:

- Developed by BEE, it is a Mobile application that facilitates in-vehicle navigation to the nearest public EV Charger.
- The website will disseminate information on various central and state-level initiatives to promote e-mobility in the country.
- The web portal will enable CPOs to register their charging details securely in the National Online Database.

Way Forward:

These initiatives spread awareness regarding the changing global climate and the actions required for sustainable growth. To observe real and impactful change, it is essential to transform the social norms that are ingrained within individuals and communities regarding energy conservation.

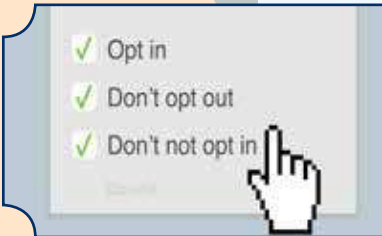
NEWS OF NATIONAL AND INTERNATIONAL IMPORTANCE

1. Green Methanol

NTPC has signed a non-binding MoU with Tecnimont, Indian arm of Italy's Maire Tecnimont Group, to explore the possibility to develop commercial scale Green Methanol Production facility at a NTPC project in India. Green methanol is a low-carbon fuel that can be made from either biomass gasification or renewable electricity and captured carbon dioxide (CO₂). The Green Methanol Project involves capturing carbon from NTPC power plants and converting it into a green fuel. Green Methanol has a wide range of applications, including serving as a base material for the chemical industry, storing renewable electricity, and even as a transportation fuel. It is also considered as a substitute fuel for maritime fuel applications.

2. Dark Patterns

Recently, an increase in the cases of Dark Patterns have been noted where internet-based companies have been tricking users into agreeing to certain conditions or clicking a few links. Dark patterns are unethical user interface designs that deliberately make your Internet experience harder or even exploit you. Such acceptances and clicks are flooding inboxes of the users with promotional emails they never wanted, making it hard to unsubscribe or request deletion.



✓ Opt in
✓ Don't opt out
✓ Don't not opt in

3. Kala Azar Disease

In his Mann Ki Baat programme on All India Radio, Prime Minister Narendra Modi emphasised that India has eradicated diseases like Smallpox, Polio and 'Guinea Worm'. He spoke about Kala Azar, another disease which is about to be eradicated. Kala azar is caused by bites from female phlebotomine sandflies—the vector (or transmitter) of the leishmania parasite. If blood containing leishmania parasites is drawn from an animal or human, the next person to receive a bite will then become infected and develop leishmaniasis. Months after this initial infection the disease can progress into a more severe form, called visceral leishmaniasis or kala azar.



4. Project Vaani

At 'Google for India 2022' event, IISc-backed non-profit foundation ARTPARK (AI & Robotics Technology Park) launched their pan-India inclusive language data initiative called 'Project Vaani' for open-sourcing datasets, which will amplify the Indian government's 'Digital India' efforts by including more diverse regional and local languages. Project Vani aims to compile a comprehensive dataset of transcribed text and spoken language from each district of India. These datasets are open-source through Vani's website and it can be used for further research and innovation.



5. Omicron BF.7

Omicron BF.7 strain is a sub-lineage of the Omicron variant BA.5. Reports from China indicate that the sub-variant BF.7 has the strongest infection ability (highly transmissible) compared to other omicron sub-variants. It has a shorter incubation period and is faster to transmit than other variants. The Omicron BF.7 also has a greater capacity to re-infect people who had a COVID-19 infection earlier and can even infect vaccinated individuals. Symptoms of infection with BF.7 are similar to those of other Omicron subtypes, primarily upper respiratory infection, including runny nose, cough, fever, and sore throat. Infection can be more severe in people with weakened immune systems.



6. Samudrayaan Mission

- In a written reply to a question in Lok Sabha, Dr Jitendra Singh said that Samudrayaan mission is aimed at sending three personnel to 6000-metre depth in a vehicle called 'MATSYA 6000' for the exploration of deep sea resources like minerals. Dr. Jitendra Singh said that the mission is expected to be realised by year 2026.
- 'MATSYA 6000' vehicle is being designed and developed by National Institute of Ocean Technology (NIOT), Chennai under Ministry of Earth Sciences. It has an endurance of 12 hours under normal operation and 96 hours in case of emergency for human safety. Design of the vehicle is completed and realization of various components of the vehicle is in progress. He said that Manned Submersible facilitates the direct observation by the human in deep ocean in exploring mineral resources rich in Nickel, Cobalt, Rare Earths, Manganese etc and collection of samples, which can be used for analysis.



7. Green Steel

- Union Minister of Steel Jyotiraditya Scindia told Rajya Sabha that the government was considering mandating the use of "green steel" in government projects.
- Green Steel is the manufacturing of steel without the use of fossil fuels. This can be done by using low-carbon energy sources such as hydrogen, coal gasification, or electricity instead of the traditional carbon-intensive manufacturing route of coal-fired plants.
- He said emissions from the steel industry have been brought down by 15% between 2005 and 2022 and Centre targets an additional 10% reduction in emissions by 2030. Energy consumption per tonne of steel produced has also come down as well as emission intensity in terms of CO₂, he added.
- The minister said the government has put into place a short-term plan, as well as medium and long-term targets to deal with the issue.
- The short-term plan looks at reduction of carbon emissions through energy and resource efficiency in renewable energy. The medium-term plan (2030-47) looks at Carbon Capture Utilization and Storage as well as usage of possibly green hydrogen. And, the long-term plan (2047-70) looks at a complete move over from ore-based and coal-based to much more technological innovations to come down to net zero.



8. Coalition for Nature

- At the 15th Conference of the Parties (COP15) of the Convention on Biological Diversity, several small island developing states (SIDS) have agreed to form a 'Coalition for Nature' for the implementation and adoption of the Global Biodiversity Framework (GBF).
- The coalition is led by Cabo Verde, Samoa and Seychelles. The organizers of the event called for action to "enhance the means of implementing the ambitious objectives for nature in SIDS under the Global Biodiversity Framework (GBF) post-2020".
- The goal of the coalition is to advocate for agreed common SIDS priorities and needs, such as greater means of implementing biodiversity objectives at these sites, by creating a unified front.
- SIDS hosts 19 percent of the world's coral reefs and their geographic isolation protects endemic plants and animals found nowhere else on Earth.

9. Doxing

- Elon Musk has decided to ban more than a dozen accounts on Twitter, including some notable journalists. All this is not for posting fake news or any conspiracy theories, but also due to influencers sharing flight and location details, also known as doxing.
- Doxing is a term that refers to the act of publicly disclosing someone's personal information, such as their full name, address, phone number, and other identifying details, without their consent.
- This information is often obtained through online sources such as social media profiles or public records, and then shared online with the intent to harass, threaten or embarrass the individual.



10. Surya Kiran Exercise

- The 16th edition of Indo-Nepal joint training exercise 'Surya Kiran-XVI' between India and Nepal was held at Nepal Army Battle School, Saljhandi, Nepal.
- Exercise "Surya Kiran" is conducted annually between India and Nepal to enhance interoperability in counter-terrorist operations.



11. Kazind-2022

- To strengthen the positive military ties between India and Kazakhstan, the nations conducted their 6th edition of joint army exercise KAZIND 2022 in Meghalaya.
- Troops from the Southern Regional Command of the Kazakhstan Army participated in the exercise, which began on 15 December.
- Indian Army personnel from 11 Gorkha Rifles participated in the joint training.
- The training included joint planning, joint tactical exercises, basics of special weapon skills and various missions ranging from HADR to assault hostile targets.
- The 14-day long exercise also aims to build mutual trust and understanding in the field of national security.



12. Tribal Development Report 2022

- Tribal Development Report 2022 is released in two volumes by India Rural Livelihoods Foundation (BRLF).
- According to the 2011 census, India's tribal communities constitute 8.6 percent of the country's population. However, according to a new report, even after 75 years of independence, they are at the bottom of the country's development pyramid.
- The report states that India's indigenous communities have been pushed from alluvial plains and fertile river valleys to the harshest ecological regions of the country such as hills, forests and arid regions.
- The report aims to inform stakeholders including key policy makers, practitioners, activists and academics to help them understand the scope of tribal issues.

13. Delimitation of Assam Constituencies

- Union Ministry of Law and Justice requested for delimitation exercise for Assam constituencies.
- On this request, the Election Commission of India has started the exercise of delimitation of assembly and parliamentary constituencies in Assam.
- The delimitation of constituencies will be done as per section 8A of the Representation of the People Act, 1950.
- Section 8A of the Representation of the People Act, 1950 allows for delimitation of parliamentary and assembly constituencies in Arunachal Pradesh, Assam, Manipur or Nagaland.
- Article 82 and Article 170 of the Constitution provide for readjustment of parliamentary constituencies and assembly constituencies respectively.
- As per the Delimitation Act, 2002, the 2001 census data will be used for readjustment of parliamentary and assembly constituencies in Assam.
- Reservation of seats for Scheduled Castes and Scheduled Tribes will be provided as per Articles 330 and 332 of the Constitution of India.
- The entire guidelines and methodology for the purpose of delimitation process will be designed and finalized by the Election Commission.



14. Sand Battery

- Sand batteries are a new innovation that have the potential to store large amounts of thermal energy and can aid in clean energy solutions.
- Finland has installed the world's first fully functioning "sand battery" in the city of Kankaanpää, capable of storing months of green energy on a single charge. These batteries can help solve the problem of supply throughout the year.
- The battery consists of a fully enclosed 4 m wide and 7 m high steel container with 100 tonnes of recycled sand.
- After heating the sand to 600°C using electricity generated by wind turbines and solar panels, it becomes a battery.
- Utility – The 'silo' supplies hot water to a district heating network connected to both residential and commercial buildings.
- Storage Capacity - The latest battery model can store up to 8 megawatt-hours of energy in the form of heat.

How sand batteries work



Current Affairs at a Glance

1. Spanish tennis player, Rafael Nadal has been named the Men's International Tennis Federation (ITF) World Champion 2022 for the 5th time after an outstanding 2022 season.
2. India's first green steel brand Kalyani Foresta manufactured by Kalyani Group, a Pune-based steel company, using renewable energy resources, has left zero carbon footprint on the environment.
3. Rajya Sabha Chairman Jagdeep Dhankhar has nominated veteran former athlete PT Usha to the panel of Vice-Chairmen in the Upper House of Parliament.
4. 'Goa Liberation Day' is celebrated on 19 December to commemorate the liberation of the state from Portuguese rule in 1961. As part of Operation Vijay, the Indian Armed Forces used the Armed Forces Trifecta with the help of local resistance movements to drive out European rule from the country.
5. Road, Transport and Highways Minister Nitin Gadkari launched the country's first surety bond insurance product, a move that will reduce infra developers' dependence on bank guarantees.
6. The National Stock Exchange of India (NSE) received in-principle approval from capital markets regulator Securities Exchange Board of India (SEBI) to set up a Social Stock Exchange (SSE) as a separate segment.
7. The European Union has adopted a plan to impose a global minimum tax of 15% on large businesses. The landmark agreement between nearly 140 countries aims to end governments' race to cut taxes to attract companies.
8. The Appointments Committee of the Cabinet (ACC) has approved the appointment of Dinesh Kumar Shukla to the post of Chairman, Atomic Energy Regulatory Board (AERB).
9. The Indian Navy launched 'Arnala', the first of eight indigenously built Anti-Submarine Warfare Shallow Water Craft (ASW-SWC) at L&T's shipbuilding facility at Kattupalla, Chennai.
10. The Unique Identification Authority of India (UIDAI) has won the prestigious GRIHA Exemplary Performance Award 2022, an apex national level green building award.
11. The India-Australia Economic Cooperation and Trade Agreement has come into force from December 29, 2022, following the enforcement of the India UAE Comprehensive Economic Partnership Agreement on May 1 earlier this year.
12. IndianOil in collaboration with Central TB Division launches Rapid TB Elimination Project in Uttar Pradesh and Chhattisgarh.
13. President of India lays foundation stone of PRASAD Project in Bhadrachalam and Rudreshwara Temple (Ramappa), UNESCO World Heritage Site in Mulugu, Telangana.
14. In a significant boost to the peace process in Manipur, the Government of India and the Government of Manipur signed an End of Operation Agreement with ZUF, an insurgent group from Manipur
15. Benjamin Netanyahu sworn in as Prime Minister of Israel.
16. National Health Authority (NHA) has released the beta version of Hospital Management Information System in line with Ayushman Bharat Digital Mission. It envisions providing a digital platform for healthcare providers especially focusing on private clinics and small healthcare facilities.
17. The Indian Air Force successfully test-fired the extended range version of the BrahMos air-launched missile against a ship target from a Su-30 MKI aircraft.

1. Why in Broadcast:

The Kunming-Montreal Global Biodiversity Framework (GBF) was approved on December 19, 2022, by the 15th Conference of Parties (COP15) to the UN Convention on Biological Diversity (CBD). The framework sets 23 goals that the global community must accomplish by 2030. These targets are milestones toward the overall goals for 2050.



Kunming Montreal Global Biodiversity Framework

5. Conclusion:

This is not the first time that countries at CBD have listed out targets to protect the biodiversity. The similar targets were meant to be achieved through Aichi Targets in 2010, and none of them were achieved as per the reports. The conservation of biodiversity must also be based on 'Common but Differentiated Responsibilities and Respective Capabilities' (CBDR) as the developing countries should not be the only ones bearing the burden. Thus, setting out targets can be of great help and importance if their implementation is ensured and effective.

2. About the Meeting:

- The meeting was held in two parts, the first being held in Kunming, China while the second part was concluded in Montreal, Canada.
- Kunming was supposed to hold the entire meeting of COP15, however, due to the Covid situation not being conducive in China, it could only organise a hybrid meeting and the conference was eventually shifted to Montreal.
- Nevertheless, the conference was held under the presidency of China.
- A total of 196 countries have signed the deal to protect 30% of world nature by 2030.

3. Major takeaways from the meeting:

The 30-by-30 deal:

- It is a commitment to protect at least 30 percent of the world's lands, oceans, and coastal areas by 2030.
- It also seeks to ensure that the restoration activities would start on at least 30 percent of degraded land or marine ecosystem by 2030.

Money for nature:

- Signatories aim to ensure \$200 billion per year is channelled to conservation initiatives, from public and private sources.
- Wealthier countries should contribute at least \$20 billion of this every year by 2025, and at least \$30 billion a year by 2030.

Big companies report impacts on biodiversity:

- The parties agreed to large companies and financial institutions being subject to 'requirements' to make disclosures regarding their operations, supply chains and portfolios.

Harmful subsidies, pollution, and pesticides:

- The nations agreed to slash incentives that deplete biodiversity by at least \$500 billion a year by 2030 and increase incentives that are positive for conservation.
- The agreement seeks to reduce pesticide usage by up to two-thirds and reduce the negative impacts of pollution to levels that are not harmful to nature.

4. The biodiversity convention:

- The CBD was an outcome of 1992 the Rio Earth Summit, as were the UNFCCC and CCD(Convention to Combat Desertification).
- This convention is not merely about the conservation and restoration of ecosystems, it is also about the sustainable use of resources and equitable benefits sharing from the usage of these resources.
- It has given rise to two supplementary agreements namely:
 - » The Cartagena Protocol, of 2003
 - » The Nagoya Protocol of 2014.
- The Cartagena protocol seeks to protect biodiversity from genetically modified organisms by ensuring their safe handling, transport, etc.
- The Nagoya Protocol deals with the commercial utilisation of biological and genetic resources.

1. Why in News:

The Government is setting up Hub for Empowerment of Women (HEW) at the National, State, and District levels under 'Samarthya' sub-scheme of 'Mission Shakti', an Umbrella Scheme for the safety, security, and empowerment of women.



Hub for Empowerment of Women

7. Conclusion:

HEW will act as an interface for rural women to approach the government for availing their entitlements. Since there are several schemes for women empowerment being implemented by several departments, bringing them and converging them on a single platform will definitely aid in greater access to resources.

6. Samarthya:

- It comprises the erstwhile schemes of Ujjwala, Swadhar Greh and Working Women Hostel with modifications.
- The existing schemes of National Creche Scheme for children of working mothers and Pradhan Mantri Matru Vandana Yojana (PMMVY) under the umbrella of Integrated Child Development Services (ICDS) are part of it as well.
- HEW will be part of this sub-scheme.

2. About the HEW:

- The hub was set up by the centre recognising the need for a single window system for the inter-sectoral convergence of schemes and programmes meant for women.
- It subsumed the existing Mahila Shakti Kendra Scheme.
- It aims to facilitate women's access to various institutional and schematic set ups for information dissemination and availing services.
- These can be related to healthcare, quality education, career and vocational counselling, training, financial inclusion, entrepreneurship, backward and forward linkages, health and safety for workers, social security and digital literacy etc.

3. The Need of Hub for empowerment of women:

- It will provide one stop convergent support services for empowering rural women with opportunities for skill development, employment, digital literacy, health and nutrition.
- It will serve as a medium for the implementation of women-centric government schemes and programmes between local administration, state government, and ministry of women and child development.
- It can be crucial in awareness generation for various government initiatives and programmes, as well as of societal problems that affect the lives of women in general.

4. About Mission Shakti:

- It was launched during the 15th Finance Commission, from the period of 2021-22 to 2025-26.
- It is an integrated women empowerment programme, launched as an umbrella scheme for the safety, security and empowerment of women.
- It comprises of two sub-schemes 'Sambal' and 'Samarthya'.
- The 'Sambal' sub-scheme is for safety and security of women,
- The 'Samarthya' sub-scheme is for empowerment of women.

5. Sambal:

- It consists of schemes of One Stop Centre (OSC), Women Helpline (WHL), Beti Bachao Beti Padhao (BBBP).
- It has a new component of Nari Adalats – women's collectives to promote and facilitate alternative dispute resolution and gender justice in society and within families.

1. Article 1, Name and territory of the Union

1. India, that is Bharat, shall be a Union of States.
2. The States and the territories thereof shall be as specified in the First Schedule.
3. The territory of India shall comprise—
 - a. the territories of the States;
 - b. the Union territories specified in the First Schedule; and
 - c. such other territories as may be acquired.



Part I The Union And Its Territory

7. State Reorganisations:

Dhar Commission:

- In June 1948, the Government of India appointed the Linguistic Provinces Commission under the chairmanship of S.K. Dhar to examine the feasibility of reorganisation of states on linguistic basis.
- It recommended the reorganisation of states on the basis of administrative convenience rather than linguistic factor.

JVP Committee:

- Due to resentment created by the recommendation of Dhar Commission, JVP Committee was constituted in December, 1948.
- It consisted of J L Nehru, Vallabhbhai Patel and P. Sitaramayya.
- It rejected language as the basis for reorganisation of states.

Fazl Ali Commission:

After the creation of Andhra Pradesh, the demand for creation of more states on linguistic basis gained momentum. Under the chairmanship of Fazl Ali a commission was formed. Its recommendation are:

- Preservation and strengthening of the unity and security of the country.
- Linguistic and cultural homogeneity.
- Financial, economic and administrative considerations.
- Planning and promotion of the welfare of the people in each state as well as of the nation as a whole.

2. Meaning of Territory of India:

- It consists of schemes of One Stop Centre (OSC), Women Helpline (WHL), Beti Bachao Beti Padhao (BBBP).
- It has a new component of Nari Adalats – women's collectives to promote and facilitate alternative dispute resolution and gender justice in society and within families.

3. Article 2, Admission or establishment of new States:

Parliament may by law admit into the Union, or establish, new States on such terms and conditions as it thinks fit.

4. Article 3, Formation of new States and alteration of areas, boundaries or names of existing States.

Parliament may by law—

- (a) form a new State by separation of territory from any State or by uniting two or more States or parts of States or by uniting any territory to a part of any State;
- (b) increase the area of any State
- (c) diminish the area of any State
- (d) alter the boundaries of any State
- (e) alter the name of any State

5. Validity of Article 3:

Under P. V. Krishnaiah Case, 1964, SC observed, Article 3 of the Constitution has been designed in such a way that enables the Parliament essentially to maintain the concept of federalism. Therefore, one of the basic structures, namely, federal character of the Constitution is reserved by article 3 of the Constitution. It does not violate the basic structure of the Constitution.

6. Exchange Of Territories With Bangladesh

- Under the 100th Constitutional Amendment Act (2015) India acquired certain territories of Bangladesh & transferred certain territories to Bangladesh in pursuance of the agreement and its protocol entered into between the Governments of India and Bangladesh.
- Under this deal, India transferred 111 enclaves to Bangladesh, while Bangladesh transferred 51 enclaves to India. In addition, the deal also involved the transfer of adverse possessions and the demarcation of a 6.1 km undemarcated border stretch.

1. Why in News:

The Prime Minister of India, Shri Narendra Modi has called for a mass movement to promote production of millets as the nation will celebrate International Year for Millets in 2023. In this regard, the PM along with other ministers attended a lunch which was organised by Ministry of Agriculture and Farmer Welfare and comprised dishes that were made out of millets.



The International year for millets 2023

6.Way Forward:

- The Indian Prime Minister in his message at FAO touched upon raising awareness to create 'Millet Mindfulness' highlighting the crucial role of institutions and individuals.
- International Year of Millets' is set to provide a unique opportunity to increase global production, ensure efficient processing, consumption, and subsequently promote better utilization of crop rotations.
- The extended trade of millets on a global level can encourage better connectivity throughout food systems while also promoting it as a key component of the food basket.

2. The International Year of Millets, 2023:

- The United Nations General Assembly (UNGA) adopted a resolution to declare 2023 as the International Year of Millets On March 3, 2021.
- The proposal was moved by India and was supported by more than 70 countries.
- The objective behind this proposal was to increase awareness about millets contribution towards food security and nutrition, its sustainable production and enhance investment in the related R&D.
- FAO of the United Nations, organized an opening ceremony for the International Year of Millets in Rome, Italy.

3. What are millets?

- Millet is a collective term for a number of small-seeded annual grasses cultivated as grain crops, primarily on marginal lands in dry areas in temperate, subtropical and tropical regions.
- They include cereals like sorghum (jowar), pearl millet (bajra), foxtail millet (kangni/ Italian millet), little millet (kutki), kodo millet, finger millet (ragi/ mandua) etc.
- There is evidence for consumption of millets in the Indus-Sarasvati civilisation (3,300 to 1300 BCE), they were the first crops to be domesticated.

4. Millets around the world:

- Millets are now grown in more than 130 countries, and are the traditional food for more than half a billion people in Asia and Africa.
- Globally, sorghum (jowar) is the biggest millet crop. The major producers of jowar are the United States, China, Australia, India, Argentina, Nigeria, and Sudan.
- Bajra is another major millet crop and countries like India and some other African countries are its major producers.
- Major millet importing countries in the world include Indonesia, Belgium, Japan, Mexico, Italy, USA, UK, Brazil and Netherlands.

5. Millets in India:

- Millets are mainly a kharif crop in India. During 2018-19, three millet crops i.e. bajra (3.67%), jowar (2.13%), and ragi (0.48%), accounted for about 7 per cent of the gross cropped area in the country.
- As per DGCIS data, India has total export of millets around 159,331.16 metric tonnes against 147,501.08 metric tonnes last year, thus the country registered a growth of 8.02% in millet exports.
- India's major export destination are UAE, Nepal, Saudi Arabia, Libya, Oman, Egypt, Tunisia, Yemen, UK and USA.

1. Why in News:

Rajya Sabha recently passed the Maritime Anti Piracy Bill, which as per Indian Government will provide an effective legal instrument for combatting the Maritime Piracy. The Bill was earlier passed in Lok Sabha on December 19, 2022.



Maritime Anti-piracy Bill

7. Conclusion:

This Bill will offer a powerful legal tool to combat maritime piracy in the absence of a specific legislation or legal provision on piracy in the Indian Penal Code or the Criminal Procedure Code. It would allow India to fulfil its responsibilities under the UN Convention on the Law of the Sea (UNCLOS). However, some issues like that of compulsory death penalty, area related issues etc. can be further improved and improvised.

6. Need for the Bill:

- There were 27 incidents of maritime piracy took place between 2008 and 2011 in which 288 Indian nationals were involved.
- While in 2014 to 2022, 19 incidents of piracy happened where 155 Indian crew members were involved.
- India is strategically located on the world's major shipping routes with a coastline of approximately 7,517 km.
- Approximately 95% of the country's trade by volume and 68% by value is moved through Maritime Transport.
- More than 90% of India's trade is conducted by maritime channels, and more than 80% of the nation's hydrocarbon needs were met via shipping.
- As of 2021, India owns more than 30% of global market share in the ship breaking industry, and is home to the largest ship-breaking facility in the world at Alang, Gujarat.

2. Key highlights of the Bill:

- The Bill enables Indian authorities to take action against piracy in the high seas.
- The bill would enable India to discharge its obligations under the United Nations' Convention on the Law of the Sea (UNCLOS).
- It applies to the sea beyond the Exclusive Economic Zone (EEZ), i.e., beyond 200 nautical miles from India's coastline.

3. Piracy:

- The Bill defines piracy as any illegal act of violence, detention, or destruction against a ship, aircraft, person, for private purposes, by the crew or passengers of a private ship or aircraft.
- Piracy includes any other act that is considered as piratical under international law.
- It also includes voluntary participation in the operations of a pirate ship or aircraft used for piracy.

4. Punishments and penalties:

- The Bill makes act of piracy punishable with:
 - » Imprisonment for life.
 - » Death, if the act of piracy causes or attempts to cause death.
- Offences will be considered extraditable, which means that the accused can be transferred to any country for prosecution with which India has signed an extradition treaty.
- In case of the absence of such treaties, offences will be extraditable on the basis of reciprocity between the countries.

5. Jurisdiction:

- The central government, in consultation with the Chief Justice of the concerned High Court, may notify Sessions Courts as the Designated Courts under this Bill.
- However, the Court will not have jurisdiction over offences committed on a foreign ship (unless an intervention is required) and warships and government-owned ships employed for non-commercial purposes.

1. Why in News:

The Cyberspace Administration of China, the country's cyberspace watchdog, is rolling out new regulations, to be effective from January 10, 2023 to restrict the use of deep synthesis technology and curb disinformation.



Deepfake Technology

8. Initiatives by India:

- In India, there are no legal rules against using deepfake technology.
- Specific laws can be addressed for misusing the tech, which include Copyright Violation, Defamation and cyber felonies.

7. Initiatives by other countries:

- The European Union's revised Code requires tech companies including Google, Meta, and Twitter to take measures in countering deepfakes and fake accounts on their platforms.
- If found non-compliant, these companies can face fines as much as 6% of their annual global turnover.
- The U.S. introduced the bipartisan Deepfake Task Force Act to assist the Department of Homeland Security (DHS) to counter deepfake technology.
- The measure directs the DHS to conduct an annual study of deepfakes — assess the technology used, track its uses by foreign and domestic entities, and come up with available countermeasures to tackle the same.

2. Deep Synthesis:

Deep synthesis is defined as the use of technologies, including deep learning and augmented reality, to generate text, images, audio and video to create virtual scenes.

3. DeepFake:

- Deepfakes are a compilation of artificial images and audio put together with machine-learning algorithms.
- It is an application of Deep Synthesis, where synthetic media is used to swap the face or voice of one person for another.
- It is used to generate celebrity porn videos, produce fake news, and commit financial fraud among other wrongdoings.
- It is used to spread misinformation and replace a real person's appearance, voice, or both with similar artificial likenesses or voices.

4. The Term:

- The term deepfake originated in 2017, when an anonymous Reddit user called himself "Deepfakes."
- This user manipulated Google's open-source, deep-learning technology to create and post pornographic videos.

5. China's New Policy to Curb Deepfakes

- The policy requires deep synthesis service providers and users to ensure that any doctored content using the technology is explicitly labelled and can be traced back to its source.
- Deep synthesis service providers must also abide by local laws, respect ethics, and maintain the "correct political direction and correct public opinion orientation".

6. Need of the Implementation:

China's cyberspace watchdog said it was concerned that unchecked development and use of deep synthesis could lead to its use in criminal activities like online scams or defamation.

1. Why in Broadcast:

The Animation, Visual Effects, Gaming and Comic (AVGC) Task Force has called for a National AVGC-XR Mission with a budget outlay to be created for integrated promotion & growth of the AVGC sector.



National AVGC-XR Mission

- Leverage Start-Up India to provide technical, financial and market access assistance to AVGC entrepreneurs to promote culture of R&D and local IP Creation.

Raising India's Soft Power Through an Inclusive Growth:

- Establish a dedicated Production Fund for domestic content creation from across India to promote Indian culture & heritage globally.
- Evaluate Reservation for high-quality indigenous content by broadcasters.
- For an Inclusive India, target skilling and industry outreach for youth in Tier 2 & 3 towns and villages in India.
- Establish Special incentives for women entrepreneurs in AVGC sector.
- Promote local Children's channels for raising awareness on rich culture and history of India among children and youth.
- Establish framework to ensure Child Rights Protection in the digital world.

2. Recommendations of the Task Force

Domestic Industry Development for Global Access:

- A National AVGC-XR Mission with a budget outlay to be created for integrated promotion & growth of the AVGC sector.
- Launch of a 'Create in India' campaign with exclusive focus on content creation, In India, For India & For World.
- With a goal to make India the global hub for AVGC, institute an International AVGC Platform, along with a Gaming Expo with focus on FDI, Co-production treaties and Innovation.
- Establish a National Centre of Excellence (COE) for the AVGC sector to become an international reference point across Skilling, Education, Industry Development and Research & Innovation for the AVGC sector.
- Regional COEs will be instituted in collaboration with the State Governments to provide access to local industries and to promote local talent and content.

Developing Talent Ecosystem to Realize Demographic Dividends:

- Leverage NEP to develop creative thinking with dedicated AVGC course content at school levels, to build foundational skills and to create awareness about AVGC as a career choice.
- Launch AVGC focused UG/ PG courses with standard curriculum and globally recognized degrees.
- Standardize admission tests for AVGC related courses.
- Enhance Industry participation to ensure employment opportunities and absorption for students from non-metro cities and NE states.
- Establish AVGC Accelerators and Innovation hubs in academic institutions, on lines of Atal Tinkering Labs.

Enhancing Technology & Financial Viability for Indian AVGC Industry:

- Democratize AVGC technologies by promoting subscription-based pricing models for MSME, Start-Ups and institutions.
- Made in India for AVGC technologies through incentive schemes for R&D and IP creation.
- Evaluate PLI scheme to incentivize AVGC hardware manufacturers.
- Enhanced Ease of Doing Business in AVGC sector i.e tax benefits, import duties, curbing piracy, etc.

Prelims Special 2023:

Important Schemes & Initiatives of Government of India

Agriculture Infrastructure Fund

- The Agriculture Infrastructure Fund (AIF) is a medium-long term debt financing facility through interest subvention and credit guarantee support on loans for investment in viable projects for post-harvest management infrastructure and community farming assets. Under the scheme 1 lakh crore provided will be provided by the bank and financial institution to the eligible beneficiaries for viable project.
- Launched- 8th July 2020 by ministry of agriculture
- Benefit- 3% interest subvention and credit guarantee support.
- Beneficiaries- farmers, FPOs, PACS, Marketing Cooperative Societies, SHGs, Joint Liability Groups (JLG), Multipurpose Cooperative Societies, Agri-entrepreneurs, Start-ups, and Central/State agency etc.

PM KISAN Scheme

- PM KISAN is a Central Sector Scheme to supplement financial needs of land holding farmers. Financial benefit of Rs. 6000 per year is transferred into the bank accounts of farmer families through DBT in three installments.
- Launched - February 24, 2019 by ministry of agriculture, the scheme came into effect from December 1, 2018.

Pradhanmantri Krishi Sinchayee Yojna

- Pradhan Mantri Krishi Sinchayee Yojana was launched in the year 2015. The major objective scheme is expand cultivated area with assured irrigation, reduce wastage of water and improve water use efficiency. The scheme is formulated by amalgamating ongoing 3 schemes:
- Accelerated Irrigation Benefit Programme (AIBP) -Ministry of Water Resources, River Development & Ganga Rejuvenation.
 - Integrated Watershed Management Programme (IWMP) - Department of Land Resources, Ministry of Rural Development.
 - On-Farm Water Management (OFWM) - Department of Agriculture and Cooperation (DAC).

PM Poshan Shakti Nirman Abhiyaan

- The scheme is revamped version of 1995 Mid-Day meal scheme, to provide free lunch to school's children.
- It is grouped under the umbrella scheme-saksham anganwadi and poshan 2.0.
- The major objective of the scheme is to reduce malnutrition from the school children.
- It is central sponsored scheme, launched in 2021 by ministry of women and child development.

Strengthening Teaching-Learning and Results for States (STARS)

- It is central sponsored scheme launched in 2020 by ministry of education.
- To improve school education in six states covering 10 million teachers.
- The scheme is financially support by World Bank.

Swamitva Yojana

- It is central sector scheme, launched in 2020 by ministry of panchayati raj to help in mapping of properties in villages with the help of drones.
- The main aims of the scheme to reduce disputes over property and to provide easier loan from bank to villagers.

Nirvik Scheme

- Announce in 2020- 21 budget
- Nirvik (Niryat Rin Vikas Yojana) scheme to provide enhanced insurance cover and reduce premium for small exporters.
- Scheme is being prepared by the Commerce and Industry Ministry.
- Under the Scheme, also called the Export Credit Insurance Scheme (ECIS), the insurance guarantee could cover up to 90% of the principal and interest.
- Implemented by Export Credit Guarantee Corporation (ECGC)

Project Saksham

- Project Saksham was launched in 2017 by the Ministry of Finance in order to improve information exchange procedures in taxation systems.
- It will boost IT infrastructure to support the new GST network.
- Taxpayers' information will be sent to the Central board of indirect tax and Custom system via a link from the GSTN Portal

Dhruv

- The PM Innovative Learning Program-Dhruv was launched on 10th October 2019 by ministry of human resource and development.
- The objective of the Pradhan Mantri Innovative Learning Programme is to encourage talented students to realize their full potential and henceforth, contribute to society.
- Every student selected under this programme will be called as 'Dhruv Tara'. The students will thus both shine through their achievements and light a path for others to follow.
- Overall 60 students will be selected (30 from each area) from across the country.
- The students will be broadly from classes 9 to 12 from all schools including government and

PM Matsya Sampada Yojana

- Launched in 2020 by ministry of Fisheries, Animal Husbandry and Dairying.
- Nationwide welfare measures for farmers in the fisheries sector.
- scheme to bring about Blue Revolution through sustainable and responsible development of fisheries sector in India.
- Pradhan Mantri Matsya Sampada Yojana (PMMSY) aims to enhance fish production to 220 LMT with an investment of over Rs.20,000 crores in next five years.

National Technical Textiles Mission (NTTM)

- It was approved in 2020 by the Cabinet Committee on Economic Affairs (CCEA) with total outlay of Rs.1480 Crore.
- The implementation period is four years, from FY 2020-21 to FY 2023-24.
- The aim of the mission is to position India as a global leader in Technical Textiles by taking the domestic market size from USD 40 billion to USD 50 billion by 2024.
- It also supports the 'Make in India' Initiative promoting domestic manufacturing of related machinery and equipment.

Atal Bhujal Yojana

- Launched in 2019
- Central sector scheme, implemented by ministry of Jal Shakti
- World Bank funded scheme (50:50) to improve ground water management with focus on Panchayats.
- Implementation in seven states between 2020-2025 with initial funding of ₹6,000 crore

Jal Jeevan Mission

- Launched in 2019, it envisages supply of 55 litres of water per person per day to every rural household through Functional Household Tap Connections (FHTC) by 2024.
- It is implemented by Jal Shakti Ministry.
- The mission ensures functionality of existing water supply systems and water connections, water quality monitoring and testing as well as sustainable agriculture.
- It also ensures conjunctive use of conserved water; drinking water source augmentation, drinking water supply system, grey water treatment and its reuse.
- The fund sharing pattern between the Centre and states is 90:10 for Himalayan and North-Eastern States, 50:50 for other states, and 100% for Union Territories.

PM KUSUM Scheme

- It is central sector scheme, launched in 2019 by Ministry of New and Renewable Energy.
- Decentralised solar power production
- PM-KUSUM consists of three components and aims to add a solar capacity of 30.8 GW by 2022:
 1. 10,000 MW of decentralised ground-mounted grid-connected renewable power plants.
 2. Installation of two million standalone solar-powered agriculture pumps.
 3. Solarisation of 1.5 million grid-connected solar-powered agriculture pumps.

Bhu-Aadhar or ULPIN

- Unique Land Parcel Identification Number (ULPIN) system is a 14-digit Alpha-numeric unique ID for each land parcel based on Geo-coordinates of vertices of the parcel which is of international standard and complies with Electronic Commerce Code Management Association (ECCMA) standard and Open Geospatial Consortium (OGC) standard, is being implemented across the country. ULPIN will have ownership details of the plot besides its size and longitudinal and latitudinal details. This would facilitate real estate transactions, help resolve property taxation issues and improve disaster planning and response efforts, etc.
- ULPIN has, so far, been rolled out in 24 States.

Mission Saksham Anganwadi and Poshan 2.0

- Notified in 2022 by ministry of women and child development
- This mission is for Nutrition Support for Children, Adolescent Girls and Pregnant Women & Lactating Mothers.
- Under Saksham Anganwadi and Poshan 2.0, 2 lakh AWCs 40,000 AWCs per year in aspirational districts would be strengthened, upgraded and rejuvenated for improved nutrition and educational delivery.
- The Integrated Nutrition Support Programme – Saksham Anganwadi and Poshan (2.0), Rules, 2022 also notified.

Mission Shakti

- Mission Shakti comprises of two sub-schemes 'Sambal' and 'Samarthya' for safety and security of women and empowerment of women respectively.
- The existing schemes of One Stop Centres (OSC), Women Helplines (181-WHL) and Beti Bachao Beti Padhao (BBBP) have been made part of Sambal sub- scheme.
- Pradhan Mantri Matru Vandana Yojana (PMMVY), Ujjwala & Swadhar Greh (Shakti Sadan), Working Women Hostel (Sakhi Niwas), Gender Budgeting and National Crèche Scheme along with a new component of Hubs for empowerment of women at National, State, District levels have been subsumed in 'Samarthya'.

GHAR (Go Home and Reunite)

- A web portal to ensures digital tracking and monitoring of Children staying in Child Care Institutions under the Protocols for Restoration and Repatriation of Children
- Launched- November 2022 .
- Implemented by ministry of women and child development.

iDEX Prime

- Innovations for Defence Excellence (iDEX) Prime was launched by ministry of defence in 2022. The iDEX-Prime aims to support projects, requiring support beyond Rs 1.5 crore up to Rs 10 crore to help ever-growing start-ups in the defence sector.

Operation SANKALP

- Launched- in June 2019
- Maritime Security Operation code-named Operation SANKALP in the Gulf Region was pursued to ensure safe passage of Indian Flag Merchant Vessels (IFMV)s transiting through the Strait of Hormuz. Since June, 2019, IN has deployed 36 warships and escorted approximately 361 Lakh Tons of cargo onboard 453 IFMV.s.

Mission SAGAR

- Launched- in May 2020
- To response to requests from Friendly Foreign Countries and maritime neighbours, Indian navy has undertaken transshipment of Humanitarian and Disaster Relief (HADR) material and medical equipment onboard IN Ships to five nations in IOR, under the overall ambit of Mission SAGAR.

Project 75

- Under the project, indigenous construction of six diesel-electric attack submarines of Scorpene design. These submarines are being constructed at Mazagon Dock Shipbuilders Limited (MDL) Mumbai, under collaboration with M/s Naval Group, France.
- These are INS Kalavari, INS Khanderi, INS Kharanj, INS Vela, INS Vagir and INS Vagsheer
- Navy has commissioned four Scorpene, INS Kalvari, INS Khanderi, INS Karanj and INS Vela, and fifth INS Vagir has received by India navy.

Project 15B

- The Project 15B (Visakhapatnam-class destroyers) class of ships are the next-generation stealth guided missile destroyers of the Indian Navy, being built at the MDL, which are follow-on class of the weapon intensive P15A (Kolkata Class) Destroyers.
- The contract for four ships of Project 15B was signed on 28 January 2011.
- Four ships of the Project are- INS Visakhapatnam, INS Mormugao, INS Imphal and INS Surat.
- Till date, Visakhapatnam and Mormugao are commissioned.

Project 17 A

- Launched in 2019
- P17A (Nilgiri class) Frigates are warships that are follow-on class of the P17 (Shivalik Class) Frigates with improved stealth features, advanced weapons & sensors and platform management systems.
- These are Nilgiri, Himgiri, Taragiri, Udaygiri, Dunagiri, and Vindhya giri and Mahendragiri.
- These are constructed by two companies - Mazagon Dock Shipbuilders (MDL) and Garden Reach Shipbuilders & Engineers (GRSE).
- Till date, Three warship namely, Nilgiri, Himgiri, and Taragiri commissioned by Indian navy.

Ethanol Blending Petrol Programme

- The Ethanol Blended Petrol (EBP) programme was launched in January, 2003 by the Ministry of Petroleum & Natural Gas (MoP&NG)
- The Department of Food and Public Distribution (DFPD) is the nodal agency for the promotion of fuel-grade ethanol-producing distilleries in the country.
- Ethanol is an agro-based product which is used for blending with petrol as fuel and many other industrial uses including manufacturing hand sanitizers.
- It is produced from a by-product of the sugar industry, namely molasses as well as starchy food grains. Government has fixed target of 10% blending of fuel grade ethanol with petrol by 2022 & 20% blending by 2025.

Pradhan Mantri Virsat Ka Samvardhan (PM VIKAS) Scheme

- Launched in 2022 by ministry of minority affair
- PM VIKAS aims to adopt a family-centric approach, targeting beneficiaries from all minority communities, with special focus on artisan families, women, youth, and differently abled.
- Converge of five existing schemes- Seekho aur Kamao (SAK), USTTAD, Hamari Dharohar, Nai Roshini, Nai Manzil.
- The scheme has been planned to be implemented across four components namely:
 - » Skilling and Training Component
 - » Leadership and Entrepreneurship Component, with credit support
 - » Education Component for school dropouts; and
 - » Infrastructure Development Component in collaboration with PMJVK scheme of the Ministry.

AMRUT Mission

- It was central sponsored scheme, launched by ministry of urban development in 2015.
- The purpose of Atal Mission for Rejuvenation and Urban Transformation (AMRUT) is to ensure that every household has access to a tap with assured supply of water and a sewerage connection; increase the amenity value of cities by developing greenery and well maintained open spaces (parks) and reduce pollution by switching to public transport or constructing facilities for non-motorized transport (e.g. walking and cycling).
- The components of the AMRUT consist of capacity building, reform implementation, water supply, sewerage and septage management, storm water drainage, urban transport and development of green spaces and parks.
- AMRUT 2.0 aims to provide 100% coverage in terms of water supply to all households in around 4,700 ULBs (Urban Local Bodies).

MyScheme

- MyScheme was launched on July 4, 2022 by ministry of Ministry of Electronics & IT
- It is a schemes eMarketplace, where citizens can discover eligible schemes based on his/her demography.
- More than 180 schemes of the 27 Central and State/UT Governments across 13 diverse categories have been hosted.

eSign

- eSign provides easy, efficient, and secure signing of electronic documents by an Aadhaar holder.
- so far, 34.41 crore eSigns have been issued. Out of these, e-Sign issued by CDAC (i.e. under e-Hastakshar project) is 8.22 crore.
- e-Hastakshar offers on-line platform to citizens for instant signing of their documents securely in a legally acceptable form, under the Indian IT Act 2000

e-Taal 3.0 (Electronic Transaction Aggregation & Analysis Layer)

- Launched by ministry of Ministry of Electronics & IT.
- eTaal provides a real-time aggregated view of volume of eServices being delivered across different agencies of the Central, State and local Governments in India.

ServicePlus

- Launched- march 2022 by ministry of Ministry of Electronics & IT.
- It is a Meta Data Based e-Service Delivery Framework which helps in making all Government services accessible to the common man in his locality through common service delivery outlets.

Global Indices (E-Government Development Index)

- MeitY is the nodal ministry for E-Government Development Index (EGDI) along with two-line Ministries/ Departments.
- The EGDI is a composite measure of three important dimensions of e-government, namely: Online Service Index, Telecommunication Infrastructure Index and the Human Capital Index.

National Supercomputing Mission (NSM)

- Government of India launched National Supercomputing Mission (NSM) in 2015. Under NSM, the plan was to connect R&D institutions and academic institutions in the country using a supercomputing grid with more than 70 high performance computing facilities
- C-DAC has commissioned 11 new supercomputers of various capacities (50TF, 833TF, 1.66PF, 3.33PF) at academic institutes.

Production Linked Incentive (PLI) Scheme

- Keeping in view India's vision of becoming 'Atmanirbhar', Production Linked Incentive (PLI) Schemes for 14 key sectors were announced with an outlay of Rs. 1.97 lakh crore to enhance India's Manufacturing capabilities and Exports.
- The scheme is effective from 1st April, 2021.
- Small Industries Development Bank of India (SIDBI) is Project Management Agency (PMA) for the PLI scheme
- PLI Scheme across these key specific sectors is poised to make Indian manufacturers globally competitive, attract investment in the areas of core competency and cutting-edge technology; ensure efficiencies; create economies of scale; enhance exports and make India an integral part of the global

Start-up India Programme

- Start-up India Programme Launched by the Prime Minister on 16th January 2016 with the goal of creating a robust ecosystem that encourages the emergence of new firms, resulting in long-term economic growth and large-scale job creation.
- From facilitating access to capital, filings for protection of intellectual property rights, tax incentives, easing of public procurement, enabling regulatory reforms to access to international fests, all efforts are being made by the Government under the programme.

Make in India

- Make in India” was launched on September 25, 2014, to facilitate investment, foster innovation, building best in class infrastructure, and making India a hub for manufacturing, design, and innovation.
- It was one of the first ‘Vocal for Local’ initiatives that exposed India’s manufacturing domain

to the world. Since its launch, Make in India has made significant achievements and is now focusing on 27 sectors under Make in India 2.0. DPIIT is coordinating Action Plans for 15 manufacturing sectors, while the Department of Commerce is coordinating for 12 service sectors.

One District One Product (ODOP) scheme

- It was launched in January 2018, by the Uttar Pradesh Government, and due to its success, was later adopted by the Central Government.
- The ODOP Initiative is aimed at fostering balanced regional development across all districts of the country enabling holistic socio-economic growth across all regions.
- The objective is to convert each District of the country into a Manufacturing and Export Hub

by identifying products with export potential in the district.

- Institutional mechanism under Districts as Export Hubs in the form of State Export Promotion Committees (SEPCs) and District Export Promotion Committees (DEPCs) have been constituted in all 36 States/UTs to provide support for export promotion and address the bottlenecks for export growth in the districts.

One Nation One Ration Card plan

- Started by Ministry of Consumer Affairs, Food & Public Distribution
- Starting with inter-State portability in just 4 States in August 2019, so far, the ONORC plan has been enabled in all 36 States/UTs (across the country) covering around 80 Crore NFSA beneficiaries.

- Chhattisgarh State and Assam states had joined ONORC platform in the month of February 2022 and June 2022 respectively.
- ONORC scheme is being implemented under National Food Security Act (NFSA).

Gram Urja Swaraj

- Ministry of Panchayati Raj has started the Gram Urja Swaraj initiative, with an aim to promote adoption of renewable energy at Gram Panchayat level.
- The Ministry of Panchayati Raj has also

launched the Gram Urja Swaraj Portal in May 2022, to capture the inclination of Panchayati Raj Institutions (PRIs) towards adoption of renewable energy.

Rashtriya Gram Swaraj Abhiyan (RGSA)

- Implementing Agency: Ministry of Panchayati Raj
- Components: The main Central Components were Incentivisation of Panchayats and Mission Mode Project on e-Panchayat including other activities at Central level.
- The State component primarily includes Capacity Building & Training (CB&T) activities, institutional mechanisms for CB&T along with other activities at a limited scale.
- Centrally Sponsored Scheme of RGSA implemented from 2018-19 to 2021-22

and an amount of Rs.2149.09 crore was released and more than 1.42 crore Elected Representatives, Functionaries and & other stakeholders of Panchayats were provided various and multiple trainings.

- Revamped Rashtriya Gram Swaraj Abhiyan (2022-23 to 2025-26)- implementation from 01.04.2022 to 31.03.2026 at a total cost of Rs.5911 crore including Central Share of Rs.3700 crore and State share of Rs.2211 crore.

WHO - Global Center for Traditional Medicine (WHO-GCTM)

- Director General-WHO had announced establishment of WHO - GCTM in India with a vision of “Traditional Medicine for improving global health and achieves Universal Health Coverage” on 13th November 2020.
- It was fulfilled with the laying of foundation stone by Prime Minister Narendra Modi in April 2022 and an interim office made functional at ITRA, Jamnagar in Gujarat.
- WHO-GCTM strategic focus will be on evidence and learning, data and analytics, sustainability and equity, and innovation and technology to optimize the contribution of traditional medicine to global health and sustainable development.
- Ayush Visa - for Ayush therapy
- Ayush mark- for Ayush products
- Ayush parks – for research and manufacturing of Ayush products

National Green Hydrogen Mission

- MNRE is accordingly developing the National Green Hydrogen Mission with the objectives of decarbonising major economic sectors, making India energy independent and serving as an inspiration for the global clean energy transition. Ministry of Power notified provisions for facilitative open access and banking of renewable energy for Green Hydrogen production vide the Green Open Access Rules.

PM Annadata Aay Sanrakshan Abhiyan

- This is Farmer Income Protection Scheme.
- Launch in 2018 by ministry of Agriculture as a central sector scheme.
- The three components outlined under the scheme is thus aimed towards enhancing agricultural productivity, reducing cost of cultivation which will enable boosting and securing farmer's income in the long run.
- » IPrice Support Scheme (PSS)
- » Price Deficiency Payment Scheme (PDPS)
- » Pilot of Private Procurement & Stockist Scheme (PPPS)

Ayushman Bharat scheme

Ayushman Bharat, the Government of India's flagship plan, was launched in 2018 as a central sponsored scheme by ministry of health and family welfare. It is in line with the National Health Policy 2017 to fulfil the objective of Universal Health Coverage (UHC). Ayushman Bharat comprises two inter-related components, which are –

- **Health and Wellness Centres (HWCs):** These 1.5 lakh current sub-centres will bring health care closer to people's homes in the form of Health and Wellness centres. These centres will offer comprehensive health care, including treatments for noncommunicable diseases and mother and child health.
- **Pradhan Mantri Jan Arogya Yojana (PM-JAY):** The second component of Ayushman Bharat is PM-JAY, which seeks to provide over 10.74 crore poor and vulnerable families with health insurance coverage of Rs 5 lakhs per family per year for secondary and tertiary care hospitalization (approximately 50 crore beneficiaries).

PM Mudra Yojana

- It is central sector scheme launched by ministry of finance in April 2015.
- Mudra Yojana is a loan related scheme, through which loans ranging from 50000/- to 1000000/- are made available to small businessmen on easy terms.
- Loans under PM mudra loan scheme are available to non-farm micro or small enterprises engaged in income generation through manufacturing, trading and services.
- MUDRA has created three products namely 'Shishu', 'Kishore' and 'Tarun' to signify the stage of growth / development and funding needs of the beneficiary micro unit.

Smart Cities Mission

- It is central sponsored scheme launched by ministry of housing and urban affair in June 2015
- The main objective of the Mission is to promote cities that provide core infrastructure, clean and sustainable environment and give a decent quality of life to their citizens through the application of 'smart solutions'
- Four pillar of smart cities mission
 - » Social Infrastructure
 - » Physical Infrastructure
 - » Institutional Infrastructure
 - » Economic Infrastructure
- Under Smart Cities Mission, Ministry of Housing & Urban Affairs has won the Platinum Icon in the Digital India Awards 2022 for their initiative 'DataSmart Cities: Empowering Cities through Data'.

FAME India scheme

- It is central sponsored scheme launched by ministry of heavy and industry in 2015
- The project is an integral part of the Government's National Electric Mobility Mission Plan (NEMMP)
- Monitoring Authority- Department of Heavy Industry, Ministry of Heavy Industries and Public Enterprises
- Objective of the scheme-
 1. Encourage faster adoption of electric and hybrid vehicles by way of offering upfront Incentive on purchase of Electric vehicles.
 2. Establish a necessary charging Infrastructure for electric vehicles.
 3. To address the issue of environmental pollution and fuel security

HRIDAY Scheme

- The Ministry of Urban Development, Government of India, launched the National Heritage City Development and Augmentation Yojana (HRIDAY) scheme on 21st January, 2015, with a focus on holistic development of heritage cities
- The main objective of HRIDAY is to preserve character of the soul of heritage city and facilitate inclusive heritage linked urban development by exploring various avenues including involving private sector
- The Scheme is being implemented in 12 identified Cities viz. Ajmer, Amaravati, Amritsar, Badami, Dwarka, Gaya, Kancheepuram, Mathura, Patna, Puri, Varanasi and Velankanni.

Pradhan Mantri Bhartiya Janaushadhi Scheme

- It is a campaign launched by the Department of Pharmaceuticals of the Ministry of Chemicals and Fertilizers.
- It seeks to provide quality medicines at affordable prices to the masses through special kendra's known as Pradhan Mantri Bhartiya Jan Aushadhi Kendra.
- Initially launched in 2008, the scheme was rechristened in 2015.
- The Pharmaceuticals & Medical Devices Bureau of India (PMBI) is implementing the scheme.

Deendayal Antyodaya Yojana

- Deendayal Antyodaya Yojana-National Rural Livelihoods Mission (DAY-NRLM) is a central sponsored scheme which was launched by the Ministry of Rural Development (MoRD), Government of India in June 2011.
- It aims to reduce poverty by enabling the poor household to access gainful self-employment and skilled wage employment opportunities resulting in sustainable and diversified livelihood options for the poor.
- This is one of the world's largest initiatives to improve the livelihoods of the poor. The Mission seeks to achieve its objective through investing in four core components viz.
 - » Social mobilization and promotion and strengthening of self-managed and financially sustainable community institutions of the rural poor women
 - » Financial inclusion.
 - » Sustainable livelihoods.
 - » Social inclusion, social development and access to entitlements through convergence.

MCQs based on Preliminary Exam

1. Consider the following statements about India's Constituent Assembly:
 1. The Assembly was formed in accordance with the provisions of the Cabinet Mission Plan.
 2. The Assembly was composed of representatives from current provincial assemblies as well as princely states, who were elected on a proportional basis.
 Which of the statement/s given above is/are correct? Choose the correct option by using the code
 (a) 1 only (b) 2 only
 (c) Both 1 and 2 (d) Neither 1 nor 2
2. Which of the following is/are included in Article 13's definition of "law"?
 1. Legislation passed by Parliament or State Legislatures that are binding.
 2. Temporary rules, such as Presidential or State Governors' ordinances.
 3. Statutory instruments that are delegated laws (executive legislation) in nature, such as an order, bye-law, guideline, regulation, or notification.
 4. Non-legislative sources of law, i.e., tradition or use that has legal force.
 Select the correct answer using the code given below:
 (a) 1 and 2 only (b) 2 and 3 only
 (c) 1, 2 and 3 only (d) 1, 2, 3 and 4
3. Consider the following statements in the context of the World Trade Organization's (WTO) Agreement on Agriculture (AoA) Subsidies:
 1. Farm subsidies listed as Red Box are the most trade-distorting.
 2. Blue Box subsidies enforce production limits in order to restrict production.
 Which of the statement/s given above is/are correct? Choose the correct option by using the code
 (a) 1 only (b) 2 only
 (c) Both 1 and 2 (d) Neither 1 nor 2
4. Indian citizenship shall be acquired by a person of full aged and capacity who has been an overseas citizen of India for five years and has been resident in India for 1 year before applying for Indian Citizenship. What kind of obtaining citizenship is described in the above passage?
 (a) Registration (b) Naturalisation
 (c) Birth (d) None of the above
5. Consider the following statements in relation to the Public Credit Registry (PCR):
 1. It is a data archive that only collects loan information from corporate borrowers.
 2. It can help banks to deal with the issue of bad loans.
 3. It can help small companies with their financial inclusion policies.
 Which of the statement/s given above is/are correct? Choose the correct option by using the code
 (a) 1 and 2 only (b) 2 and 3 only
 (c) 1 and 3 only (d) 1, 2 and 3
6. Consider the following statements about the Gupta king Chandragupta II also known as Chandragupta Vikramaditya:
 1. Spread of his empire is indicated by an Iron Pillar inscription at Mehargarh.
 2. The Greek Buddhist Pilgrim Megasthenes visited India during his reign.
 3. 'Parashara Smriti' is the law book of the Guptas.
 4. He defeated the Shaka kings who were ruling in eastern India.
 Which of the statement(s) given above is / are **incorrect**?
 (a) 1 only (b) 1, 2 and 3 only
 (c) 1 and 2 only (d) 1, 2, 3 and 4
7. What was/were the reason/s of rise and growth of Magadha Empire ?
 1. Earliest rulers started the policy of conquest and aggression.
 2. They made marriage alliances with their rivals for diplomatic relationships.
 3. They made their capital 'Girivraja' which was surrounded by hills and it was impregnable.
 Which of the statement(s) given above is/are correct?
 (a) 1 and 2 only (b) 1 and 3 only
 (c) 1, 2 and 3 (d) 2 only
8. Four Buddhist Councils organised over different periods played a significant role in the propagation of Buddhism. Consider the following statements with reference to the fourth Buddhist Council: -
 1. Buddhism split into two major sects called Hinayana and Mahayana.
 2. It was held during the reign of Kanishka, the Satvahana ruler.
 3. The fourth Buddhist Council was convened at Vaishali.
 Which of the statement(s) given above is / are **incorrect**?
 (a) 1 only (b) 2 and 3 only
 (c) 1 and 2 only (d) None of the above

9. India is said to be the home of puppets, but it is yet to awaken to its unlimited possibilities. With this reference consider the following statements:
1. The earliest reference to the art of puppetry is found in Tamil classic 'Silappathigaram'.
 2. Natyashastra also has reference of the art of puppetry.
 3. The rod puppets of Orissa are known as 'Kundhei'.

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

- (a) 1 only (b) 2 and 3
(c) 1 and 2 (d) All of the above

10. Consider the following pairs of the Block printing and the places:

1. Bagru : Rajasthan
2. Ajrakh Print : Maharashtra
3. Sanganeri : Andhra Pradesh

Which of the pair/s given above is / are **not** correctly matched?

- (a) 1 only (b) 2 and 3 only
(c) 2 only (d) All of the above

11. Which of the following statement/s forms/form part of the criteria to declare a language as a 'Classical Language'?

1. The state government should consider it as a valuable heritage.
2. There should be no discontinuity between the classical language and its later forms.
3. Its literal tradition may be borrowed from another speech community.
4. It should have a recorded history over a period of 1500-2000 years.

Which of the statement(s) given above is / are **not** correct?

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

12. Consider the following statements about Hunter Education Commission -

1. It was appointed to review Wood's Dispatch of 1854.
2. It did not support vocational education.
3. It drew attention towards inadequate facilities for girl's education.

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

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

13. Which of the following statements is **not** correct about 'Indian Association' led by Surendranath Banerjee and Ananda Mohan Bose?

- (a) It was a forerunner of the Indian National Congress as an all-India nationalist

organisation.

- (b) It opposed holding of civil service examination in England.
(c) It protested against the reduction of age limit for candidates of the Indian Civil Service examination.
(d) It opposed the repressive arms act and the vernacular press act.

14. Consider the following statements about Eka Movement:

1. The movement was led by a lower caste leader.
2. The Eka movement was not supported by the Indian National Congress.
3. The reason behind this movement was peasant discontent due to practice of share rents.

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

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

15. Consider the following statements about the 'Wavell Plan':

1. It allowed Indian leaders to form an interim government.
2. It proposed equal representation for caste Hindus and Muslims.
3. It rejected the demand for a full-fledged Pakistan.

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

16. Consider the following:

1. Supremacy of the constitution
2. Powers of a district court
3. Parliamentary system
4. Powers of Comptroller and Auditor General of India
5. Limited power of Parliament to amend the constitution.

Which of the above elements constitute the basic structure of the constitution?

- (a) 1 and 3 only (b) 2, 4 and 5 only
(c) 1, 3 and 5 only (d) All of the above

17. There is some concern regarding the nanoparticles of some chemical elements that are used by the industry in the manufacture of various products. Why?

1. They can accumulate in the environment, and contaminate water and soil.
2. They can enter the food chains.
3. They can trigger the production of free radicals.

4. The effects of inhaled nanoparticles in the body may include lung inflammation and heart problems.
Select the correct answer using the code given below.
(a) 1 and 2 only (b) 3 and 4 only
(c) 1, 2 and 3 only (d) 1, 2, 3 and 4
- 18.** Mycorrhizal biotechnology has been used in rehabilitating degraded sites because mycorrhiza enables the plants to :
1. resist drought
2. tolerate extremes of pH
3. resist disease infestation
4. decrease absorptive area
Select the correct answer using the codes given below.
(a) 1 and 4 only (b) 2 and 3 only
(c) 1, 2 and 3 only (d) 1, 2, 3 and 4
- 19.** In the context of governance, consider the following measures:
1. Encouraging Foreign Direct Investment inflows
2. Down-sizing of bureaucracy
3. Selling/offloading the shares of Public Sector Undertakings
Which of the above can be used as measures to control the *Fiscal Deficit* in India?
(a) 1 and 2 only (b) 2 and 3 only
(c) 1 and 3 only (d) 1, 2 and 3
- 20.** Though coffee and tea both are cultivated on hill slopes, there is some difference between them regarding their cultivation. In this context, consider the following statements:
1. Coffee plant requires a hot and humid climate of tropical areas whereas tea can be cultivated in both tropical and subtropical areas.
2. Coffee is propagated by seeds but tea is propagated by stem cuttings only.
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
- 21.** Between India and East Asia, the navigation-time and distance can be greatly reduced by which of the following?
1. Deepening the Malacca straits between Malaysia and Indonesia.
2. Opening a new canal across the Kra Isthmus between the Gulf of Siam and Andaman Sea.
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
- 22.** Consider the following statements:
1. Salt-water crocodile is found in the Andaman and Nicobar Islands.
2. White crocodile is found in the Bhitarkanika.
3. Shrew and tapir are found in the Western Ghats of the Malabar region.
Which of the statement/s given above is/are correct?
(a) 1 only (b) 1 and 2 only
(c) 1 and 3 only (d) 1, 2 and 3
- 23.** With reference to the International Union for Conservation of Nature and Natural Resources (IUCN) and the Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES), which of the following statement/s is/are correct?
1. IUCN is an organ of the United Nations and CITES is an international agreement between governments.
2. IUCN runs thousands of field projects around the world to better manage natural environments.
3. CITES is legally binding on the States that have joined it, but this Convention does not take the place of national laws.
4. CITES was drafted as a result of a resolution adopted in IUCN.
Select the correct answer using the code given below.
(a) 1 and 2 only (b) 1, 2 and 3 only
(c) 2, 3 and 4 only (d) 1, 2, 3 and 4
- 24.** Consider the following actions which the government can take:
1. Devaluing the domestic currency.
2. Reduction in the export subsidy.
3. Adopting suitable policies which attract greater FDI and more funds from FIIs.
Which of the above action/actions can help in reducing the current account deficit?
(a) 1 and 2 only (b) 2 and 3 only
(c) 3 only (d) 1 and 3 only
- 25.** Which of the following can aid in furthering the Government's objective of inclusive growth ?
1. Promoting Self-Help Groups.
2. Promoting Micro Small and Medium Enterprises.
3. Implementing the Right to Education Act.
Select the correct answer using the codes given below:
(a) 1 only (b) 1 and 2 only
(c) 2 and 3 only (d) 1, 2 and 3
- 26.** Why is the Government of India disinvesting its equity in the Central Public Sector Enterprises (CPSEs)?

1. The Government intends to use the revenue earned from the disinvestment mainly to pay back the external debt.
2. The Government intends to promote fair competition in most of the sectors of 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.** The 'Multi-dimensional Poverty Index' developed by 'Oxford Poverty and Human Development Initiative' with UNDP support, covers which of the following?

1. Deprivation of education, health, assets and services at household level
2. Purchasing power parity at national level
3. Extent of budget deficit and GDP growth rate at national level

Select the correct answer using the codes given below:

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

- 28.** Consider the following statements about Radhakanta Deb :

1. He was the president of British India Association .
2. His Dharma Sabha organisation opposed anti - sati legislation of 1829.
3. He published *Shabdakalpadruma-* a dictionary of Sanskrit .

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

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

- 29.** Consider the following statements about *Mount Trishul*:

1. It is part of Garhwal Himalaya.
2. It's three peaks resemble a trident of Lord Shiva.
3. The main peak, Trishul I, was the first peak over 7,000 m to have ever been climbed, in 1907.

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

- (a) 1 and 2 only (b) 2 and 3 only
(c) 1 and 3 only (d) All of the above

- 30.** Consider the following statements regarding *Dragon fruit*:

1. Dragon fruit is the fruit of a species of wild cactus indigenous to North America.
2. The world's largest producer and exporter of dragon fruit is Vietnam.

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

- 31.** Consider the following statements regarding Indo-Pacific Ocean Initiative:

1. It was first suggested by Prime Minister Narendra Modi during the 13th East Asian Summit.
2. It is part of the SAGAR mission to expand and facilitate regional cooperation of India's maritime neighbours.

Which of the statement/s given above is/are **incorrect**?

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

- 32.** Consider the following statements regarding fiscal deficit:

1. It is defined as excess of total budget expenditure over total budget receipts including borrowings during a fiscal year.
2. A large deficit means a large amount of borrowing.
3. One of the implication of a large deficit is deflationary pressure on Economy.

Which of the above statement/s is/are **incorrect**?

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

- 33.** Consider the following statements about *Aquifer Mapping Programme*:

1. Aquifer Mapping in India was taken up by Central Ground Water Board.
2. The pilot project on aquifer mapping was taken up in the states of Kerala, Uttar Pradesh and Telangana.
3. Area identified for aquifer mapping is the highest in the state of Rajasthan.

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

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

- 34.** With reference to agriculture in India, consider the following statements:

1. Around 2/3rd of the total cultivated area is under food grains production.
2. Crop diversification can help to replenish the fertility of land.
3. Monoculture cropping practices can increase vulnerability to pest and disease attacks.

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

- (a) 1 and 2 only (b) 2 and 3 only
(c) 1 and 3 only (d) All of the above

35. Which of the following works are undertaken by the Quality Council of India?

1. Swachh Sarvekshan.
2. Approval of Hygiene Rating Audit Agencies.
3. WASH scheme

Select the correct answer using the codes given below:

- (a) 1 and 3 only (b) 2 only
(c) 1 and 2 only (d) All of the above

36. Consider the following statements regarding The National Hydrology Project of India.

1. It is a flagship Central Sector Scheme of Ministry of New and Renewable Energy.
2. It is being funded by Asian Development Bank.
3. Its main aim is to improve the extent, reliability and accessibility of water resources information and strengthen the capacity of targeted water resource management institutions in India.

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

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

37. With reference to *Kashmir Saffron*, consider the following statements:

1. In India most of the saffron demand is met by imports.
2. It rejuvenates health and is used in cosmetics and also for medicinal purposes.
3. It is one of the Globally Important Agricultural Heritage systems (GIAHS) recognised sites in India.

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

- (a) 1 and 2 only (b) 2 and 3 only
(c) 1 and 3 only (d) All of the above

38. Consider the following statements :

1. Racism is a systemic ideology, in which, on the basis of beliefs and practices, from a racial perspective, humans are divided into higher and lower.
2. Racism is inspired by fascism; fascism is not inspired by racism.

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

39. Find the correct statement from the following statements with reference to "Rights Issue" :

1. It is in the form of shares issued by a company only to their holders.
2. In this, there is no limit in the purchase of company shares by the holders.

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

40. Find the correct statement from the following statements with reference to "Operation Desert Chase" :

1. This operation aims to stop illegal infiltration of the India-Pakistan border into the Rajasthan region.
2. The culprits found under this operation are prosecuted under relevant sections of the 'Official Secrets Act 1923'.

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

41. With reference to the 'Border adjustment tax', consider the following statements :

1. It is a fiscal measure, which is imposed on goods or services according to the 'Destination Principle of Taxation'.
2. It encourages the status quo of competition for foreign and domestic companies supplying products or services within its jurisdiction.

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

42. Which of the following statement/s is/are **incorrect** ?

1. Tala-Maddale is a traditional art form, which is derived from Yakshgana art.
2. Unlike the Yakshagana performance, artists do not wear any special costume.

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

43. Consider the following statements :

1. Not being given the benefit of reservation cannot be considered a violation of any constitutional right.
2. According to the Indian Constitution, reservation is provided on the basis of social, economic and educational backwardness.

Which of the statement/s given above is/are **incorrect**?

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

44. Consider the following statements:

1. The Governor's ordinance-making power is

co-extensive with the legislative power of the State Legislature.

2. An ordinance by the Governor is subjected to the instruction of President in every matter.

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

- (a) 1 only (b) 2 only
(c) Both 1 and 2 (d) None of the above

45. Consider the following statements regarding *Immunoglobins*-

1. Immunoglobulin-A is found in the linings of the respiratory tract and digestive system, as well as in saliva, tears and breast milk.
2. Immunoglobulin-G is the most common antibody, which is found in blood and other body fluids.
3. Immunoglobulin-M is mainly in blood and lymph fluids.
4. Immunoglobulin-D is the least understood antibody, with only small amounts in the blood.

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

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

46. In India, the standard of vehicles pollution are BS4 and BS6. What is/are the correct differences between them?

1. The amount of sulfur is higher in the fuel of BS6 as compared to BS4, which reduces the amount of pollution in the smoke emitted from the fuel.
2. The price of vehicles with standard BS6 is more than the value of vehicles with standard BS4.
3. BS6 have a high technological engine to control nitrogen oxide.

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

47. Consider the following statements regarding algae based biofuels-

1. Algae-based bio fuels can be produced both in the ocean and continents.
2. Algae fuels are also known as alternative biofuel sources.

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

48. Consider the following statements regarding Bureau of Energy Efficiency (BEE)-

1. It is a statutory body under the Ministry of

New and Renewable Energy.

2. It develops such policies, strategies, which can reduce the energy intensity in the Indian 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

49. Which one of the following statements about *Amir Khusrau* is **not** correct?

- (a) Most of his poetical works were in Persian but he wrote in Hindi too and was regarded as the father of the Khadi boli as well as Hindustani music.
- (b) In his poetry he followed Persian model, but in sentiment it was Indian.
- (c) He enjoyed the patronage of the successive Sultans from Balban to Ghiyasuddin Tughlaq.
- (d) His use of Indian imagery and Hindi words was not appreciated in Persia literary circles.

50. The main difficulties of Iltutmish when he ascended the throne were-

1. The revolt of Aram Shah
2. Ali Mardan of Lakhnauti set himself up as independent ruler
3. The Punjab was hostile to him
4. Bengal and Bihar severed their connections.

Select the correct answer from the code given below:

- (a) 1 and 2 (b) 2, 3 and 4
(c) 3 and 4 (d) All of the above

ANSWER

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

MCQs Based on Current Affairs

1. Which of the following is not an advantage of signing an FTA?

- A. Facilitates employment generation
- B. To promote the country's gross domestic product
- C. Opportunities to open new markets
- D. Closed economy

Answer – D

2. Dispute Settlement undertaking (DSU) is related to which of the following institutions?

- A. World Trade Organization
- B. World Bank
- C. IMF
- D. New Development Bank

Answer- A

3. Recently in the news, the word 'Mezotropis Pellita' is related to-

- A. A bird species
- B. Himalayan plant species
- C. Volcano
- D. Asteroid

Answer – B

4. Which of the following ports was known as the 'Queen of the Arabian Sea'?

- A. Muziris
- B. Kochi
- C. Colchi
- D. Berygazza

Answer – B

5. In which year ILO was established?

- A. 1945
- B. 1995
- C. 2011
- D. 1919

Answer – D

6. Which of the following goals of the United Nations calls for 'Zero Hunger'?

- A. SDG-1
- B. SGD-2
- C. SDG-3
- D. SDG-5

Answer – B

7. Which of the following statement(s) is/are correct regarding mRNA?

- 1. mRNA is a double-stranded RNA molecule that is complementary to the DNA strand of a gene.
- 2. During protein synthesis, an organelle called the ribosome moves along with the mRNA.

Choose the correct option-

- A. 1 only
- B. 2 only

C. Both 1 and 2

D. none

Answer – B

8. Consider the following statements

- 1. Under Project 75, six diesel-electric attack submarines of Scorpene class are to be indigenously built.
- 2. These submarines are being built at Mazagon Dock Shipbuilders Limited (MDL) Mumbai in collaboration with M/s Naval Group, France.
- 3. Submarines built are INS Kalavari, INS Khanderi, INS Kharanj, INS Vela, INS Vagir and INS Vagshir.

Which of the above statements is/are correct?

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

Answer – D

9. The disputed area of Doklam is the tri-junction of which of the following countries?

- A. India-Bhutan-Nepal
- B. India-Bhutan-China
- C. India-Nepal-Bangladesh
- D. India-China-Myanmar

Answer-B

10. Which of the following has recently developed a germicidal air filter?

- A. IIT Madras
- B. IIT Kanpur
- C. ISRO
- D. IISc, Bangalore

Answer-(D)

11. In which year was the Great Barrier Reef declared a World Heritage Site?

- A. 1971
- B. 1978
- C. 1980
- D. 1981

Answer – D

12. Financial Stability Report is published by which of the following?

- A. Reserve Bank of India
- B. Ministry of Finance
- C. World Bank
- D. IMF

Answer- A

13. The term 'Blue Helmet' is related to-
- UN Peacekeepers
 - WWF
 - NGO worker
 - construction

Answer- A

14. Maldharis, a pastoral community, are residents of which of the following national parks?
- Jim Corbett National Park
 - Gir National Park
 - Dudhwa National Park
 - Marine National Park

Answer – B

15. In which state is the Tal Chhapar Wildlife Sanctuary located?
- Rajasthan
 - Gujarat
 - Himachal Pradesh
 - Uttarakhand

Answer – A

16. Consider the following statements regarding Delimitation Commission
- The Delimitation Commission is appointed by the President of India and works in coordination with the Election Commission of India.
 - The orders of the Delimitation Commission can be challenged in the court.
 - When the orders of the Delimitation Commission are laid before the Lok Sabha or the State Legislative Assembly, they cannot make any amendments to the orders.
- Which of the above statements is/are correct?

- 1, 2
- 1, 3
- 2, 3
- 1, 2, 3

Answer – B

17. Consider the following statements regarding Bureau of Energy Efficiency.
- The Bureau of Energy Efficiency (BEE) is a statutory body established under the provisions of the Energy Conservation Act, 2001 under the Ministry of Power.
 - It establishes and prescribes energy consumption norms and standards for designated consumers.
- Which of the above statements is/are correct?
- 1 only
 - 2 only

- 1, 2
- none of these

Answer – C

18. Consider the following statements
- Centrally protected monuments or sites in India are under the protection of the Archaeological Survey of India (ASI) and are regularly inspected by ASI officials to assess their current condition.
 - Uttar Pradesh has the largest number of centrally protected monuments in India.
 - The Ancient Monuments and Archaeological Sites and Remains (Amendment) Act, 2010 prohibits construction within 500 meters of a protected monument.

Which of the above statements is/are correct?

- 1, 2
- 1 only
- 1, 3
- 1, 2, 3

Answer- A

19. With respect to Rule 267, consider the following statements.
- Any member of Rajya Sabha can give notice to the Chairman under Rule 267 for discussion on any subject.
 - Rajya Sabha has not allowed discussion under rule 267 for almost last five years.
- Which of the above statements is/are correct?
- 1 only
 - 2 only
 - 1, 2
 - none of these

Answer – C

20. Consider the following statements regarding PNGRB.
- The Petroleum and Natural Gas Regulatory Board (PNGRB) was constituted under the Petroleum and Natural Gas Regulatory Board Act, 2006.
 - PNGRB protects the interests of consumers and entities engaged in specific activities relating to petroleum, petroleum products and natural gas.
- Which of the above statements is/are correct?
- 1 only
 - 2 only
 - 1, 2
 - none of these

Answer – C

6 Personality



Swami Vivekanand

In 1893 AD, in the World Parliament of Religions, Chicago (USA), a person wearing saffron clothes was the centre of attraction in the gathering. When he began the speech with 'my American brothers and sisters', the whole auditorium echoed with the sound of applause for several minutes. He asserted that I am proud to belong to a country which has given refuge to the persecuted people of all religions and all countries. It was Swami Vivekanand who gave Indian philosophy and Hinduism a global platform and fame.

Vivekananda's childhood name was Narendra Nath. Swami Vivekananda was born on 12 January 1863 in Calcutta in an elite Kayastha family. His childhood name was Narendranath Dutt. His father Vishwanath Dutt was a famous lawyer of Calcutta High Court. His mother Bhuvaneshwari Devi was a woman of religious thoughts. The religious, progressive and rational temperament of Narendra's father and mother helped shape his thinking and personality. Due to the sacraments and religious environment, the curiosity to know and attain God was visible in the mind of child Narendra from childhood. He was born with extraordinary talent.

At the age of 8, Narendra Nath joined Ishwar Chandra Vidyasagar's Metropolitan Institute in 1871 for his elementary education. During his studies, he acquired knowledge of subjects including philosophy, religion, history, social science, art and literature. He studied Western logic and philosophy as well as the Vedas, the Upanishads, the Bhagavad Gita, the Ramayana, the Mahabharata and the Puranas, as well as many other Hindu scriptures. In his student life, he also read the works of David Hume, Immanuel Kant, Gottlieb Fichte, John Stuart Mill and Charles Darwin etc. He was greatly influenced by the evolutionism of Herbert Spencer.

Narendra's mind always had curiosity about the existence of God and he believed that if there is a God then there should be proof of it. He joined the Brahmo Samaj. After becoming a member of the Brahmo Samaj, Narendra was introduced to the synthesis of Western and Indian spirituality. His thoughts were influenced by the early beliefs of the Brahmo Samaj and encouraged the study of Dharmashastras, Vedanta, Upanishads and monistic concepts in a selective, rational and modern way.

He was not satisfied with the answers he received from the Brahmo Samaj regarding the existence of God and continued to search for it. In connection with the existence of God, he met Swami Ramakrishna Paramhansa. This time also he asked him the same question and Swami Ramakrishna Paramhansa said yes I can prove the existence of God. As I see you here, I can see God as well. After this he started coming to Paramhansa continuously and Swami Paramhansa started calming his curiosity. This process continued for about 5 years and he became Sanyasi Vivekananda in the company of Guru. Ramakrishna Paramhansa declared him his successor in his last days.

After the Guru's death, Vivekananda founded the Ramakrishna Mission and went on a journey as a monk. He travelled the country and interacted with many religious people. He closely observed the life of the common people. The thought related to nation building was initiated in his mind during this period. He gained international fame because of his speeches and sermons.

Swami Vivekananda propagated Hinduism and philosophy in Europe and America as a global religion. He gave a vision to see questions like social reform and religious reform linked to social justice. He never talked about the superiority of any religion over other religions, but insisted on the merging of all religions into one element. Gurudev Rabindranath Thakur had said about him, "If you want to know India, read Vivekananda." In them you will find everything positive, nothing negative.

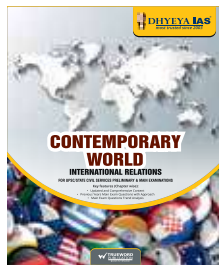
He was not only a saint, but also a great patriot, orator, thinker, writer and human lover. He believed that India is a holy land of religion and philosophy. It was here that great Mahatma's and sages were born, it is the land of renunciation and it is here only that from the beginning till today the supreme ideal of life and the door of salvation has been opened for the human being.

He gave the message that 'get up, wake up, wake up yourself and wake up others. Make your birth successful and do not stop until the goal is achieved'.

Swami Vivekananda died on 4 July 1902. He was cremated at Belur on the banks of the river Ganges. The work done by Swami Vivekananda in his short life span of 39 years will continue to guide generations for many centuries to come.



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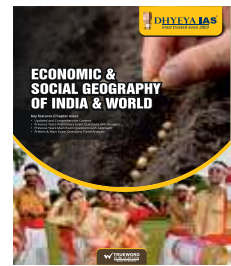
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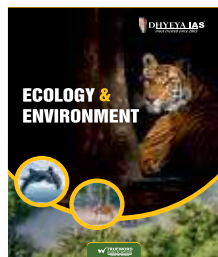
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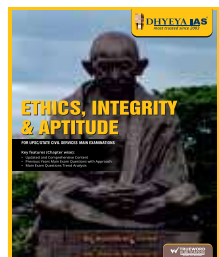
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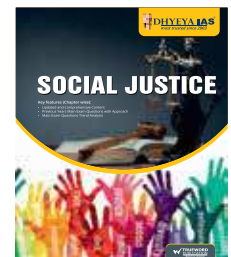
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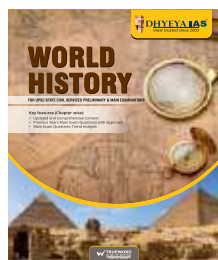
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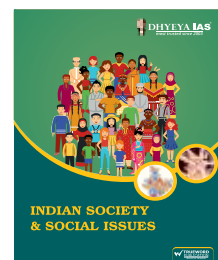
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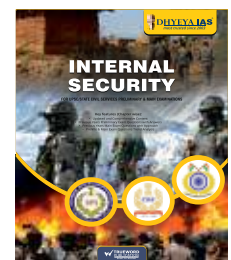
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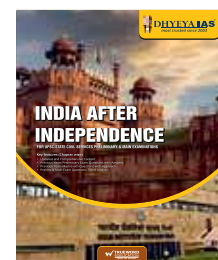
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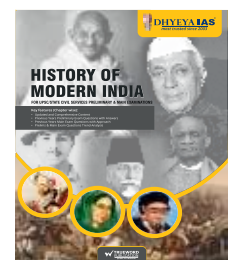
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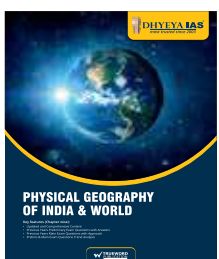
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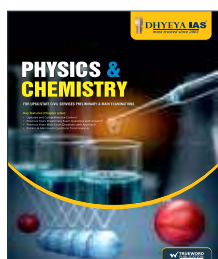
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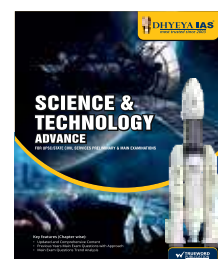
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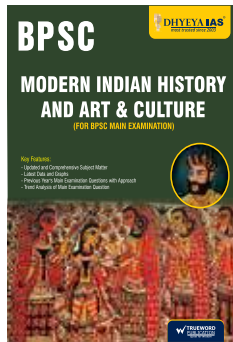
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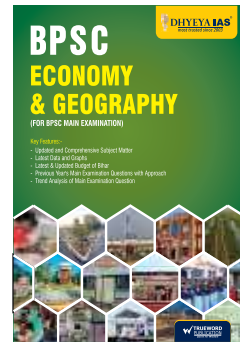
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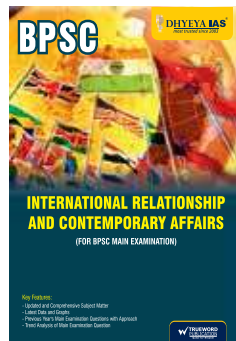
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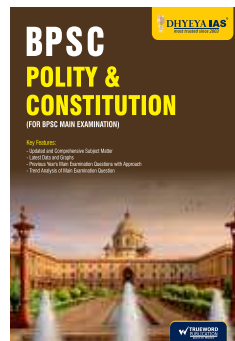
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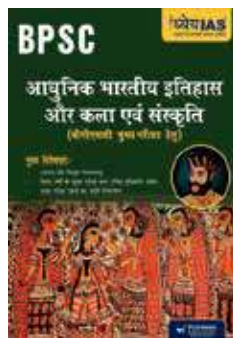
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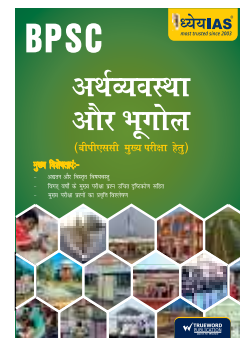
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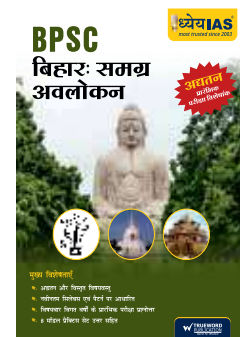
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