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1. INDIAN SOCIETY & POLITY

1. Purana Quila

Why in News?

- The Government/Archaeological Survey of India (ASI) will set up a museum at Purana Quila to house objects excavated from across India which have been lying in the Central Antiquities Collection (CAC).

Highlights:

- The proposed museum will open in April 2020.
- The museum will be housed in the arched cells of Purana Quila.
- The objective to open a new museum is to display antiquities such as tools, potteries, terracotta, beads of semi-precious stones, sculptures, architectural fragments, etc. for the general public, students and research scholars.
- The objects to be displayed date from the pre-historic period to the medieval era such as Harappan seals, pre-historic animal and human figurines, coins and pottery from the Mughal period among several others.
- This is the third such museum at the Purana Qila.

Central Antiquities Collection (CAC):

- The Central Antiquity Collection Section is a centre for housing the collection of antiquities explored and excavated by the Archaeological Survey of India.
- The CAC is under the ASI and the artefacts stored here are accessible only to researchers.
- The Collection includes samples of pottery and artefacts of different periods from all major sites from across the country.
- Over 2 lakh excavated antiquities are stored in the CAC. Out of this, about 1000 artefacts will be displayed in the New Museum.

Purana Qila:

- Purana Qila is one of the oldest forts belonging to the Mughal era.
- The massive gateway and walls of the Qila were built by Mughal ruler Humayun and the foundation was laid for the new capital, Dinpanah.
- The construction was taken forward by Sher Shah Suri, who displaced Humayun.
- The walls of the Purana Quila are made of enormous red stones having minimal ornamentation and decoration.
- The major attractions inside the fort are the Qila-i-Kuhna mosque (an example of Indo-Islamic architecture) of Sher Shah Suri, Sher Mandal (a tower, which is traditionally

associated with the death of Humayun), a stepwell and the remains of the extensive rampart, which has three gates.

- The unique features of Indo-Islamic architecture like horseshoe-shaped arches, bracketed openings, marble inlay, carving, etc. are very prominent in the structure.
- Excavations have revealed that the Purana Quila stands at the site of Indraprastha, the capital of the Pandavas. Excavations near one of the walls of the fort show that the site had been occupied since 1000 B.C.
- The PGW (Painted Gray Ware Pottery) recovered from the site date back to around 1000 B.C.

2. Zonal Cultural Centres

Why in News?

- The Government of India has set up seven Zonal Cultural Centers to promote inter-state cultural development programmes.

Highlights:

- The mandate of the Ministry of Culture is to protect, preserve and promote various forms of folk art and culture throughout the country.
- To meet this objective, the Government of India has set up seven Zonal Cultural Centres (ZCCs) with headquarters at Patiala, Nagpur, Udaipur, Prayagraj, Kolkata, Dimapur and Thanjavur.
- These ZCCs engage cultural troupes from different States to participate in the major festivals under the National Cultural Exchange Programme (NCEP).
- They also organize various cultural festivals and programmes on a regular basis in all the States/UTs of India.
- All the ZCCs along with other organizations under the Ministry of Culture have participated in the Kumbh Mela, 2019 at Prayagraj, Uttar Pradesh.
- The 7 Zonal Cultural Centres with their HQs are given below:
 - ✓ Eastern Zonal Cultural Centre - Kolkata
 - ✓ North Central Zone Cultural Centre - Prayagraj
 - ✓ North East Zone Cultural Centre - Dimapur
 - ✓ North Zone Cultural Centre - Patiala
 - ✓ South Central Zone Cultural Centre - Nagpur
 - ✓ South Zone Cultural Centre - Thanjavur
 - ✓ West Zone Cultural Centre – Udaipur

3. NITI Aayog to draft roadmap for Achieving Population Stabilization

Why in News?

- NITI Aayog is organising a National Consultation titled “Realizing the vision of population stabilization: leaving no one behind”.

Highlights:

- The working paper is expected to address key gaps in India’s family planning programmes.
- It will offer constructive recommendations to address regional disparities in outcomes by focusing on adolescents and youths, inter-departmental convergence, demand generation, access to contraceptive services and quality of care.
- The recommendations from the consultation will contribute to a NITI Aayog working paper to help achieve India’s vision of attaining population stabilization.

Key Recommendations:

- Increasing the basket of contraceptive choices, with greater focus on spacing methods and helping women make informed choices about delaying pregnancy and spacing between children.
- Addressing social determinants of health such as age at marriage and sex-selective practices.
- Strengthening quality of care, including counseling services, managing side effects and family planning support.
- Increasing budgetary allocations for family planning, to align with the unmet needs of India’s young people who constitute nearly 30 per cent of our population.
- Addressing existing socio-cultural barriers towards contraception by investing extensively in innovative behaviour-change communication strategies.
- Treating population stabilization and family planning as a national priority, fostering inter-departmental convergence and ensuring multisectoral participation and integration.

Why such move?

- India, with a current population size of 1.37 billion, has the second largest population in the world.
- Family planning is considered universally as the smartest development investment.
- For India to realize its sustainable development goals and economic aspirations, it is important to ensure that people have informed access to contraception and quality family planning services.

-
- India is also at a stage where birth rates are falling but the population continues to grow due to the fact that more than 30 % of the population is young and in the reproductive age group.
 - Nearly 30 million currently married women in the age group of 15-49 years within this critical cohort have unmet needs in family planning.
 - This limits their ability to delay or avoid pregnancy by not having access or the agency to use contraception.



2. GOVERNANCE

1. Pedestrian Deaths in Road Accidents

Why in News?

- The Ministry of Road Transport & Highways has formulated a multi-pronged strategy to address the issue of road safety based on Education, Engineering (both of roads and vehicles), Enforcement and Emergency Care.

Highlights:

- The Ministry of Road Transport & Highways has constituted a Parliamentary Constituency Committee on Road Safety in each district of the country to promote awareness amongst road users under the chairmanship of the MPs.
- The National Road Safety Policy outlines various policy measures such as promoting awareness, establishing road safety information database, encouraging safer road infrastructure including the application of intelligent transport, enforcement of safety laws with regard to road safety.
- The Motor Vehicles (Amendment) Act, 2019 focuses on road safety and includes, among other things, stiff hike in penalties for traffic violations and electronic monitoring of the same, enhanced penalties for juvenile driving, computerization/automation of vehicle fitness and driving, tests, recall of defective vehicles, extending the scope of third party liability and payment of increased compensation for hit and run cases, etc.

Some of the other initiatives of the Government:

- Advocacy/Publicity campaign on road safety through the electronic media and print media to create awareness.
- Issue of Guidelines for the protection of Good Samaritans. Read more about the Good Samaritan Law. Setting up of model driving training Institutes in States.
- Launch of mobile app for highway users i.e. “Sukhad Yatra 1033” which enables highway users to report potholes and other safety hazards on National Highways including accidents.
- Observance of Road Safety Week every calendar year for spreading awareness and strengthening road safety.
- Safety standards for automobiles have been improved.
- High priority has been accorded to identification and rectification of black spots (accident-prone spots) on National Highways.

2. Sexual Cases under POCSO

Why in News?

- The Protection of Children from Sexual Offences (POCSO) Act, 2012 has adequate provisions ensuring speedy trial under the Act.

POCSO Act, 2012:

- Section 28 of the POCSO Act 2012 provides for establishment of Special Courts for the purpose of providing speedy trial.
- Further, Section 35 of the POCSO Act provides that the evidence of the child shall be recorded within a period of thirty days of the Special Court taking cognizance of the offence and reasons for delay, if any, shall be recorded by the Special Court.
- Further, Section 35 also lays down that the Special Court shall complete the trial, as far as possible, within a period of one year from the date of taking cognizance of the offence.
- However, Police and Public Order are State subjects under the Seventh Schedule to the Constitution of India.
- The responsibilities to maintain law and order, protection of life and property of the citizens including children, rest primarily with the respective State Governments and UT Administration.

Steps taken to ensure speedy dispensation of justice:

- In furtherance to The Criminal Law (Amendment) Act, 2018, the Government has finalized a scheme in for setting up of total of 1023 Fast Track Special Courts (FTSCs) across the country for expeditious trial and disposal of pending cases pertaining to rape and POCSO Act, 2012, in a time-bound manner under Centrally Sponsored Scheme.
- The Criminal Law (Amendment) Act, 2013 was enacted for effective deterrence against sexual offences.
- Further, the Criminal Law (Amendment) Act, 2018 was enacted to prescribe even more stringent penal provisions including death penalty for rape of a girl below age of 12 years. The Act also inter-alia mandates completion of investigation and trials within 2 months each.
- A “National Database on Sexual Offenders” has been launched to facilitate investigation and tracking of sexual offenders across the country by law enforcement agencies.
- An online analytic tool for police called “Investigation Tracking System for Sexual Offences” has been launched to monitor and track time-bound investigation on sexual assault cases in accordance with the Criminal Law (Amendment) Act, 2018.

- In order to improve investigation, steps have been taken to strengthen DNA analysis units in Central and State Forensic Science Laboratories. This includes setting up of a State-of-the-Art DNA Analysis Unit in Central Forensic Science Laboratory, Chandigarh.
- Guidelines have been notified for collection of forensic evidence in sexual assault cases and the standard composition in a Sexual Assault Evidence Collection Kit.
- A scheme namely Cyber Crime Prevention against Women and Children (CCPWC) has been approved under which an online cybercrime reporting portal to enable public to report complaints pertaining to child pornography/ child sexual abuse material, rape/gang rape imageries or sexually explicit content.

3. Virtual Autopsy

Why in News?

- India will be the first country in South and Southeast Asia to carry out these “virtual autopsies

Virtual Autopsy:

- An autopsy (postmortem examination, autopsia cadaverum, or obduction) is a highly specialized surgical procedure that consists of a thorough examination of a corpse to determine the cause and manner of death and to evaluate any disease or injury that may be present. Virtopsy is a word combining ‘virtual’ and ‘autopsy’ ... for the purpose of autopsy and to find the cause of the death. Virtopsy can be employed as an alternative to standard autopsies for broad and systemic examination of the whole body as it is less time consuming, aids better diagnosis, and renders respect to religious sentiments.”
- In a virtual autopsy, doctors use radiation to examine the innards to reach a conclusion about the cause of death. A CT or an MRI machine could be used, in the same way that they are used to scan a living human’s body.

Need:

- According to a paper in The Lancet, the advent of virtual autopsy owes to the “Longstanding public objection to dissection of cadavers (that) re-emerged in the UK as a major issue after organ retention scandals in the late 1990s.
- Some groups —notably Jewish and Muslim communities — have religious objections to autopsy, and demand for a minimally-invasive alternative has increased.” (“Post-mortem imaging as an alternative to autopsy in the diagnosis of adult deaths: a validation study’: 2012, Ian S D Roberts et. al)

- A virtual autopsy is also faster than a traditional one — 30 minutes against 2½ hours, and more cost-effective.

International Examples:

- Virtual autopsy began in Sweden, but is now a “standard technique” in major centres in Japan, the US, Australia, and many European countries.

Accuracy of Virtual Autopsy:

- In 2018, in an article in the Journal of Pathology Informatics, Russian and Italian scientists compared the results of virtual autopsy and traditional postmortem.
- “Out of 23 cases for which the traditional post mortem examination found a cause of death, 15 (65%) were diagnosed correctly using virtual autopsy, these cases were considered as true positives. For one case for which the cause of death was unascertained, the same result was also obtained during the virtual autopsy.
- This case was considered as true negative. Overall, in 16/25 (64%) cases, virtual autopsy results matched that of the traditional autopsy,” they concluded.

4. Bharatiya POSHAN Krishi Kosh

Why in News?

- Ministry of Women and Child Development along with Bill & Melinda Gates Foundation (BMGF) has announced the Bharatiya Poshan Krishi Kosh (BPKK).

Bhartiya Poshan Krishi Kosh:

- Bhartiya Poshan Krishi Kosh” project has two components – Development of a Food Atlas and Documentation of promising practices for Jan-Andolan for POSHAN Abhiyaan.
- The Agro-Food Atlas is to act as a repository of diverse crops across 127 agro-climatic zones of the country having three parts- crops currently being grown, agro-ecological conditions (soil, organic carbon content, ground water availability etc) and guidance on how a greater diversity of crops could be encouraged in a particular district or block to promote dietary diversity and nutrition. The project includes diverse data sources like National Sample Survey, Agri-Census, Soil Health Cards, ISRO’s Advanced Wide Field Sensor (AWiFS) and National Aeronautics and Space Administration’s (NASA’s) Moderate Resolution Imaging Spectro-Radio meter. The project also documents social, behavioural and cultural practices that promote and reinforce healthy dietary behaviours.
- A Technical Support Unit has been set-up under NITI Aayog which undertakes/conducts/facilitates regular monitoring and evaluation of the National Nutrition Mission to assess the impact of the programme.

- A National Council on India's Nutritional Challenges under the Chairmanship of Vice-Chairman NITI Aayog has been constituted to provide policy direction, review and effective coordination and convergence between Ministries which have a sectoral responsibility for the challenge of nutrition.
- Ministry of WCD is addressing the issue of malnutrition through various schemes including POSHAN Abhiyaan. Under POSHAN Abhiyaan, Community Mobilization and Awareness Advocacy leading to Jan Andolan, to educate the people on nutritional aspects, are among various components to generate awareness and public participation.

5. Arms (Amendment) Bill, 2019

Why in News?

- Lok Sabha passed the Arms (Amendment) Bill, 2019.

Highlights:

- The Bill seeks to enhance the punishment for existing offences like illegal manufacture, sale, transfer, etc.; illegal acquiring, possessing or carrying prohibited arms or prohibited ammunition; and illegal manufacture, sale, transfer, conversion, import, export, etc., of firearms.
- It also proposes to define new offences and prescribes punishment for them, such as taking away firearms from police or armed forces, involvement in organized crime syndicate, illicit trafficking including smuggled firearms of foreign make or prohibited arms and prohibited ammunition, use of firearms in rash and negligent manner in celebratory gunfire endangering human life, etc.
- Further, the Bill seeks to enhance the period of arms license from three years to five years and also to issue arms license in its electronic form to prevent forgery.
- The Amendment assumes significance in recent times as law enforcement agencies have indicated a growing nexus between possession of illegal firearms and commission of criminal offences.
- The trans-border dimensions of illegal arms trafficking are causing threat to internal security and to prevent the usage of illicit firearms so trafficked has also become a prime concern.
- To effectively curb crimes related to or committed by using illegal firearms and to provide effective deterrence against violation of law, there is an urgent need to strengthen the existing legislative framework by making appropriate amendments in the Arms Act, 1959.

- The licenses and arms ownership of sportspersons would not be adversely affected because of the Bill.
- The provisions related to ownership of arms by retired and serving personnel of armed forces also remain unaffected by the Amendment.

History of the Act:

- The original law was brought by the British after the Revolution of 1857, in order to prevent such a rebellion in the future.
- Mahatma Gandhi also connected the issue of arms ownership with the basic rights of Indians and demanded a repeal of the Indian Arms Act, 1878.
- This demand was also included in the eight-point agenda that Mahatma Gandhi presented to Lord Irwin.

6. Antibiotics in crops

Why in News?

- The Union Minister for Agriculture gave information about certain antibiotics in crops in the Lok Sabha.

Antibiotics in crops:

- Aureofungin, Kasugamycin, Validamycin and Streptomycin+ Tetracycline combination are antibiotics that are registered under the Insecticide Act 1968 for use as pesticides to combat certain fungal and bacterial diseases in plants.
- Pesticides are toxic substances but they do not pose any adverse effect on human beings, animals and the environment if they are used as per the label and leaflet approved by the Central Insecticide Board and Registration Committee.
- Pesticides are registered for use in the country by the Registration Committee only after being satisfied about their efficacy and safety to human health, animals and environment.
- However, the indiscriminate use of antibiotics is worrying as the practice may lead to the development and spread of antimicrobial resistance (AMR), already a pressing concern worldwide; at least 10 million people are likely to die of AMR every year by 2050.
- When used in crops, unspent antibiotics find their way into the surrounding environment.
- Microorganisms exposed to this increasing load of antibiotics in soil and water can develop resistance to it.
- The resistance can spread to other bacteria through transfer of genetic material. When humans or animals get infected by such resistant microorganisms, their treatment becomes difficult as well as expensive.

- There is a possibility that traces of antibiotics remain in the edible parts of the plant.

Central Insecticide Board and Registration Committee (CIBRC):

- The CIBRC is the country's apex body that approves the use of pesticides.
- The use of pesticides and insecticides in India are regulated by the Following Two:
 - ✓ Insecticides Act, 1968
 - ✓ Insecticides Rules, 1971
- In the Act and the Rules framed thereunder, there is compulsory registration of the pesticides at the Central level and licence for their manufacture, formulation and sale are dealt with at the State level.
- With the enforcement of the Insecticides Act in the country, pesticides of very high quality are made available to the farmers and the general public for household use, for protecting the agricultural crops from the ravages of their pests, humans from diseases and nuisance caused by public health pests and the health hazards involved in their use have been minimised to a great extent.
- The CIBRC functions under the Department of Agriculture, Ministry of Agriculture and Farmers' Welfare.

7. Mission for Integrated Development of Horticulture (MIDH)

Why in News?

- Information about the MIDH was provided by the Union Minister of Agriculture and Farmers' Welfare in the Lok Sabha.

MIDH:

- The MIDH is a centrally sponsored scheme for the holistic growth of the horticulture sector covering fruits, vegetables, root & tuber crops, mushrooms, spices, flowers, aromatic plants, coconut, cashew, cocoa and bamboo.
- Under MIDH, the Government of India contributes 60% of the total outlay for developmental programmes in all the states except states in the North East and the Himalayas. 40% share is contributed by State Governments. In the case of North Eastern and Himalayan States, GOI contributes 90%.
- MIDH also provides technical advice and administrative support to State Governments/State Horticulture Missions (SHMs) for the Saffron Mission and other horticulture-related activities like the Rashtriya Krishi Vikas Yojana (RKVY).

- The Mission was started in 2014.

Objectives of the MIDH:

- To promote the holistic growth of horticulture sector, including coconut through area-based regionally differentiated strategies which include research, technology promotion, extension, post-harvest management, processing and marketing in consonance with comparative advantage of each State/region and its diverse agri-climatic features.
- To encourage aggregation of farmers into farmer groups like FIGs/FPOs and FPCs to bring economy of scale and scope.
- To enhance horticulture production.
- To augment farmers' income.
- To strengthen nutritional security.
- To improve productivity by way of quality germ-plasm, planting material and water use efficiency through micro-irrigation.
- To support skill development and create employment generation opportunities for the rural youth in horticulture and post-harvest management, especially in the cold chain sector.

MIDH Sub-Schemes:

- ✓ National Horticulture Mission (NHM)
- ✓ Horticulture Mission for North East & Himalayan States (HMNEH)
- ✓ National Horticulture Board (NHB)
- ✓ Coconut Development Board (CDB)
- ✓ Central Institute for Horticulture (CIH), Nagaland

Major interventions of MIDH:

- Setting up of nurseries, tissue culture units for production of quality seed and planting material. Area expansion i.e., the establishment of new orchards and gardens for fruits, vegetables, and flowers. Rejuvenation of unproductive, old, and senile orchards.
- Protected cultivation, i.e. poly-house, green-house, etc., to improve productivity & grow off-season high value vegetables and flowers.
- Organic farming and certification.
- Creation of water resources structures and watershed management.
- Bee-keeping for pollination.
- Horticulture mechanization.
- Creation of post-harvest management and Marketing Infrastructure.

8. Drug Abuse among Youth

Why in News?

- A National Survey to collect State wise Data on Extent and Pattern of Substance Use was conducted in the country during the year 2018.
- The report presents major findings of the survey in terms of proportion of the Indian population in the group of 10-75 years using various substances and those affected by substance use disorders.

Highlights:

- The National Crime Record Bureau under the Ministry of Home Affairs has informed that a total number of 874, 750 and 778 people have died during 2014, 2015 and 2016 respectively due to drug overdose in the country.
- The national survey was conducted to generate estimates for eight categories of psychoactive substances: Alcohol, Cannabis, Opioids, Cocaine, Amphetamine Type Stimulants (ATS), Sedatives, Inhalants and Hallucinogens.
- As per the report, alcohol is the most common psychoactive substance used by Indians.
- After alcohol, cannabis and opioids are the next commonly used substances in India.
- The Ministry of Social Justice and Empowerment has formulated and is implementing a National Action Plan for Drug Demand Reduction (NAPDDR) for 2018-2025.

National Action Plan for Drug Demand Reduction (NAPDDR):

- The Plan aims at the reduction of adverse consequences of drug abuse through a multi-pronged strategy.
- The activities under the NAPDDR include, among others, awareness generation programmes in schools/colleges/Universities, workshops/seminars/ with parents, community-based peer led interactions intervention programmes for vulnerable adolescent and youth in the community, provisioning of treatment facilities and capacity building of service providers.
- The Ministry also implements a “Central Sector Scheme of Assistance for Prevention of Alcoholism and Substance (Drug) Abuse” under which financial assistance is provided to eligible Non-Governmental Organizations based on the recommendations of State Governments/UT Administrations for running Integrated Rehabilitation Centres for Addicts to provide composite/integrated services for the rehabilitation of addicts including adolescents.

9. India up one rank in UN Development Index

Why in News?

- India has been ranked 129 out of 189 countries on the 2019 Human Development Index (HDI) — up one slot from the 130th position in 2018 — according to the Human Development Report (HDR) released by the United Nations Development Programme (UNDP).

Human Development Index:

- The Human Development Index (HDI) is a statistical tool used to measure a country's overall achievement in its social and economic dimensions.
- The social and economic dimensions of a country are based on the health of people, their level of educational attainment and their standard of living.
- The HDI measures average achievement in three basic dimensions of human development — life expectancy, education and per capita Income.

India's Performance:

- India has been ranked 129 out of 189 countries on the 2019 Human Development Index (HDI) — up one slot from the 130th position in 2018.
- However, for inequality-adjusted HDI (IHDI), India's position drops by one position to 130, losing nearly half the progress (.647 to .477) made in the past 30 years. The IHDI indicates percentage loss in HDI due to inequalities.
- The report notes that group-based inequalities persist, especially affecting women and girls, and no place in the world has gender equality. In the Gender Inequality Index (GII), India is at 122 out of 162 countries.

Highlights:

- Norway, Switzerland and Ireland occupied the top three positions in that order. Germany is placed fourth along with Hong Kong, and Australia secured the fifth rank on the global ranking.
- Among India's neighbours, Sri Lanka (71) and China (85) are higher up the rank scale while Bhutan (134), Bangladesh (135), Myanmar (145), Nepal (147), Pakistan (152) and Afghanistan (170) were ranked lower on the list.
- As per the report, South Asia was the fastest-growing region in human development progress witnessing a 46% growth over 1990-2018, followed by East Asia and the Pacific at 43%. India's HDI value increased by 50% (from 0.431 to 0.647), which places it above the average for other South Asian countries (0.642).

- In the Gender Inequality Index (GII), neighbours China (39), Sri Lanka (86), Bhutan (99) and Myanmar (106) were placed above India.
- The report notes that the world is not on track to achieve gender equality by 2030 as per the UN's Sustainable Development Goals. It forecasts that it may take 202 years to close the gender gap in economic opportunity – one of the three indicators of the GII.
- The report presents a new index indicating how prejudices and social beliefs obstruct gender equality, which shows that only 14% of women and 10% of men worldwide have no gender bias. The report notes that this indicates a backlash to women's empowerment as these biases have shown a growth especially in areas where more power is involved, including in India. The report also highlights that new forms of inequalities will manifest in the future through climate change and technological transformation which have the potential to deepen existing social and economic fault lines.

10. Hill Area Development Programme (HADP)

Why in News?

- The HADP was launched for a period of two years (2018-19 and 2019-20).

HADP:

- Hill Area Development Programme (HADP) is a pilot project launched for the hill district of Tamenglong (later on divided into two districts of Tamenglong and Noney) in Manipur with an outlay of Rs.90 crore for a period of two years (2018-19 and 2019-20).
- As per NER District Infrastructure Index, prepared by the Ministry of Development of North-Eastern Region (DoNER) in 2009, districts of Tamenglong, Chandel & Churachandpur in Manipur are ranked among the lowest in NER (North-Eastern Region).
- The pilot programme is aimed at bringing them on par with the rest of the districts in the region.

District Infrastructure Index (DII):

- The Ministry of DoNER has prepared the DII in order to reduce intra-regional disparity and have better targeting of schemes and projects in the North Eastern States.
- The DII is based on seven broad indicators – transport facilities in terms of road density and road quality, energy, water supply, education, health facilities, communication infrastructure and banking facilities.
- The Ministry has used the composite NER DII to give ranking from 1 to 80 to all the 80 districts. (In all there are 86 districts in eight NE States. However, six new districts, four in

Assam and two in Arunachal Pradesh have been clubbed with the old districts from which those were carved out, for the purpose of DII).

- It has also prepared a State-wise composite infrastructure index and district ranking on 14 indicators covering the seven broad indicators.
- Imphal West district in Manipur ranks first while Kiphire in Nagaland ranks the lowest rank 80.

11. Initiatives to develop World Class Research Facilities

Why in News?

- The Government has taken many initiatives to promote research in the field of science & engineering and to develop world-class research facilities in India.

Highlights:

- The following are some of the schemes in this regard:

Prime Minister's Research Fellowship:

- The Prime Minister's Research Fellowship (PMRF) scheme is aimed at attracting the talent pool of the country to doctoral (Ph.D.) programmes of Indian Institute of Science (IISc), Indian Institutes of Science Education & Research (IISERs), Indian Institutes of Technology (IITs) and Central Universities (which are among the top 100 National Institutional Ranking Framework, NIRF ranked universities) for carrying out research in cutting edge science and technology domains, with focus on national priorities.
- Under this scheme, meritorious students of IITs, IIITs, NITs and IISERs, after completing their B.Tech programme can straightaway get admission in PhD programme at IITs and IISc.

Junior Research Fellow (JRF)/Senior Research Fellow (SRF):

- Under the scheme of Junior Research Fellow, for research personnel engaged in Research and Development programmes are given emoluments of Rs.31,000/- per month. For Senior Research Fellow (SRF) these emoluments are Rs. 35,000/- per month.

Research Associate:

- Depending upon their experience and qualifications, the research associates are given emoluments in three pay levels ranging from Rs. 47000 to Rs. 54000.

National Initiative for Technology Transfer (Establishment of Research Parks):

- The government has accorded approval for the establishment of research parks in the various IITs.

Institutions of Eminence (IoE):

- In order to empower the Higher Educational Institutions and to help them in becoming world-class teaching and research institutions, the government has recently declared 20 institutions (10 public and 10 Private institutions) as Institutions of Eminence.
- These institutes will emphasise on multi-disciplinary initiatives, high quality research, global best practices and international collaboration. Financial assistance up to an amount of Rs 1000 crore is to be provided to government institutions in the next 5 years.

Impacting Research, Innovation and Technology (IMPRINT):

- IMPRINT is a flagship national initiative of the Government, which aims at providing solutions to the most relevant engineering challenges and translating knowledge into viable technology in 10 selected technology domains, viz. health care, energy, sustainable habitat, nanotechnology hardware, water resources and river systems, advanced materials, information and communication technology, manufacturing, security and defence, and environmental science and climate change.
- It is a pan IITs and IISc Joint Initiative seeking to develop a roadmap for research.
- However, IMPRINT is not meant only for IITs and IISc; it is a national movement providing an opportunity for the higher echelon institutes in India to integrate with all grass-root level institutes, industry and organizations, mutually complement and deliver what the country demands and aspires.

12. India Design Council (IDC)

Why in News?

- The India Design Council launches two initiatives to promote Design Education and Standards.

Highlights:

- The IDC launched the Chartered Designs of India (CDI) and the Design Education Quality Mark (DEQM).
- These two initiatives of the IDC and the National Institute of design, Ahmedabad will help to address the 5 challenges of scale, quality of design, quality of education for design, raising the priority for design in industry and design for public purpose.
- As Design Education gains momentum in India, it is necessary that commissioners of design projects and designers are able to distinguish qualified professional designers as against hobbyists and non-professionals.

- India has a growing design ecosystem that has resulted in growth – both in the employment of creative skills and impact in the service sector.
- Creative manufacturing and design innovation will be the key drivers in the Make in India initiative of 2020 and beyond and further strengthening the brand “designed in India”.
- In 2007, India became one of the few countries to adopt a National Design Policy (NDP).

Design Education Quality Mark (DEQM):

- The DEQM will benchmark design education programmes on predetermined standards and will accord Design Education Quality Mark to institutions that meet the provisions of the published standard. The DEQ Mark will be granted to institutions that undergo the review process and meet or exceed the expectations for quality and standards as prescribed in the Quality Code. The Quality Mark will communicate to everyone that an institution has a guaranteed minimum level of quality and standards and has undergone a third party, neutral review process.
- The Quality Mark includes a trademark-protected logo, which could be used by the recipient institutions in all forms of internal and external communication.

Chartered Designs of India (CDI):

- The CDI is envisaged as an institution that will establish and uphold the professional standards of design practice in India.
- The focus of CDI is the “Professional Designer” identified by a design qualification and or experience. CDI is a cohesive platform that adheres to the design practice to standards in professional design competence, ethics and service.

India Design Council (IDC):

- The IDC’s establishment was announced by the government in 2009 in order to enable the policy implementation of the National Design Policy.
- IDC is mandated to implement the NDP and is committed to work towards raising the standards of design education in India and ensure that it meets global benchmarks.
- IDC is working with other government agencies, the design community, industry and educational institutions to promote design in business, society and public service.
- The IDC is an autonomous body of the Government of India established under the Department for Promotion of Industry and Internal Trade, Ministry of Commerce and Industry.
- It is a national strategic body for multi-disciplinary design and is involved in the promotion of design to make India a design-enabled country.

13. Programmes to Control Anaemia among Women

Why in News?

- The anaemia control programme review indicated challenges in IFA supply chain management, demand generation and monitoring. Considering, the slow progress i.e. less than 1% per annum in reduction of anaemia from 2005 to 2015, the Government of India has launched the Anaemia Mukta Bharat (AMB) strategy under the Prime Minister's Overarching Scheme for Holistic Nourishment (POSHAN) Abhiyaan and the targets has been set to reduce anaemia by 3% per year.

Highlights:

- The 6x6x6 strategy under AMB implies six age groups, six interventions and six institutional mechanisms.
- The strategy focuses on ensuring supply chain, demand generation and strong monitoring using the dashboard for addressing anaemia, both due to nutritional and non-nutritional causes.

The Six Population Groups under AMB strategy are:

- ✓ Children (6-59 months)
- ✓ Children (5-9 years)
- ✓ Adolescents girls and boys (10-19 years)
- ✓ Pregnant women
- ✓ Lactating women
- ✓ Women of Reproductive Age (WRA) group (15-49 years)

The Six Interventions are:

- Prophylactic Iron and Folic Acid Supplementation
- Deworming
- Intensified year-round Behaviour Change Communication (BCC) Campaign and delayed cord clamping
- Testing of anaemia using digital methods and point of care treatment,
- Mandatory provision of Iron and Folic Acid fortified foods in Government funded health programmes
- Addressing non-nutritional causes of anaemia in endemic pockets with special focus on malaria, hemoglobinopathies and fluorosis and the six institutional mechanisms.

The Six Institutional Mechanisms are:

- ✓ Inter-ministerial coordination
- ✓ National Anaemia Mukh Bharat Unit
- ✓ National Centre of Excellence and Advanced research on Anemia Control
- ✓ Convergence with other ministries
- ✓ Strengthening supply chain and logistics
- ✓ Anaemia Mukh Bharat Dashboard and Digital Portal- one-stop shop for Anemia.

14. Ministry of Skill Development Skills Build platform in Collaboration with IBM

Why in News?




- India is the 4th country where Skills Build platform was launched in November 2019, in alliance with the Directorate General of Training (DGT), after being launched in UK, Germany and France.

SkillsBuild-Platform-2019:

- Skills Build offers digital learning content from IBM and other online coding teaching companies.
- A two-year advanced diploma in IT, networking and cloud computing will be offered at the Industrial Training Institutes (ITIs) & National Skill Training Institutes (NSTIs).
- The platform will be extended to train ITI & NSTI faculty on building skills in Artificial Intelligence (AI).

Features:/ New-collar-jobs-2019:

- Provide a personal assessment of the cognitive capabilities and personality via My Inner Genius to the students.
- Teach digital technologies and professional skills such as resume-writing, problem solving and communication.
- Students will receive recommendations on role-based education for specific jobs.
- Will help develop the skills required to join the workforce in these “New Collar” roles, from the first-of-its kind ‘New Collar Curriculum’ for ITI launched in 2018 by IBM.

	WHITE-COLLAR JOBS	Typically involve performing job duties in an office setting Generally require formal education, most often a bachelor's degree Have a starting wage that is considered generally high, often paid on a salary basis
	BLUE-COLLAR JOBS	Typically perform labor jobs and/or work with their hands Formal education not typically required, although vocational/certification courses may be required for some higher-skilled blue-collar jobs Starting wage is considered generally low, particularly in low- or no-skill jobs, often paid on an hourly basis
	NEW-COLLAR JOBS	Typically involve more technical or hands-on work, but are not limited to a particular setting May not require a traditional college degree, but do require considerable skills/talent, either learned or self-taught Starting wage is often much higher than many jobs available to workers with only a high school diploma

- New collar jobs are occupations which focus more on a candidate's skills during the hiring process, rather than his or her level of education.
- Although new collar jobs do not require a four-year degree, they often do require other types of vocational training and certifications. These are mostly found in the information technology (IT), manufacturing and healthcare industries.

15. Trakea software for Criminal Investigation

Why in News?

- Haryana Police has adopted unique bar-coding software Trakea to ensure tamper-free criminal investigation.

Highlights:

- As per the conventional practice all over the country, the crime exhibits are labeled with complete details, including the case FIR number; the police station; and the names and addresses of the victim, accused, medical officers, etc.
- With these details available, the crime exhibits can be easily traced and tracked by virtually anyone.
- The crime exhibits could include DNA samples, documents, and reports of ballistics examinations, serology, biology, toxicology, lie-detection, etc.
- From the time the sample is collected to the time when forensic experts draw their final conclusion, there are multiple stages where the accused can use their influence to tamper with the sample in order to get a Favourable Forensic Report.

Trakea Software:

- Essentially, it is a forensic evidence management system that helps in automation of the entire procedure, right from the stage when forensic experts collect vital samples from the scene of crime.
- Trakea is aimed at ensuring security and a tamperproof tracking system for forensic reports. It streamlines the functioning of Forensic Science Laboratories.
- Even the selection of forensic teams is done randomly through this software.
- Trakea ensures foolproof security of the samples collected from the scene of crime, and the forensic analysis reports, and is different from traditional methods that the state police force has been following for decades.
- Haryana Police claims it is the country's first police force to have introduced this unique bar-coding for forensic reports.

Development & Functionality:

- The software was originally designed by a prisoner who was lodged in Bhondsi jail for 13 months.
- A software engineer by profession, the man was facing charges of having murdered his wife, but was ultimately acquitted by the trial court.
- The same software engineer had earlier designed a software digitizing data pertaining to prison inmates and prison operations across all 19 jails of Haryana.
- Using this software, the judiciary too will be able to track the forensic examination report during the trial, significantly cutting down on delays.
- The system includes features of two-stage bar-coding to maintain the secrecy of the samples, sent along with a strong, unbroken biometrically authenticated chain of custody trial.
- It is coupled with features to eliminate chances of pick-and-choose by automated case allocation to the scientists, followed by report-generation and real-time tracking of the status of cases through automated e-mail and SMS notifications.
- Also, there will be no case details mentioned on the crime exhibits/samples/parcels except the unique bar code that can only be read through the Biometric System.

16. Comprehensive Lactation Management Centres

Why in News?

- Breast Milk Banks in India are known as Comprehensive Lactation Management Centres (CLMC) and Lactation Management Unit (LMU) depending on the level of health facilities where these units are established.

Comprehensive Lactation Management Centres (CLMC):

- CLMC works as per the National Guidelines on Establishment of Lactation Management Centres in Public Health Facilities.
- The foremost endeavour of the health care providers in a health centre is to conserve the natural act of breastfeeding.
- Lactation Management Centres are in no way intended to lessen the importance of mother's own milk or the practice of breastfeeding.
- If mother's own milk is insufficient or not available for any unavoidable reason, Donor Human Milk (DHM) is the next best alternative to bridge the gap.

- The Government has set a target of ensuring 70 per cent infants to have access to breast milk by the year 2025. Target will subsequently be increased to 100 per cent.

Significance:

- It is universally accepted that breast milk is the optimum exclusive source of nutrition for the first six months of life, and may remain part of the healthy infant diet for the first two years of life and beyond.
- Despite advances in infant formulas, human breast milk provides a bioactive matrix of benefits that cannot be replicated by any other source of nutrition.
- When the mother's own milk is unavailable for the sick, hospitalized newborn, pasteurized human donor breast milk should be made available as an alternative feeding choice followed by commercial formula.
- There is a limited supply of donor breast milk in India and it should be prioritized to sick, hospitalized neonates who are the most vulnerable and most likely to benefit from exclusive human Milk Feeding.

Milk Banks in India:

- Asia's first milk bank was established in 1989 at Sion Hospital, Mumbai.
- In 2017, the first public milk bank, called the Vatsalya — Maatri Amrit Kosh, was established at Lady Hardinge Medical College.
- It was established in collaboration with the Norwegian government and the Oslo University as part of the Norway–India Partnership Initiative (NIPI).

17. Government Instant Messaging System (GIMS)

Why in News?

- The government is testing a prototype of an Indian equivalent of popular messaging platforms, such as WhatsApp and Telegram, for secure internal use.

Government Instant Messaging System:

- Codenamed GIMS the platform is in the pilot testing stage across some states, including Odisha — and is learnt to have been released to the Indian Navy to be tried out on trial basis.
- It is designed and developed by the Kerala unit of National Informatics Centre (NIC).
- It is being packaged for employees of Central and state government departments and organisations for intra and inter-organisation communications.

- Besides one-to-one messaging and group messaging, there are specific provisions in GIMS for documents and media sharing in keeping with the hierarchies in the government system.

Significance of GIMS:

- It is being developed as a secure Indian alternative without the security concerns attached with apps hosted abroad or those owned by foreign entities.
- Like WhatsApp, GIMS employs end-to-end encryption for one-to-one messaging.
- The launch of the new app comes amid the recent controversy over the WhatsApp breach through a spyware called Pegasus.

18. GeM Samvaad

Why in News?

- Government e-Marketplace (GEM/GeM) launches National Outreach Programme – GEM Samvaad.

GeM Samvaad:

- A national outreach programme was launched by the Department of Commerce, Ministry of Commerce and Industry called the ‘GeM Samvaad’.
- The outreach programme will take place with stakeholders across the country and with local sellers in order to facilitate on-boarding of local sellers on the marketplace while catering to specific requirements and procurement needs of buyers.
- GeM Samvaad is essentially a dialogue between buyers and sellers. Sellers and buyers can look for new opportunities also in this outreach programme.
- The outreach programme will take place from December 2019 to February 2020 and will cover all the States and UTs of the country.

GeM:

- It is the national public procurement portal offering end to end solutions for all procurement needs of Central and State Government Departments, PSUs, autonomous institutions and local bodies.
- Since its launch in 2016, it has transformed public procurement in the country by leveraging technology and making procurement contactless, paperless, and cashless.
- GeM has more than 15 lakh products and around 20,000 services, more than 3 lakh registered sellers and service providers and more than 40,000 government buyer organizations.

- State Departments and organisations, and public sector enterprises (PSEs) have been using GeM for their buying needs. Sellers from the States are also benefiting through access to the national public procurement market using the portal.
- GeM's vision is "to affect an evolution in public procurement promoting a transparent, efficient and inclusive marketplace."

19. Jalasathi' programme

Why in News?

- Odisha Chief Minister Naveen Patnaik launched the 'Jalasathi' programme with the aim to ensure supply of safe drinking water to all households in the state.

Highlights:

- The JalSathi initiative aims to ensure the supply of clean drinking water to consumers through piped water connections.
- The Odisha government has roped in women volunteers to serve the people as 'Jalasathis'. This is a significant step, as it will help boost the economic empowerment of the women in the state.
- Under the 'Jalasathi' programme, over 5,000 women will be engaged in Odisha to supply safe drinking water.
- The programme will be initially implemented in eight wards of Bhubaneswar Municipal Corporation under the 5T initiative of the Housing and Urban Development.
- It will be implemented in the remaining wards of the city as well as other urban areas of the state in the next phases. The initiative is expected to benefit around 70 lakh people in urban areas.
- The Jalasathis will serve as the links between consumers and the Public Health Engineering Organisation (PHEO) or WATCO.
- The Jalasathis will be responsible for testing of water quality, facilitating new water connections and regularising connections, reassessing of demands, reading of meter, bill generation and delivery, collection of water charges and facilitating complaints redressal.

20. PM Kisan Maan Dhan Yojana

Why in News?

- The Minister of Agriculture & Farmers Welfare stated that over 18 lakh farmers registered under the PM Kisan Maan Dhan Yojana.

PM Kisan Maan Dhan Yojana (PM-KMY):

- Under this Scheme, a minimum fixed pension of Rs.3,000/- is provided to the eligible small and marginal farmers, subject to certain exclusion clauses, on attaining the age of 60 years. It is a voluntary and contributory pension scheme, with entry age of 18 to 40 years.
- The beneficiary can opt to become a member of the scheme by subscribing to a Pension Fund managed by the Life Insurance Corporation of India (LIC).
- The beneficiary is required to make a monthly contribution of between Rs.55/- to Rs.200/- to the Pension Fund, depending on the age of entry into the scheme, with the provision of equal contribution by the Central Government.
- Exit from the scheme may be voluntarily or on the failure of contribution or on demise. On exit from the scheme, the beneficiary will receive his/her accumulated share and the Government's contribution will be deposited in the LIC Fund.
- After the subscriber's death, the spouse or heir shall be entitled to receive 50% of the pension as family pension, provided he/she is not already an SMF beneficiary of the scheme. On the death of the subscriber during the period of contribution, the spouse shall have the option of continuing the scheme by paying a regular contribution.
- All small and marginal farmers in the country, who are of the age of 18 years and above and up to the age of 40 years, and who do not fall within the purview of the exclusion criteria, are eligible to avail the benefits of this scheme.
- LIC is the pension fund manager for the scheme.

21. National Programme for Health Care of the Elderly (NPHCE)

Why in News?

- The Vice President of India releases a book on Health and Wellbeing of the elderly and addressed the gathering. He stated that strengthening the family system is the need of the hour.
- The Vice President appreciated the government of India for implementing the National Programme for Health Care of the Elderly (NPHCE).

Highlights:

- The National Programme for the Health Care for the Elderly (NPHCE) is an articulation of the International and national commitments of the Government as envisaged under the UN Convention on the Rights of Persons with Disabilities (UNCRPD).

- **Objectives:**

- ✓ To provide easy access to promotional, preventive, curative and rehabilitative services to the elderly through community based primary health care approach
- ✓ To identify health problems in the elderly and provide appropriate health interventions in the community with strong referral backup support.
- ✓ To build the capacity of the medical and paramedical professionals as well as the care-takers within the family for providing health care to the elderly.
- ✓ To provide referral services to elderly patients through district hospitals, regional medical institutions
- ✓ Convergence with National Rural Health Mission, AYUSH and other line departments like Ministry of Social Justice and Empowerment.

22. Indian Pharmacopoeia (IP)

Why in News?

- The Indian Pharmacopoeia (IP) has been recognised officially by the National Department of Regulation of Medicines and Health Products of the Ministry of Public Health of Republic of Afghanistan.

Indian Pharmacopoeia (IP):

- The quality, efficacy and safety of the medicines are important from healthcare perspective.
- In order to ensure the quality of medicinal products, the legal and scientific standards are provided by Indian Pharmacopoeia Commission (IPC) in the form of Indian Pharmacopoeia (IP).
- IP is an officially recognized book of standards as per the Drugs and Cosmetics Act, 1940 and Rules 1945 thereunder.
- As per, the Second Schedule of the Drugs and Cosmetics Act, IP is designated as the official book of standards for drugs imported and/or manufactured for sale, stock or exhibition for sale or distribution in India.
- Standards prescribed in the IP are authoritative in nature and are enforced by the regulatory authorities for quality control of medicines in India.

Significance:

- With this, a new beginning has been made and Afghanistan has become the first country to recognize IP pursuant to the efforts of Department of Commerce and Ministry of Health and Family Welfare.

IP Commission:

- The IP Commission's mission is to promote public and animal health in India by bringing out authoritative and officially accepted standards for quality of drugs.
- It includes active pharmaceutical ingredients, excipients and dosage forms, used by health professionals, patients and consumers. This is achieved by developing the standards for medicines and supporting their implementation. In addition, IPC also develops IP Reference Substances (IPRS) that act as fingerprint for identification of an article under test and its purity as prescribed in the IP monographs.

23. 'Nagpur Resolution: A Holistic Approach for Empowering Citizens

Why in News?

- The 'Nagpur Resolution – A holistic approach for empowering citizens' was adopted during the valedictory session of the two-day Regional Conference on 'Improving Public Service Delivery – Role of Governments', in Nagpur, Maharashtra.

Highlights:

- The conference was organised by the Department of Administrative Reforms and Public Grievances (DARPG), Government of India, in collaboration with the Government of Maharashtra and the Maharashtra State Commission for Right to Public Services.
- On earlier occasions, the Shillong Declaration and the Jammu Resolution have been adopted for good governance.
- The Resolution adopted states that the GOI, the Government of Maharashtra and other participating States shall collaborate to:
- To empower the citizens by policy interventions for better service delivery through timely updation of citizens charters, implementation of enactments and benchmarking standards for continuous improvement;
- To empower citizens by adopting a bottom-up approach to bring massive improvements in quality of grievance redressal and reduction in timelines of grievance redressal;
- To adopt a holistic approach of systemic public grievance reforms through improved mapping, formulation of monitoring matrix, data collection and evaluation in quality of grievance redressal;
- To provide an enabling environment for States and Ministries/Departments of the Government of India for creating web portals and to adopt a holistic approach for improved service delivery through digital platforms;

- To focus on dynamic policy-making and strategic decisions, monitoring of implementation, appointment of key personnel, coordination and evaluation;
- To achieve a sense of common identity by exchange of technical expertise in the areas of Improved Service Delivery between the paired States under the Ek Bharat – Shreshth Bharat Program;
- To work towards long-term engagements in the areas of Improved Service Delivery for Empowering Citizens through greater cooperation between the DARPG and the participating States and,
- To ensure timely publication of Good Governance Index to identify the quality of governance in 10 sectors especially those pertaining to welfare and infrastructure at the Union, State and District levels.

24. EChO Network

Why in News?

- EChO network to catalyze cross-disciplinary leadership in India has been recently launched.

EChO Network:

- It is a national program to provide a template for cross-disciplinary leadership in India with the specific focus of increasing research, knowledge, and awareness of Indian ecology and the environment has been launched.
- The purpose of this Network is to bring all those together to share knowledge and synergize efforts under the umbrella of science.
- It aims to train a new generation of educators and students who can identify and solve problems in an interdisciplinary manner to tackle real-world problems in medicine, agriculture, ecology, and technology.
- The initiative has drawn in partners from Government, industry and academia, with the Office of the Principal Scientific Adviser to the Govt. of India steering the program under the guidance of Prof. Shannon Olsson, Director, EChO Network.

Significance:

- India faces unprecedented threats to its human environmental and ecosystems, solving which requires a confluence of India's strong technological expertise and knowledge of the natural world itself.

- EChO Network would develop a national network to catalyse a new generation of Indians who can synthesize interdisciplinary concepts and tackle real-world problems in medicine, agriculture, ecology, and technology.
- With no precedent for such a network anywhere in the world, EChO Network establishes a new platform to change how science is embedded in our Modern Society.

25. Mission Shat Pratishat

Why in News?

- The Punjab Education Department recently launched Mission Shat Pratishat to achieve 100 per cent result in classes 5, 8, 10, and 12 of Government Schools.

Mission Shat Pratishat:

- The Mission was launched in September 2019 by the Punjab education department.
- It aimed to improve the results of the government schools in terms of pass percentage in the 10th and 12th board examinations.
- There are hundreds of government schools, mostly primary and middle, that do not have enough teaching staff.
- WhatsApp groups of teachers, students, and parents by different subject teachers have been formed to ensure proper coordination as well as sharing of good practices.
- The teachers and students are being sensitized about the structure of the question papers through Edusat (Education Satellite).
- Model question papers have been prepared for every subject and students are being made to solve them.
- The government school teachers have voluntarily been taking extra classes not only during working days but also on Sundays and Holidays.

26. Swadesh Darshan Scheme

Why in News?

- The Cabinet approves the release of funds for 10 projects of the Swadesh Darshan Scheme sanctioned in 2018-19.

Swadesh Darshan Scheme:

- The scheme was launched by the Union Tourism Ministry with the objective to develop theme-based tourist circuits in India.

- These tourist circuits will be developed on the principles of high tourist value, competitiveness and sustainability in an integrated manner.
- The scheme was launched in 2015.
- It is a Central Sector Scheme (which means 100% sponsored by the GOI).
- Under the Scheme 15 circuits have been identified for development namely Himalayan Circuit, North East Circuit, Krishna Circuit, Buddhist Circuit and Coastal Circuit, Desert Circuit, Tribal Circuit, Eco Circuit, Wildlife Circuit, Rural Circuit, Spiritual Circuit, Ramayana Circuit, Heritage Circuit, Tirthankar Circuit and Sufi Circuit.

Objectives of the scheme:

- To position tourism as a major engine of economic growth and job creation.
- Develop circuits having tourist potential in a planned and prioritized manner.
- Promote cultural and heritage value of the country to generate livelihoods in the identified regions.
- Enhancing the tourist attractiveness in a sustainable manner by developing world-class infrastructure in the circuit/destinations.
- Follow community-based development and pro-poor tourism approach.
- Creating awareness among the local communities about the importance of tourism for them in terms of increased sources of income, improved living standards and overall development of the area. To create employment through the active involvement of local communities. Harness tourism potential for its effects on employment generation and economic development.
- To make full use of the potential and advantages in terms of available infrastructure, national culture and characteristic strong points of each and every region throughout the country by the development of theme-based circuits.
- Development of tourist facilitation services to enhance visitor experience/satisfaction.

Tourist Circuit:

- A Tourist Circuit is defined as a route having at least three major tourist destinations which are distinct and apart.
- Circuits should have well-defined entry and exit points. A tourist who enters should get motivated to visit most of the places identified in the circuit.
- A Circuit could be confined to a State or could be a regional circuit covering more than one State/Union Territory. These circuits may have one dominant theme and other sub-themes.

27. Bengal Eastern Frontier Regulations

Why in News?

- The Union Cabinet gave its ex-post facto approval to the Adaptation of Laws (Amendment) Order, 2019 issued by the President of India under clause (2) of Article 372 of the Constitution to amend the Bengal Eastern Frontier Regulations (BEFR), 1873.

Bengal Eastern Frontier Regulations, 1873:

- The notification will extend BEFR to the State of Manipur to give its indigenous people protection from the provisions of Citizenship Amendment Act, 2019 and make necessary changes in the said Regulation.
- This regulation introduced the Inner Line Permit (ILP) concept. (The ILP regulates visit of Indians to States where ILP regime is prevalent under Bengal Eastern Frontier Regulation, 1873.)
- The Regulation protected the British Crown's interest in the tea, oil and elephant trade by prohibiting "British subjects" from entering into these "Protected Areas" (to prevent them from establishing any commercial venture that could rival the Crown's agents).
- The word "British subjects" was replaced by "Citizens of India" in 1950.
- In terms of Section 2 of the Bengal Eastern Frontier Regulations, 1873, the Inner Line Permit system is prevalent in the three North Eastern States, namely, Arunachal Pradesh, Mizoram and Nagaland. Citizens of other States require ILP for visiting these three States.
- The main aim of the ILP system is to prevent settlement of other Indian nationals in the States where the ILP regime is prevalent, in order to protect the indigenous/tribal population.

28. Jal Jeevan Mission

Why in News?

- Prime Minister releases operational guidelines for the implementation of Jal Jeevan Mission.

Jal Jeevan Mission:

- The Mission was announced in August 2019.
- The chief objective of the Mission is to provide piped water supply (Har Ghar Jal) to all rural and urban households by 2024.
- It also aims to create local infrastructure for rainwater harvesting, groundwater recharge and management of household waste water for reuse in Agriculture.

- According to the data published in various reports, about half of the country's households don't have access to piped water supply.
- It is an urgent requirement of water conservation in the country because of the decreasing amount of groundwater level.
- Therefore, the Jal Jeevan Mission will focus on integrated demand and supply management of water at the local level.

Benefits:

- ✓ Household pipeline water supply
- ✓ Clean and drinkable water
- ✓ Recharge of groundwater level
- ✓ Better local infrastructure
- ✓ Less water-borne diseases
- ✓ Less water wastage

29. Overseas Citizen of India (OCI)

Why in News?

- Over the past few months, many OCI cardholders have faced similar issues and have had to cancel their trips to India. After receiving a flood of complaints the Ministry of External Affairs had announced a relaxation in the rules earlier this month.

Highlights:

- As per the MEA rules, an OCI card needs to be re-issued every time a passport is renewed by cardholders below the age of 20 years and those who have completed the age of 50 years.
- Cardholders between 21 and 50 years of age who acquire a new passport do not need to get their OCI card re-issued.
- The guidelines have been in force since 2005, as per the MEA.
- In the past several months, many OCI holders complained of being subjected to harassment by immigration authorities as well as airline officials over the rule, which had not been enforced so far.

OCI:

- An OCI, is a category introduced by the government in 2005.
- Persons of Indian Origin (PIOs) of certain categories as specified in the Citizenship Act, 1955 are eligible for being OCI cardholders.

- Some of the benefits for PIO and OCI cardholders were different until 2015, when the government merged these two categories.
- The MHA defines an OCI as a person who was a citizen of India on or after January 26, 1950; or was eligible to become a citizen of India on that date; or who is a child or grandchild of such a person, among other eligibility criteria.
- According to Section 7A of the OCI card rules, an applicant is not eligible for the OCI card if he, his parents or grandparents have ever been a citizen of Pakistan or Bangladesh.

Privileges to an OCI:

- OCI cardholders can enter India multiple times, get a multipurpose lifelong visa to visit India, and are exempt from registering with Foreigners Regional Registration Office (FRRO) no matter how long their stay.
- If an individual is registered as an OCI for a period of five years, he/she are eligible to apply for Indian citizenship.
- At all Indian international airports, OCI cardholders are provided with special immigration counters.
- OCI cardholders can open special bank accounts in India, they can buy non-farm property and exercise ownership rights and can also apply for a driver's license and PAN card.
- However, OCI cardholders do not get voting rights, cannot hold a government job and purchase agricultural or farm land.
- They cannot run for public office either, nor can they travel to restricted areas without Government Permission.

MEA Relaxation:

- Subsequently MEA has allowed OCI cardholders, either below 20 years or above 50 years of age and who had renewed their passports, to continue their travel to India till June 30, subject to them carrying both the old and new passports along with the OCI card.
- After June 30, they will have to get new OCI cards.
- Previously, OCI holders also had to get a 'U' visa sticker on their passports, but the MEA later dispensed with the requirement.
- According to the website of the Bureau of Immigration, OCI cardholders are now given immigration clearance on the strength of their valid foreign passport and OCI card.

30. Good Governance Index

Why in News?

- The Union Minister of State for Personnel, Public Grievances & Pensions launched the 'Good Governance Index' on the occasion of 'Good Governance Day'.
- Good Governance Day is observed on the birth anniversary of former Prime Minister Shri Atal Bihari Vajpayee (25th December). It was observed for the first time in 2014.

Good Governance Index (GGI):

- The Good Governance Index is a uniform tool across States to assess the status of governance and the impact of various interventions taken up by the State Government and UTs.
- **The objectives of GGI are:**
 1. To provide quantifiable data to compare the state of governance in all states and UTs.
 2. To enable states and UTs to formulate and implement suitable strategies for improving governance.
 3. To shift to result-oriented approaches and administration.

How is the GGI Calculated?

- Various principles have been kept in mind while selecting the indicators, i.e. it should be easy to understand & calculate, citizen-centric & result-driven, leading to improved results and applicable to all states and UTs, among others.
- The GGI takes into consideration ten sectors, namely,
 - ✓ Agriculture and Allied Sectors
 - ✓ Commerce & Industries
 - ✓ Human Resource Development
 - ✓ Public Health
 - ✓ Public Infrastructure & Utilities
 - ✓ Economic Governance
 - ✓ Social Welfare & Development
 - ✓ Judicial & Public Security
 - ✓ Environment
 - ✓ Citizen-Centric Governance
- These ten Governance Sectors are measured on total 50 indicators.

- Difference indicators are given different weightage under one Governance Sector to calculate the value.
- g. Under Agriculture & Allied Sector, there are 6 indicators with different weightage, namely: Growth rate of agriculture and allied sector (0.4), growth rate of food grains production (0.1), growth rate of horticulture produce (0.1), growth rate of milk production (0.1), growth rate of meat production (0.1) and crop insurance (0.2).
- The states and UTs are divided into three groups:
 1. Big States
 2. North-East & Hill States
 3. UTs
- The states and UTs are ranked on all indicators separately, at the same time composite ranking is also calculated for these states and UTs under their respective groups based upon these indicators.

First GGI Report:

- **Among the Big States:**
 - ✓ Tamil Nadu, Maharashtra, Karnataka, Chhattisgarh, Andhra Pradesh and Gujarat are the top six rankers.
 - ✓ The bottom six states are Odisha, Bihar, Goa, Uttar Pradesh and Jharkhand.
- **Among the North-East & Hill States:**
 - ✓ Top 3 states are Himachal Pradesh, Uttarakhand and Tripura.
 - ✓ The bottom 3 states are Meghalaya, Nagaland and Arunachal Pradesh.
 - ✓ Pondicherry leads among the UTs followed closely by Chandigarh with Delhi bagging the third spot. Lakshadweep is at the bottom among the UTs.
- The report also gives sector-wise ranking.
- **In the Environment Sector:**
 - ✓ The top three states are West Bengal, Kerala and Tamil Nadu.
 - ✓ The bottom 3 states are Telangana, Andhra Pradesh and Goa.
 - ✓ West Bengal, however, is at the bottom two in the judicial and public security ranking. Tamil Nadu tops the chart here.
 - ✓ Karnataka is at the top under the economic governance category while Kerala is at the top in the public health sector.

31. Atal Bhujal Yojana

Why in News?

- Prime Minister Narendra Modi launched the Atal Bhujal Yojana to strengthen the institutional framework for participatory groundwater management and bringing about behavioural changes at the community level for sustainable groundwater resource management in seven States.

Highlights:

- The scheme will be implemented in about 8,350 gram panchayats in 78 districts of Gujarat, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan and Uttar Pradesh.
- Of the total outlay of ₹6,000 crore to be provided from 2020--21 to 2024--25, 50% will be in the form of World Bank loan to be repaid by the Central government.
- The remaining part will be made available via Central assistance from regular budgetary support.
- The entire World Bank's loan component and the Central assistance will be passed on to the States as grants.
- The Prime Minister said the scheme, or the guidelines related to the Jal Jeevan Mission, were big steps in proving the resolve to deliver water to every household in the country by 2024. He said the country had to prepare itself for dealing with every situation of water crisis, for which the government had been working at five levels.
- Modi said a comprehensive and holistic approach had been adopted with the setting up of the Jal Shakti Ministry, which this monsoon made extensive efforts for water conservation.
- The Jal Jeevan Mission would work towards delivering piped water supply to every house and Atal Bhujal scheme would pay special attention to those areas where the groundwater was very low.
- To incentivise gram panchayats, the Prime Minister said those with better performance would be given more allocation under the scheme.
- He said both the Central and State governments would spend ₹3.5 lakh crore on water-related schemes in the next five years.

Background:

- Over-exploitation of groundwater resources in India has been of great concern due to its impact on water availability and as well as on the environment.

- A recent report of NITI Aayog on groundwater level says 21 Indian cities including Delhi, Bengaluru, Chennai, and Hyderabad – will run out of groundwater by 2020.
- It also says that 40 percent of India’s population will have no access to drinking water by 2030. So in order to promote conservation of groundwater resources and their sustainable usage, the government has been working on various strategies.

32. Earliest Sanskrit inscription in South India found in A.P

Why in News?

- In a significant find, the Epigraphy Branch of the Archaeological Survey of India has discovered the earliest epigraphic evidence so far for the Saptamatrika cult.
- It is also the earliest Sanskrit inscription to have been discovered in South India till date.

Highlights:

- Saptamatrikas are a group of seven female deities worshipped in Hinduism as personifying the energy of their respective consorts.
- The inscription is in Sanskrit and in Brahmi characters and was issued by the Satavahana King Vijaya in 207 A.D.
- The inscription was discovered in the Chebrolu village in Guntur district of Andhra Pradesh.
- The inscription was first copied and studied, and it transpired that it records the construction of a prasada (temple), a mandapa and consecration of images on the southern side of the temple by a person named Kartika for the merit of the king at the temple of Bhagavathi (Goddess) Saktimatruka (Saptamatrika) at Tambrape; Tambrape being the ancient name of Chebrolu.
- There are references of Saptamatrika worship in the early Kadamba copper plates and the early Chalukya and Eastern Chalukya copper plates. But the new discovery predates them by almost 200 years.
- The verification of all the available records proved that the Chebrolu inscription of Satavahana king Vijaya issued in his 5th regnal year – 207 A.D. – is also the earliest datable Sanskrit inscription from South India so far.
- According to Matsya Purana, Vijaya is the 28th king of the Satavahana dynasty and ruled for 6 years. So far the Nagarjunakonda inscription of Ikshavaku King Ehavala Chantamula issued in his 11th regnal year corresponding to the 4th century A.D. was considered the earliest Sanskrit inscription in South India.

33. “Run Through Files” Mechanism

Why in News?

- To ensure that important government matters don't get delayed owing to conflicting hierarchical and departmental priorities, the Haryana government has introduced a “Run Through Files” Mechanism.

“Run Through Files” Mechanism:

- Haryana government has introduced a new provision of “Run Through Files” in the Centralised File Movement and Tracking Information System (CFMS).
- It would be personally monitored by Chief Minister of Haryana.
- A file shall be marked as Run Through Files only by the CM in the CFMS.
- Every file marked as RTF has to be cleared on priority greater than that is currently being accorded to the files marked top priority.
- At whichever level any contribution other than mere signing on the file is made, the same will also be uploaded on CFMS portal.
- A system generated SMS and email will automatically be sent on each downward or upward movement of the File.

34. National Company Law Appellate Tribunal

Why in News?

- NCLAT was constituted for hearing appeals against the orders of the National Company Law Tribunal (NCLT), which, in turn, simultaneously replaced the erstwhile Company Law Board.
- Constituted under Section 410 of the Companies Act, 2013, the appellate tribunal was conceived as the dedicated appeals forum for resolving corporate law disputes and speeding up the resolution by taking over the role hitherto played by over burdened High Courts in adjudicating such appeals.

Composition:

- The NCLAT initially comprised five members:
 - ❖ A Chairperson & two members each on the judicial and technical sides.
 - ❖ The chairperson must have been a judge of the Supreme Court of India or a Chief Justice of a High Court.
 - ❖ A member (Judicial) of the NCLAT has to have been a judge of a High Court or a judicial member of the NCLT for five years,

- ❖ A Technical Member ought to possess proven ability and standing with domain knowledge and experience of not less than 25 years in areas such as law, industrial finance, industrial management, investment, accountancy, labour matters or corporate restructuring.
- The government has also decided to set up a bench of the appellate tribunal at Chennai.
- Besides deciding on pleas against the NCLT's rulings, including in matters relating to the Insolvency and Bankruptcy Code (IBC), the NCLAT also serves as the appellate body for those aggrieved by decisions made by the Competition Commission of India or orders passed by the Insolvency and Bankruptcy Board of India.

35. Nari Shakti Puraskar 2019

Why in News?

- The Ministry of Women and Child Development has invited applications for Nari Shakti Puraskar for the year 2019.

Nari Shakti Puraskar:

- The National Award is given annually to individuals, groups, institutions in recognition of their exceptional work towards the cause of women empowerment, especially for vulnerable and marginalized women. Nearly 40 Nari Shakti Puraskars will be given away on International Women's Day observed on 8th March 2020. The President gives away the awards.
- The award was formerly known as the Stree Shakti Puraskar. It was instituted in the year 1991. The award carries a cash prize of rupees one lakh and a citation.
- For the year 2012, the award was posthumously bestowed on the 2012 Delhi gang rape victim named 'Nirbhaya'.

36. UGC Issues Norms for Ethics in Higher Education

Why in News?

- Union HRD Minister launched the 5 documents developed by UGC covering: Evaluation reforms, eco-friendly and sustainable university campuses, Human values & professional ethics, Faculty induction and Academic Research Integrity.

Highlights:

- University Grants Commission has adopted the Higher Education Quality Improvement Programme.

- SATAT- Framework for Eco-Friendly and Sustainable Campus development in Higher Educational Institutions, will encourage universities to adopt practices to enhance the environmental quality of the campus.
- MulyaPravah is a document having Guidelines for Inculcation of Human values and Professionals Ethics in Higher Educational Institutions
- Guidelines for Guru-Dakshata – A guide to Faculty Induction Programme (FIP) will sensitise the faculty to adopt learner centred approaches.

University Grants Commission (UGC):

- The University Grants Commission (UGC) of India is a statutory body set up by the Indian Union government in accordance to the UGC Act 1956 under Ministry of Human Resource Development.
- It is charged with coordination of standards of higher education. Its headquarters is in New Delhi, and six regional centres in Pune, Bhopal, Kolkata, Hyderabad, Guwahati and Bangalore.
- UGC has set up a Consortium for Academic and Research Ethics (UGC-CARE) to continuously monitor and identify quality journals across disciplines.

Functions of UGC:

- The three primary functions of UGC include
 - ✓ Overseeing distribution of grants to universities and colleges in India,
 - ✓ Providing scholarships and fellowships to beneficiaries and
 - ✓ Monitoring conformity to its regulations by universities and colleges.

37. Krishi Karman Awards

Why in News?

- The Prime Minister will distribute Krishi Karman Awards and Commendation Awards to states at a public meeting in Tumkur, Karnataka.
- The event will also witness the release of the 3rd instalment of PM Kisan (Pradhan Mantri Kisan Samman Nidhi) of Rs 2000 for the period December 2019-March 2020.

Krishi Karman Awards:

- The Krishi Karman Awards are given to the best performing states in food grain production.
- There are a total number of 7 rewards including 3 for the States with highest food grain production in three identified categories –large, medium and small producers; and 4

rewards one each for the highest production under rice, wheat, pulses and coarse cereals crops.

- However, for rice and wheat, no grouping of states is carried out.
- The reward amount for the highest food grain producing State will be Rs 2 crores and for the individual crop categories, it is Rs 1 crore.
- The first Krishi Karman Awards were first given in 2011.
- The states are divided into the following 3 groups based on the highest production levels of food grains achieved by the States in the previous five years.

❖ **Group 1:**

- ✓ Highest Production (in '000 tons) >10000
- ✓ States: UP, Punjab, AP, WB, Haryana, MP, Rajasthan, Maharashtra, Karnataka, Bihar

❖ **Group 2:**

- ✓ Highest Production (in '000 tons) 1000 – 10000
- ✓ States: Odisha, TN, Gujarat, Chhattisgarh, Assam, Jharkhand, Uttarakhand, HP, J&K

❖ **Group 3:**

- ✓ Highest Production (in '000 tons) < 1000
- ✓ States: Rest of the states

3. SCIENCE & TECHNOLOGY

1. PSLV Gearing Up for its 50th Flight

Why in News?

- The 50th flight of the Polar Satellite Launch Vehicle (PSLV).

Highlights:

- The Indian Space Research Organisation (ISRO) is preparing for the 50th flight of the Polar Satellite Launch Vehicle (PSLV), popularly called the agency's workhorse. The lift-off of the PSLV-C48 mission is scheduled for December 2019.
- To date, 49 PSLV missions have lifted off from the Satish Dhawan Space Centre, Sriharikota.
- They include the initial three developmental flights and 46 operational flights. The total count includes two failed missions and the PSLV variants, such as PSLV-XL and PSLV-CA. Vikram Sarabhai Space Centre (VSSC), is ISRO's lead agency for launch vehicles.
- Along with the higher capacity Geosynchronous Satellite Launch Vehicle (GSLV), the PSLV continues to remain the mainstay of the Indian space programme.
- In a 'career' spanning nearly three decades, the PSLV has launched more than 45 Indian payloads – including the Chandrayaan 1 and Mars Orbiter Mission (Mangalyaan) spacecraft and the IRNSS satellites – and 310 foreign satellites. The C37 mission has the distinction of placing 104 satellites in orbit, a record.
- The 50th flight would have 10 satellites on board, including India's RISAT-2BR1 and nine small satellites from abroad. The successor to the SLV and the ASLV, PSLV is the ISRO's third-gen launch vehicle, capable of placing payloads in different orbits, including the Geosynchronous Transfer Orbit (GTO).

2. ROTAVAC5D

Why in News?

- VP launched the new rotavirus vaccine – ROTAVAC5D.

ROTAVAC5D:

- ROTAVAC5D was designed and developed by Bharat Biotech.
- The vaccine would be a great help in tackling the spread of Rotavirus that causes nearly 8,72,000 hospitalizations, over 32 lakh outpatient visits and an estimated 78 thousand deaths annually in India.

Rotavirus:

- Rotavirus is a virus that is the most widespread reason for severe vomiting and diarrhea in infants and young children.
- A genus of double-stranded RNA virus in the Reoviridae family, it has affected virtually every child in the world at least on one occasion before the child attains five years of age.
- In the case of the rotavirus, the affected person develops immunity with every infection, so that subsequent infections are always less in severity.
- Adults are hardly ever affected by the virus.

3. ISRO's Second Spaceport at Kulasekarapattinam (TN)

Why in News?

- The ISRO has commenced land acquisition for its second launchpad in Kulasekarapattinam, a town in the Thoothukudi (Tuticorin) district of Tamil Nadu.

ISRO's Spaceport:

- ISRO's first and only spaceport, the Satish Dhawan Space Centre (SDSC), is located in Sriharikota, about 100 km north of Chennai, in the state of Andhra Pradesh.
- The organisation launches its PSLV and GSLV rockets from here.
- The SDSC, setup in 1971, currently has two active launchpads.
- Its first launchpad was decommissioned once the Augmented Satellite Launch Vehicle programme ended in 1994. The first of the two active pads mostly services the PSLV and the second, the GSLV, and which ISRO is currently modifying to accommodate crewed vehicle missions as part of its upcoming human spaceflight project, Gaganyaan.
- The second spaceport at Kulasekarapattinam is expected to provide an important advantage to ISRO's upcoming Small Satellite Launch Vehicle (SSLV), a smaller counterpart of the PSLV.

Need for Another Launchpad:

- The PSLV is designed to launch satellites into pole-to-pole, or polar, orbits around Earth.
- However, it can't enter into such an orbit straightaway after launch because its trajectory needs to avoid flying over Sri Lanka, protecting its popular centres from any debris from the rocket.
- So once the rocket lifts off from Sriharikota, it flies further east to avoid Sri Lanka and then steers itself back towards the South Pole.

- This manoeuvre requires more fuel, and for a smaller rocket like the SSLV, the addition could eat into its already limited payload capacity and reduce the rocket's value for Antrix, ISRO's commercial operator.
- By setting up a spaceport in Kulasekarapattinam the SSLV will lift off over the Lakshadweep Sea and won't have to swerve around Sri Lanka as it climbs to higher altitudes.

Significance of Thoothukudi's location:

- **Proximity to the Seashore** makes Thoothukudi ideal for "straight southward" launches. From Sriharikota, such southward bound launches are not possible as the rockets have to fly around Sri Lanka.
- **Nearness to the Equator:** Like the Sriharikota spaceport in the Satish Dhawan Space Centre, Thoothukudi was selected as a spaceport due to its nearness to the equator. A rocket launch site should be on the east coast and near the equator.
- **Logistical Ease:** ISRO has its Liquid Propulsion Systems Centre (LPSC) at Mahendragiri in Tirunelveli district, where it assembles the second and fourth stage engines for the PSLV. Instead of transporting the second and fourth stages to Sriharikota from Mahendragiri, it would be easier to shift them to the launch pad if it is built in Kulasekarapattinam, which is around 100 km away.

4. RISAT-2BR1

Why in News?

- India's Polar Satellite Launch Vehicle, in its fiftieth flight (PSLV-C48), successfully launched RISAT-2BR1 along with nine commercial satellites from the Satish Dhawan Space Centre (SDSC) SHAR, Sriharikota.

Highlights:

- PSLV-C48 lifted-off at 1525 hrs (IST) from the First Launch Pad.
- After 16 minutes and 23 seconds, RISAT-2BR1 was successfully injected into an orbit of 576 km.
- Subsequently, nine commercial satellites were injected into their intended orbits.
- After separation, the two solar arrays of RISAT-2BR1 were deployed automatically and the ISRO Telemetry Tracking and Command Network at Bengaluru assumed control of the satellite.
- In the coming days, the satellite will be brought to its final operational configuration.

- This is PSLV's 50th successful mission. The occasion was also the 75th launch vehicle mission from SDSC SHAR, Sriharikota.

RISAT-2BR1:

- It is a radar imaging earth observation satellite weighing about 628 kg.
- The satellite will provide services in the field of agriculture, forestry and disaster management.
- Its mission life is 5 years.
- The nine customer satellites of Israel, Italy, Japan and the USA were precisely injected into their designated orbits. These satellites were launched under a commercial arrangement with New Space India Limited (NSIL). The NSIL is a commercial subsidiary of the ISRO.

5. New System for Measurement of Weight

Why in News?

- The prototype of one kilogram (NPK-57) is now available in India and placed at the National Physical Laboratory, New Delhi. The new definition of kilogram which has come into effect from May 2019 and few countries have developed the system of realization of unit of mass 'kg'.

Highlights:

- Over the centuries, it has been defined and redefined, with a standard in place since 1889.
- Called Le Grand K, a cylinder of platinum-iridium is locked up in a jar at the International Bureau of Weights and Measures (BIPM) in Paris.
- For nearly 130 years, the mass of this cylinder has been the international standard for the kilogram.

Redefining what constitutes 1 Kg:

- Representatives from 57 countries will vote in Versailles, France, to redefine SI, or the International System of Units.
- The kilogram's definition will be based on a concept of physics called the Planck constant.
- Reports worldwide suggest that the new definition is set to be voted in.

Kibble Balance:

- Kibble balance is a self-calibrating electromechanical balance and provides the measurements of mass, traceable in terms of electrical parameters and provides linkage of macroscopic mass to the Planck constant (h).

- The advantages of Kibble balance would be that the NPK need not to be sent to BIPM for calibrations and the accuracy and stability of Kibble balance is very high.
- This is very important where low weights with high accuracies are essential, for example in pharmaceuticals and biotechnologies.

6. Annular Eclipse of the Sun

Why in News?

- An annular eclipse of the Sun will occur on December 26, 2019.

Highlights:

- From India, the annular phase will be visible in the morning after sunrise from some places within a narrow corridor of the southern part of the country (parts of Karnataka, Kerala & Tamil Nadu) and it will be seen as partial solar eclipse from the rest part of the country.
- In India, the obscuration of the Sun by the Moon at the time of the greatest phase of the annular eclipse will be nearly 93%. As one moves towards the north and south of the country from the annular path, the duration of the partial eclipse decreases.
- The next solar eclipse will be visible from India on June 21, 2020. It will be an annular solar eclipse.

Solar Eclipse:

- A solar eclipse occurs on a new moon day when the Moon comes in between the Earth and the Sun and when all the three celestial bodies are aligned. An annular solar eclipse will occur when the angular diameter of the Moon falls short of that of the Sun so that it cannot cover up the latter completely. As a result, a ring of the Sun's disk remains visible around the Moon. The eclipsed Sun should not be viewed with the naked eye, even for a very short time. It will cause permanent damage to the eyes leading to blindness even when the moon covers most portions of the Sun.
- The safe technique to observe the solar eclipse is either by using a proper filter like aluminized Mylar, black polymer, welding glass of shade number 14 or by making a projection of Sun's image on a whiteboard by Telescope.

7. Caterpillar fungus – the 'Himalayan gold'

Why in News?

- Trade and collection of 'Himalayan Gold' – caterpillar fungus has become extremely popular in recent times.

‘Himalayan Gold’:

- Caterpillar fungus (*Ophiocordyceps Sinensis*) is a fungal parasite of larvae (caterpillars) that belongs to the ghost moth.
- It is endemic to the Tibetan Plateau, including the adjoining high Himalaya (3,200-4,500 metres above sea level).
- It is locally known as Kira Jari (in India), Yartsagunbu (in Tibet), Yarso Gumbub (Bhutan), Dong Chong Xia Cao (China) and Yarsagumba (in Nepal).
- In the Indian Himalayas, the species has been documented in the region from the alpine meadows of protected areas such as Nanda Devi Biosphere Reserve, Askot Wildlife Sanctuary, Kanchendzonga Biosphere Reserve and Dehan-Debang Biosphere Reserve.

Economic Significance:

- For centuries, caterpillar fungus has seemingly been used in traditional Tibetan and Chinese medicine as a tonic, as a therapeutic medicine for lung, liver and kidney problems.
- In recent time the species has been widely traded as an aphrodisiac and a powerful tonic.
- There are also reports that caterpillar fungus possesses a range of more specific therapeutic properties; including action against asthma and bronchial inflammation, cure of renal complaints, irregular menstruation and stimulation of the Immune System.

Harvesting and Trade:

- Harvesting of caterpillar fungus starts at the beginning of May and lasts till the end of June.
- The collection period, however, depends on factors such as weather, snow cover on the pasture and elevation of collection sites.
- The mean annual buying price by local traders in villages of the Nanda Devi Biosphere Reserve has increased steadily from approximately \$4,700 (Rs 3.3 lakh) per kilogramme in 2006 to more than \$13,000 per kg in 2015.
- Increasing trade-induced over-harvesting seems almost undoubtedly responsible for the declining populations of the Caterpillar Fungus.

8. Carbon Dots

Why in News?

- In an extraordinary waste-to-wealth feat, researchers from Assam have used the commonly found invasive plant water hyacinth to produce Carbon Nanoparticles.

Carbon Dots:

- The researchers harvested water hyacinth leaves, removed the chlorophyll, dried and powdered it.
- The sieved powder underwent several treatments including heating at 150 degree Celsius to convert it to carbon dots.
- When a nanoparticle is less than 10 nanometres call it a dot or nanodot.
- These carbon dots were able to give a green fluorescence under UV light.
- These extremely tiny (less than 10 nanometres) particles can be used for detecting a commonly used herbicide – pretilachlor.
- The nanoparticles were found to be selective and sensitive for the detection of the herbicide. Some teams are exploring if its fibre can be used to make furniture.

9. Pinaka Missile System

Why in News?

- India's indigenously developed Pinaka missile system, which is capable of striking up to range of 75 kilometres, was successfully flight-tested, a boost to its artillery power.

Highlights:

- Pinaka is a multi-barrel rocket launcher (MBRL) produced in India and developed by the Defence Research and Development Organisation (DRDO) for the Indian Army.
- The earlier version of Pinaka system, known as Mark-I has the maximum range of 40 km for Mark-I while the latest version, known as Mark-II, has the range of 75 km.
- Pinaka Mark-II rocket is modified as a missile by integrating the navigation, control and guidance system to improve the end accuracy and enhance the range.
- Pinaka missile system was designed to replace the BM-21 multiple rocket launcher system of the Indian Army. Mark-I was used in Kargil War.
- The navigation system of the missile is aided by the Indian Regional Navigation Satellite System (IRNSS).

10. Automotive Industry Standards (AIS)-155

Why in News?

- The Union Ministry of Road Transport & Highways (MoRTH) has notified regarding to Automotive Industry Standards (AIS)-155 in respect of Microdot identifiers affixed on the motor vehicles.

AIS-155:

- AIS-155 is an Indian standard for Microdot identifiers which are affixed on the motor vehicles and their parts, components, assemblies, sub-assemblies through amendment in Rule 92 of the Central Motor vehicles.
- The Central Motor vehicles (Fourteenth Amendment) Rules, 2019 comes into force on the date of publication in the Official Gazette.

Microdots Technology:

- The Ministry of Road Transport and Highways issued a draft notification on amending the Central Motor Vehicles Rules, 1989, and allowing motor vehicles and their parts, components, assemblies, sub-assemblies to be affixed with permanent and nearly invisible microdots.
- These microdots can be read physically with a microscope and identified with ultraviolet light.
- Microdots are a globally proven technology to ensure originality in spare parts of machines and components, including in the automobile sector.
- The government has envisaged that with microdots becoming a permanent feature in vehicles, identifying them would become easier in case they are stolen.
- The microdots and adhesive are to become a permanent fixture/affixation which cannot be removed without damaging the asset itself.
- The microdots are to comply with AIS 155 requirements, if affixed.
- The technology involves spraying thousands of microscopic dots onto vehicles or other assets to form a unique identification.
- Each microdot carries this identification which is registered to the owner, but is not visible to the Naked Eye.

11. BrahMos Hypersonic Missile

Why in News?

- The DRDO recently carried out two successful tests of the latest variant of the BrahMos missile, one from the land platform and the other from Air.

BrahMos Missile:

- An amalgam of the names of the rivers Brahmaputra and Moskva, BrahMos is being produced by BrahMos Aerospace, a joint venture company set up by DRDO and Mashinostroyenia of Russia in 1998.

- The first version of the BrahMos supersonic cruise missile was inducted into the Indian Navy in 2005, meant to be fired from INS Rajput.
- It is a cruise missile, meaning it can be guided towards a pre-determined land- or sea-based target.
- With a capability to attain speeds 2.8 times that of sound (Mach 2.8), BrahMos is classified as supersonic cruise missile.

Recent Upgradation:

- A newer version under development is aimed at flying at speeds greater than Mach 5. These are called hypersonic cruise missiles.
- Besides decreasing the reaction time of the enemy, higher speeds also substantially reduce the chances of the Missile Getting Intercepted.

Significance:

- In November 2017, the Indian Air Force had become the first in the world to successfully air-launch a Mach 2.8 supersonic surface-attack missile of this category from a fighter jet.
- The recent successful testing of air-platform of BrahMos has further strengthened the tactical cruise missile triad – land, sea and air – for India.

12. SnowEx

Why in News?

- For a better understanding of how much water is contained in each winter's snowfall and how much will be available when it melts in the spring, NASA has launched a seasonal campaign – part of a five-year programme called SnowEx.
- Around 1.2 billion people, or nearly one-sixth of the world, depend on seasonal snow and glaciers for their water supply.

SnowEx:

- SnowEx was initiated in 2016-17.
- The overall target is optimal strategies for mapping global snow water equivalent (SWE) with remote sensing and models leading to a Decadal Survey “Earth System Explorer” mission.
- Within its geographic range, SnowEx assesses where snow has fallen, how much there is and how its characteristics change as it melts.

How does it work?

- It uses Airborne Measurements, Ground Measurements and Computer Modelling.
- The airborne campaign will fly radar and lidar to measure snow depth, microwave radar and radiometers to measure SWE, optical cameras to photograph the surface, infrared radiometers to measure surface temperature, and hyperspectral imagers for snow cover and composition.
- Ground teams will measure snow depth, density, accumulation layers, temperature, wetness and snow grain size — the size of a typical particle.

13. Gaganyaan - Unmanned test mission

Why in News?

- The Indian Space Research Organisation (ISRO) planning its first unmanned test mission of the Gaganyaan mission.

Highlights:

- Gaganyaan will be the first manned space mission of ISRO which is proposed to be launched by 2022.
- India has already successfully developed and tested several building blocks, including re-entry space capsule, pad abort test, safe crew ejection mechanism in case of rocket failure, flight suit developed by DEBEL and the powerful GSLV-MkIII launch vehicle.
- The orbital and re-entry mission and recovery operations have been flight demonstrated in Space Capsule Re-entry Experiment (SRE) mission.
- Having met all required technological keystones, the Indian Human Spaceflight Programme was accepted and formally announced by the Prime Minister on 15 August 2018.
- Gaganyaan is an Indian crewed orbital spacecraft intended to be the basis of the Indian Human Spaceflight Programme.
- Gaganyaan is expected to carry three people into space for seven days. The largely autonomous capsule will orbit the Earth in the low earth orbit of 300-400 Km.
- The crewed vehicle is planned to be launched on ISRO's GSLV Mk III in December 2021. HAL has manufactured the crew module.
- With this, India could potentially become the fourth country to send a man to space, after the erstwhile USSR, the US and China. Denmark also has a manned space flight scheduled for 2022.

Timeline:

- Two unmanned Gaganyaan missions will be undertaken prior to sending humans.
- As per ISRO schedule, the first and second unmanned flights would be sent in orbit within 30 and 36 months beginning from August 2018. The Indian Space Research Organisation (ISRO) is planning to fly the first unmanned test mission carrying a humanoid ahead of its crewed Gaganyaan mission.

14. Sun's Corona

Why in News?

- Solar physicists from Centre for Excellence in Space Sciences (CESSI), IISER Kolkata, have succeeded in predicting the shape of Sun's corona at the time of the recent annular eclipse.

Corona:

- The corona is the outermost part of the Sun's atmosphere. It is the aura of plasma that surrounds the Sun and other stars.
- The Sun's corona extends millions of kilometres into outer space and is most easily seen during a total solar eclipse, but it is also observable with a coronagraph. Spectroscopy measurements indicate strong ionization in the corona and a plasma temperature in excess of 1000000 Kelvin much hotter than the surface of the Sun.
- The Predictive Solar Surface Flux Transport model developed by the CESSI team can predict the shape of the corona well in advance.
- The researchers can predict the large-scale structure of the Sun's corona up to two months in advance.
- This model gives advance knowledge and a large window of preparedness for space weather driven by Coronal Magnetic Fields.

Space Weather:

- The dynamic events on the Sun can affect Earth's outer atmosphere and our technologies, leading to disruption in communication and navigation networks (GPS).
- These are more frequent during solar maxima and pose a threat to space reliant technology and astronauts.

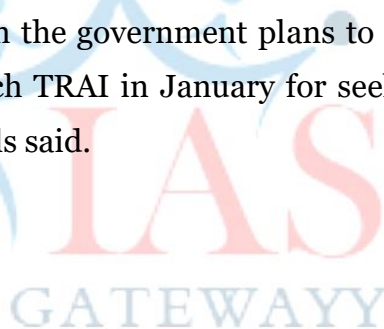
15. 'Millimeter' Spectrum

Why in News?

- The Department of Telecommunications (DoT) plans to auction the 24.75 – 27.25 gigahertz (GHz) spectrum in the 5G band in the next calendar year, and is likely to seek Telecom Regulatory Authority of India's (TRAI) views on the same, officials in the know of the developments said.

Millimeter Wave Band:

- The millimeter-wave band or extremely high-frequency frequency spectrum is mainly designed for usage in airport security scanners, closed-circuit television, scientific research, machine-to-machine communication, and military fire control.
- As your wavelength becomes smaller, the cell size becomes less, which is the footprint of the relay station. This will be used more by the industry. And where you already have fiber connection and you want to reach houses, this will be through millimeter bands
- This new spectrum under the 5G band called the 'millimeter-wave bands' is separate from the 8,300 megahertz (MHz), which the government plans to auction between March and April. The DoT is likely to approach TRAI in January for seeking its views on the sale of these additional bands, DoT officials said.

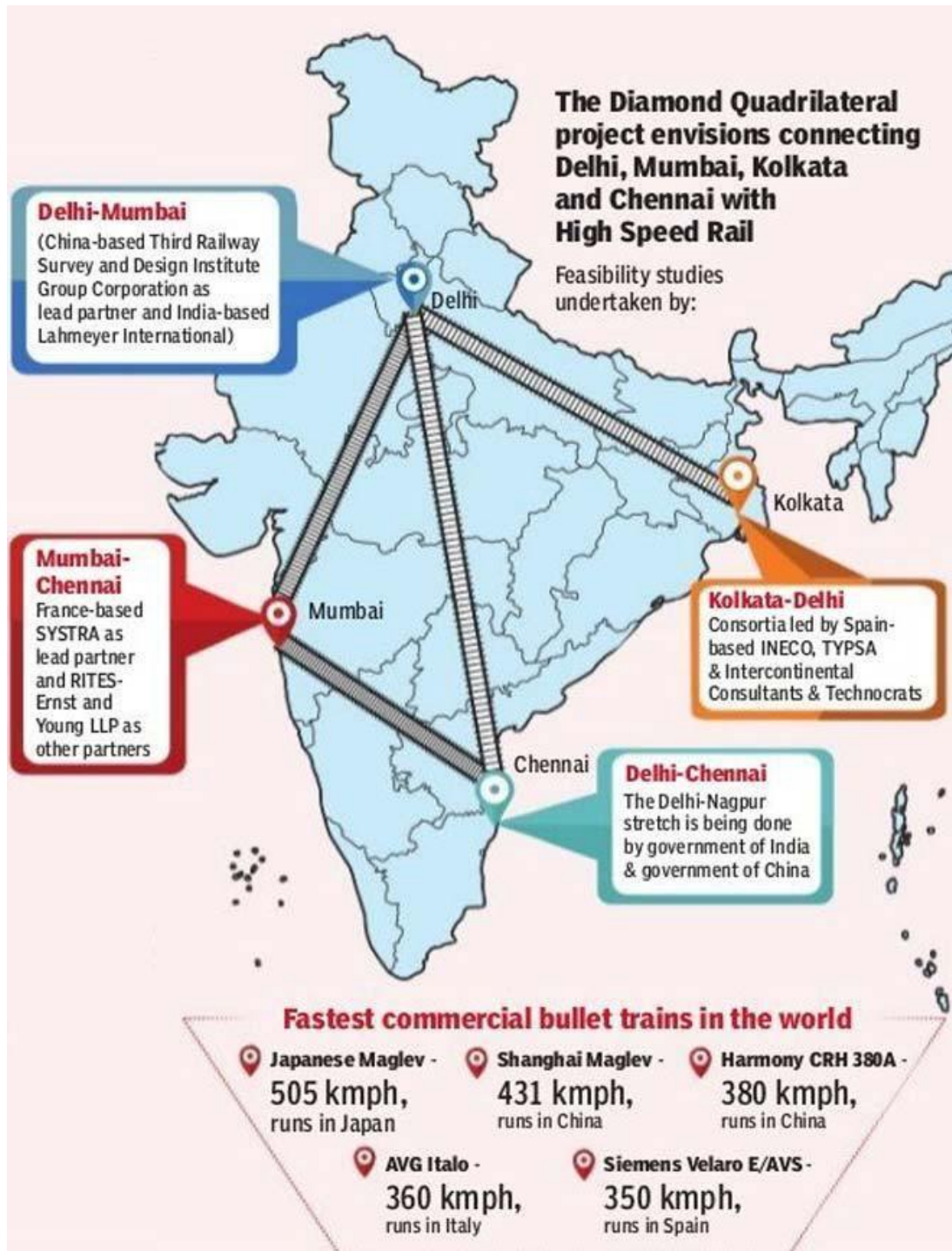


4. ECONOMY

1. Diamond Quadrilateral Bullet Train Network Project

Diamond Quadrilateral Bullet Train Network Project:

- In the Railway Budget 2014-15, it was announced to undertake planning of high-speed rail connectivity on Diamond Quadrilateral network connecting major metros and growth centres of the country.



- Accordingly, Ministry of Railways has undertaken feasibility studies for some routes namely Delhi-Mumbai, Delhi-Kolkata, Mumbai-Chennai, Mumbai-Nagpur and Chennai-Bengaluru-Mysuru.
- However, being highly capital intensive, the sanction of any High Speed Rail Project has not yet commended.
- Till now, Government has sanctioned Mumbai-Ahmedabad High Speed Rail (MAHSR) Project with technical and financial assistance of Government of Japan.
- This project is targetted for completion by the year 2023.

2. Independent Director's Databank

Why in News?

- The Corporate Affairs Ministry launched 'Independent Director's Databank'.

Highlights:

- The Ministry launched the databank in accordance with the Companies Act, 2013 and the rules made thereunder.
- The databank can be accessed at the official website of the Ministry of Corporate Affairs.
- It is an initiative of the Ministry to provide an easy to access & navigate platform for the registration of existing independent directors as well as individuals aspiring to become independent directors.
- Powered by an Integrated Learning Management System, the various e-learning capsules and videos available in the system will enable individual users to easily acquire knowledge from diverse resources, develop distinct skills and assess their understanding of company operations, regulations and compliances.
- Companies also may register themselves with the databank to search, select and connect with individuals who possess the right skills and attitude for being considered for appointment as Independent Directors. The Databank is expected to become a comprehensive repository of both existing independent directors as well as individuals eligible and willing to be appointed as Independent Directors. The Databank portal which has been developed and will be maintained by the Indian Institute for Corporate Affairs (IICA) is a first of its kind initiative from the Ministry.
- It provides for a wide array of e-learning courses on various topics including the Companies Act, Securities laws, basic accountancy, board practices, board ethics and board effectiveness.

- As per the notified rules, all existing Independent Directors are required to register themselves in the databank within 3 months from 01 December 2019.
- They are also required to pass a basic online proficiency self-assessment test which will be available from March 2020 onwards within 12 months thereafter.
- In order to provide sufficient practice to individuals, a number of online mock tests have also been made available in the system.

3. Ratna Status to CPSEs

Why in News?

- The criteria laid down by the Government for grant of Maharatna, Navratna and Miniratna status to Central Public Sector Enterprises (CPSEs) is given below:

Criteria for grant of Maharatna Status to CPSEs:

- Having Navratna status
- Listed on Indian stock exchange with minimum prescribed public shareholding under SEBI regulations
- An average annual turnover of more than Rs. 25,000 crores during the last 3 years
- An average annual net worth of more than Rs. 15,000 crores during the last 3 years
- An average annual net profit after tax of more than Rs. 5,000 crores during the last 3 years
- Should have significant global presence/international operations.

Criteria for grant of Navratna status to CPSEs:

- The CPSEs which are Miniratna I, Schedule 'A' and have obtained 'excellent' or 'very good' MOU rating in three of the last five years and having composite score of 60 or above in following six selected performance indicators are eligible to be considered for grant of Navratna status.
 - ✓ Net Profit to Net worth: 25
 - ✓ Manpower Cost to total Cost of Production or Cost of Services: 15
 - ✓ PBDIT to Capital employed: 15
 - ✓ PBIT to Turnover: 15
 - ✓ Earning Per Share: 10
 - ✓ Inter Sectoral Performance: 20

Criteria for grant of Miniratna status to CPSEs:

- Miniratna Category-I status: – The CPSEs which have made profit in the last three years continuously, pre-tax profit is Rs.30 crores or more in at least one of the three years and have a positive net worth are eligible to be considered for grant of Miniratna-I status.

- Miniratna Category-II status: – The CPSEs which have made profit for the last three years continuously and have a positive net worth are eligible to be considered for grant of Miniratna-II status.

4. Startup India Global Venture Capital Summit 2019

Why in News?

- The Department for Promotion of Industry and Internal Trade (DPIIT), in partnership with Government of Goa, is organizing the 2nd edition of the Startup India Global Venture Capital Summit.

Highlights:

- The key objectives of the Summit are to showcase India's opportunity in the sectors of E-Mobility, FinTech, MedTech, Enterprise Software, EdTech, Genomics and Lifesciences.
- It will also look at the increase of capital flow for Indian Startups by showcasing high-quality tech and non-tech startups to the global investor community and foster Ease of Doing Business by identifying and discussing issues faced by the investor community.
- Through this event Startup India is providing the Indian startups with an opportunity to meet Top Global Investors at the event to get business guidance and to discuss investment opportunities.
- This year the Summit aims to reach new heights in both reach and scope. The focus of the Summit is to mobilize global capital for innovation in India.
- The Summit will bring together a series of engagements involving over 350 representatives of leading Global Venture Capital Firms, Limited Partners, Family Offices, High-Network Individuals, Government of India officials, top Corporates, and select innovative Startups.
- It will showcase the India Advantage, diversity and scale of Indian market opportunity, and the cutting-edge innovations originating in India.
- The Summit also aims to understand the best practices for the venture capital industry, identify issues faced by them for investments in India, and evaluate ways to address them.

5. Initiatives for promoting Leather Industry

Why in News?

- The government aims at the development of infrastructure for the leather sector, address environment concerns specific to the leather sector, facilitate additional investments, employment generation and increase in production.

Merchandise Exports from India Scheme (MEIS):

- MEIS was introduced in the FTP from 01.04.2015, providing rewards for exporters of specified goods.
- The objective of the MEIS is to offset infrastructural inefficiencies and associated costs involved in exporting goods/products which are produced/manufactured in India.
- The scheme incentivizes exporters in terms of Duty Credit Scrips at the rate of 2, 3, 4, 5, 7 % of FOB Value of exports realized.
- Goods and Service Tax (GST) Rates for selected leather industry items have been reduced.
- Duty-Free Import of Inputs: Enhancement of duty-free limit (Basic Customs duty exemption) for import of critical import by manufacturer exporters of footwear and other leather products.
- Interest equalization rate was enhanced from 3% to 5% for Micro Small and Medium Enterprises units
- Removal of Animal Quarantine clearance for most of the categories of finished and crust leathers imported into India
- In order to promote Green Tanning, the Union Budget 2017-18 announced the reduction of Basic Customs Duty on Vegetable Tanning Extracts.

Indian Footwear, Leather & Accessories Development Programme:

- **Human Resource Development (HRD) sub-scheme:** HRD sub-scheme provides assistance for Placement Linked Skill Development training to unemployed persons and skill up-gradation training to employed workers.
- **Integrated Development of Leather Sector (IDLS) sub-scheme:** IDLS sub-scheme incentivizes investment and manufacturing including job creation by providing backend investment grant/subsidy at 30% of the cost of new Plant and Machinery to Micro, Small & Medium Enterprises (MSMEs).
- **Establishment of Institutional Facilities sub-scheme:** The sub-scheme provides assistance to Footwear Design & Development Institute (FDDI) for up-gradation of some of the existing campuses of FDDI into “Centres of Excellence” and establishing 3 new fully equipped skill centres alongside the upcoming Mega Leather Cluster.
- **Mega Leather, Footwear and Accessories Cluster (MLFAC) sub-scheme:** The MLFAC sub-scheme provides infrastructure support to the Leather, Footwear and Accessories Sector by the establishment of Mega Leather, Footwear and Accessories Cluster.

- **Leather Technology, Innovation and Environmental Issues sub-scheme:** Under this sub-scheme, assistance is provided for upgradation/installation of Common Effluent Treatment Plants (CETPs) at 70% of the project cost.
- **Promotion of Indian Brands in Leather, Footwear and Accessories Sector sub-scheme:** Under this sub-scheme, the eligible units approved for Brand Promotion are assisted.
- **Additional Employment Incentive for Leather, Footwear and Accessories Sector sub-scheme:** Under this sub-scheme, employers' contribution of 3.67% to Employees' Provident Fund for all new employees in Leather, Footwear and Accessories sector, are provided for enrolling in EPFO for first 3 years of their employment.

6. Railways 'RailWire' Wi-Fi goes Live in 5500 Railway Stations

Why in News?

- The Railways has successfully completed the work of providing free public Wi-Fi at 5500 stations across the country.

RailWire:

- RailWire is a retail Broadband initiative of the RailTel.
- It envisages extending broadband and application services to the public. RailTel is working to establish bringing fast and free Wi-Fi at all stations (except the halt stations) within a year.
- The Wi-Fi at stations has been provided in association with Google as the technology partner.

RailTel:

- RailTel Corporation a "Mini Ratna(Category-I)" PSU of Ministry of Railways, is the largest neutral telecom services providers in the country owning a Pan-India optic fiber network covering all important towns & cities of the country and several rural areas covering 70% of India's population.
- RailTel is in the forefront in providing nationwide Broadband Telecom & Multimedia Network in all parts of the country in addition to modernization of Train operations and administration network systems for Indian Railways.
- With its Pan India high capacity network, RailTel is working towards creating a knowledge society at various fronts and has been selected for implementation of various mission-mode Govt. of India projects in the telecom field.

7. Infrastructure Investment Trust

Why in News?

- Cabinet authorises NHAI to set up Infrastructure Investment Trust and monetize National Highway projects.

Highlights:

- The Union Cabinet has given its approval to the proposal of the Ministry of Road Transport and Highways authorizing the National Highways Authority of India (NHA) to set up an Infrastructure Investment Trust(s) (InvIT) as per InvIT Guidelines issued by SEBI.
- This will enable the NHA to monetize completed national highways that have a toll collection track record of at least one year and the NHA reserves the right to levy toll on the identified highway.
- InvIT as an instrument provides greater flexibility to investors and is expected to create the following opportunities:
 - Generation of specialized O&M Concessionaires (Operation & Maintenance).
 - Attract patient capital (for say 20-30 years) to the Indian highway market, as these investors are averse to construction risk and are interested in investment in assets which provide long-term stable returns.
 - Retail domestic savings and corpus of special institutions (such as mutual funds, PFRDA, etc.) to be invested in infrastructure sector through InvIT.

NHA:

- The National Highways Authority of India was set up by an act of Parliament, the NHA Act, 1988.
- It develops, maintains and manages the national highways of India.
- National Highways are the arterial roads of the country for inter-state movement of passengers and goods.
- They traverse the length and width of the country connecting the National and State capitals, major ports and rail junctions and link up with border roads and foreign highways.
- The total length of NH (including expressways) in the country at present is 1,32,499 km.
- While Highways/Expressways constitute only about 1.7% of the length of all roads, they carry about 40% of the road traffic.

- NHAH is mandated to implement the National Highways Development Project (NHDP) which is India's largest ever Highways Project in a phased manner.
- The NHAH also collects fees on national highways, regulates and controls the plying of vehicles on the highways for its proper management.
- It functions under the Ministry of Road Transport & Highways, Government of India.

8. National Financial Reporting Authority (NFRA)

Why in News?

- The National Financial Reporting Authority (NFRA) has issued Audit Quality Review (AQR) report of the statutory audit for the year 2017-18 of IL&FS Financial Services Limited (IFIN).

NFRA:

- The NFRA was constituted by the Government of India in 2018 under the Indian Companies Act, 2013.
- The need for establishing the NFRA was felt in the wake of accounting scams and to establish an independent regulator for enforcement of auditing standards and ensuring the quality of audits.
- While many recommendations of the Companies Act came into force in 2014, the setting up of the NFRA was delayed due to discontent from the then regulator, the Institute of Chartered Accountants of India (ICAI).
- The ICAI is a statutory body set up in 1949.
- It regulates the profession of Chartered Accountancy in the country.
- It is a self-regulatory body and has had a monopoly on training and qualifying chartered accountants, giving them license to practice and regulating them including scrutinising audit quality. Across the globe, over 50 countries have moved away from self-regulatory professional accountant bodies (like ICAI) and created independent audit regulators (like NFRA). In India, the move to set up a new oversight body for the accounting and audit professions was approved by a parliamentary panel.
- After the Satyam scandal (2009), the Standing Committee on Finance proposed the concept of the NFRA for the first time.

Functions of the NFRA:

- Recommend accounting and auditing policies and standards to be adopted by companies for approval by the Central Government.

- Monitor and enforce compliance with accounting standards and auditing standards.
- Oversee the quality of service of the professions associated with ensuring compliance with such standards and suggest measures for improvement in the quality of service.
- Perform such other functions and duties as may be necessary or incidental to the aforesaid functions and duties.

NFRA's Jurisdiction:

- The NFRA will oversee the quality of service and undertake investigation of the auditors of listed entities; unlisted entities with paid-up capital of not less than ₹500 crore or annual turnover of over ₹1,000 crore or those having aggregate loans, debentures or deposits of not less than ₹500 crore as of March 31 of the preceding financial year.
- The ICAI retains the jurisdiction of small listed companies.
- The NFRA will also have oversight over auditors of banks, insurers, electricity firms and also those body corporates referred to it by the Centre.
- It will investigate matters, either suo moto or on a reference made to it by the Central Government, of professional misconduct by chartered accountants (CA) or CA firms, impose a penalty and debar the CA or CA firm for up to 10 years.

9. Partial Credit Guarantee Scheme

Why in News?

- The Union Cabinet has approved a partial credit guarantee scheme for public sector banks (PSBs) to purchase high-rated pooled assets from financially sound NBFCs and Housing Finance Companies.

Highlights:

- PSBs can purchase high-rated pooled assets from financially sound NBFCs/Housing Finance Companies (HFCs), with the amount of overall guarantee provided by government till the first loss of up to 10 per cent of fair value of assets being purchased by banks or Rs 10,000 crore, whichever is lower.
- The scheme would cover NBFCs / HFCs that may have slipped into SMA-0 category during the one-year period prior to 1.8.2018, and asset pools rated “BBB+” or higher.

Partial Credit Guarantee Scheme:

- The Union Government had issued the PCG Scheme in the Union Budget this year to provide a one-time partial credit guarantee to PSBs for purchase of pooled assets of financially sound NBFCs.

- It aims to address temporary asset liability mismatches of otherwise solvent NBFCs/HFCs without having to resort to distress sale of their assets for meeting their commitments.
- It allows PSBs to purchase pooled assets enabled by Government guarantee support under the Scheme to addressing temporary liquidity / cash flow mismatch issues of otherwise solvent NBFCs / HFCs.
- This pooling would allow NBFCs without them having to resort to distress sale of their assets for meeting their commitments.
- This will provide liquidity to the NBFC / HFC concerned for financing the credit demand of the economy, and also protect the financial system of the country from any adverse contagion effect that may arise due to the failure of such NBFCs / HFCs.

Significance:

- The window for one-time partial credit guarantee offered by GoI will open from the date of issuance of the Scheme by the Government for a period of six months, or till such date by which Rupees One lakh crore assets get purchased by banks, whichever is earlier.
- The proposed Guarantee support and resultant pool buyouts will help address NBFCs/HFCs resolve their temporary liquidity or cash flow mismatch issues.
- It will enable them to continue contributing to credit creation and providing last mile lending to borrowers, thereby spurring economic growth.

10. Unified Payment Interface system

Why in News?

- In a thumbs up to India's Unified Payments Interface (UPI) scheme, Google has written to the U.S. Federal Reserve Board detailing the successful example of UPI-based digital payments in India in order to build 'FedNow' – a new interbank real-time gross settlement service (RTGS) for faster digital payments in the U.S.

Highlights:

- Google said after learning its lessons from the India digital payments market, it offered specific suggestions to the Fed Reserve to “support real-time low-value and high-value payments, use standardized messaging protocols with extended metadata, and provide clear standards for an Application Programming Interface (API) layer that enables licensed non-financial institution third parties to access and submit requests into this payment system.

UPI:

- National Payments Corporation of India (NPCI) deployed a real-time payment system Unified Payment Interface (UPI) in 2016.
- First, UPI is an interbank transfer system [there are now over 140 member banks, after initially launching with 9 participating banks].
- Second, it is a real-time system.
- Third, it is 'open' meaning technology companies can build applications that help users directly manage transfers into and out of their accounts held at banks.

Success:

- UPI was thoughtfully planned and critical aspects of its design led to its success.
- After just three years, the annual run rate of transactions flowing through UPI is about 10% of India's GDP, including 800 million monthly transactions valued at \$19 billion.
- According to the latest Worldline report titled 'India Digital Payments Report – Q3 2019', the total volume of UPI transactions in Q3 2019 in India touched 2.7 billion, a whopping 183% rise from a year ago. In value, UPI clocked ₹4.6 trillion, up 189% from Q3 2018.
- According to a recent ASSOCHAM-PWC study, digital payments in India will more than double to \$135.2 billion in 2023 from \$64.8 billion this year, with a compounded annual growth of 20.2%.

11. National Economic Census

Why in News?

- The Seventh Economic Census was launched in the National Capital Territory of Delhi. Delhi is the 26th state where the survey has been launched, while the process is already on in 20 states and 5 UTs.

National Economic Census:

- In 1976, GoI launched a planning scheme called Economic Census and Surveys.
- It is the census of the Indian economy through counting all entrepreneurial units in the country which involved in any economic activities of either agricultural or non-agricultural sector which are engaged in production and/or distribution of goods and/or services not for the sole purpose of own consumption.
- It provides detailed information on operational and other characteristics such as number of establishments, number of persons employed, source of finance, type of ownership etc.

- This information used for micro level/ decentralized planning and to assess contribution of various sectors of the economy in the GDP.

Past Censuses:

- Total Six Economic Censuses (EC) has been conducted till date.
- In 1977 CSO conducted First economic census in collaboration with the Directorate of Economics & Statistics (DES) in the States/UTs.
- The Second EC was carried out in 1980 followed by the Third EC in 1990. The fourth edition took place in 1998 while the fifth EC was held in 2005.
- The Sixth edition of Economic Census was conducted in 2013.

12. National Broadband Mission

Why in News?

- The Union Minister for Communications, Law & Justice and Electronics and Information Technology launched the National Broadband Mission.

National Broadband Mission (NBM):

- The vision of the NBM is to fast-track growth of digital communications infrastructure, bridge the digital divide, facilitate digital empowerment and inclusion and provide affordable and universal access to broadband for all.
- A key objective of the Mission is to provide broadband to all villages by 2022.
- Facilitate universal and equitable access to broadband services across the country and especially in rural and remote areas.
- Laying of incremental 30 lakhs route km of Optical Fiber Cable (OFC) and increase in tower density from 0.42 to 1.0 tower per thousand of population by 2024.
- Significantly improve quality of services for mobile and internet.
- Develop innovative implementation models for Right of Way (RoW) and to work with States/UTs for having consistent policies pertaining to expansion of digital infrastructure including for RoW approvals required for laying of OFC.
- Develop a Broadband Readiness Index (BRI) to measure the availability of digital communications infrastructure and conducive policy ecosystem within a State/UT.
- Creation of a digital fiber map of the digital communications network and infrastructure, including Optical Fiber Cables and towers across the country.
- Investment from stakeholders of USD 100 billion (Rs 7 Lakh Crore) including Rs 70,000 crore from Universal Service Obligation Fund (USOF).

- Address policy and regulatory changes required to accelerate the expansion and creation of digital infrastructure and services.
- Work with all stakeholders including the concerned ministries/departments/agencies and the Ministry of Finance for enabling investments for the Mission.

Internet usage in India:

- The government has introduced this new broadband mission to meet the ever-growing needs for the internet.
- Right now, in India, an average person is consuming 9.77GB data per month which is up by a staggering 1120% compared to 2014.
- Telecom subscribers are also growing at a rapid pace in the country.
- India had just 251.59 million internet subscribers back in 2014, however, the number saw an increase of 165% and reached 665.31 in 2019.
- Mobile subscribers were just 907.42 in 2014 and it has been increased to 1173.75 in 2019.

13. Asia's Biggest Surge Pool

Why in News?

- Stage is all set for the filling of the Asia's biggest surge pool (open to sky) with the waters of the Kaleshwaram Lift Irrigation Project.

Surge Pool:

- Surge pool or tank is a water storage device used as pressure neutralizer in hydropower water conveyance system to resist excess pressure rise and pressure drop conditions.
- It is a standpipe or storage reservoir at the downstream end of a closed aqueduct, feeder, dam, barrage pipe to absorb sudden rises of pressure, as well as to quickly provide extra water during a brief drop in pressure.

Kaleshwaram Surge Pool:

- Constructed on the hillocks on the outskirts of Thippapur village in Illanthakunta mandal, the surge pool measures 92 meters deep and 56 meters diameter and would store one tmc feet of water.
- Water would be lifted by using four motors to the Ananthagiri Reservoir.
- The water would reach the surge pool from Mid Manair Dam — Sri Raja Rajeshwara reservoir — by travelling 3.4 km through gravity canal and 7.6 km through tunnel.

- Incidentally, the open-to-sky Surge pool was constructed in a record time of 13 months at a cost of ₹ 2,700 crore.
- The four motors in this pool would use 106 MWs of power and accordingly a 440 KVA sub-station was constructed at the vicinity of the pool.

Kaleshwaram Lift Irrigation Project:

- Kaleshwaram Lift Irrigation Project (KLIP) claimed as the world's largest multi-stage and multi-purpose lift irrigation scheme,.
- The Kaleshwaram project is an off-shoot of the original Pranahitha-Chevella Lift Irrigation Scheme taken up by the government in 2007 when Andhra Pradesh was not divided.
- It is aimed to make Telangana drought proof by harnessing the flood waters of the Godavari.
- Waters of the Godavari will be tapped by reverse pumping and storage, thereby facilitating agriculture on over 38 lakh acres.
- It would help rejuvenate thousands of tanks, providing water for industries, and supplying drinking water to Hyderabad and Secunderabad by creating a series of storage tanks and a network of pipelines.

14. Special Economic Zone (SEZ)

Why in News?

- Tripura gets its first SEZ, at Paschim Jalefa, Sabroom, South Tripura District.
- Sarbroom SEZ will be an agro-based food processing sector specified economic zone which is about 130 km away from Agartala.

Sabroom SEZ Project:

- As per the government notification, the entire investment project will cost around 1550 crore.
- Tripura Industrial Development Corporation (TIDC) Ltd will be the developer of the SEZ in the area.
- According to the government's estimate, this SEZ will generate 12,000 skilled jobs and employment.
- There will be several industries participate in the SEZ including agri-food processing, textile and apparel industries, rubber-based industries and bamboo industry.

Significance:

- The government believes that Sabroom SEZ will open up new avenues to attract private firms to invest in the region. Since the area is close to the Chittagong Port and Feni River in South Tripura, it will provide more overseas business opportunities to the native people.
- The government will provide 100 percent income tax relief on export.
- This exemption will be given for the first five years under Section 10AA of the Income Tax Act (ITA). Not only this, there will be a 50 per cent exemption to be provided for the next five years and fifty per cent of ploughed back export profit for the next five years.

SEZs:

- A Special Economic Zone (SEZ) is a specifically delineated duty-free enclave and shall be deemed to be foreign territory for the purposes of trade operations and duties and tariffs in India.
- It is an area within a country where there are different trade and business laws from the remaining regions of the country.
- SEZs are created to attract more investment, generate employment and also to better administer these areas.
- With a view to overcome the shortcomings experienced on account of the multiplicity of controls and clearances; absence of world-class infrastructure, and an unstable fiscal regime and with a view to attract larger foreign investments in India, the Special Economic Zones (SEZs) Policy was announced in April 2000.
- The Special Economic Zones Act, 2005, was passed by Parliament in 2005.
- After extensive consultations, the SEZ Act, 2005, supported by SEZ Rules, came into effect in 2006.

The Main Objectives of the SEZ Act are:

- Generation of additional economic activity
- Promotion of exports of goods and services
- Promotion of investment from domestic and foreign sources
- Creation of employment opportunities
- Development of infrastructure facilities

Facilities and Incentives for SEZs:

- Duty-free import/domestic procurement of goods for development, operation and maintenance of SEZ units.

- 100% Income tax exemption on export income for SEZ units under the Income Tax Act for first 5 years, 50% for next 5 years thereafter and 50% of the ploughed back export profit for next 5 years. (Sunset Clause for Units will become effective from 2020).
- Exemption from Minimum Alternate Tax (MAT).
- Exemption from Central Sales Tax, Exemption from Service Tax and Exemption from State sales tax. These have now subsumed into GST and supplies to SEZs are zero-rated under the IGST Act, 2017.
- Single window clearance for Central and State level approvals.
- SEZ developers also receive many such incentives and benefits.
- **Currently, there are more than 200 operational SEZs in India.**

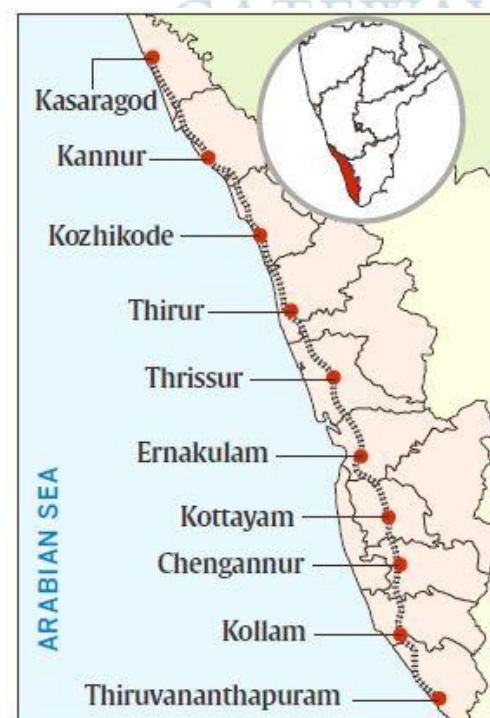
15. Silver Line Railway Project

Why in News?

- The Ministry of Railways granted in-principle approval for the ‘Silver Line’ project, a proposal of the Kerala government that involves laying of semi high-speed trains between the two corners of the state of Kerala.

The Silver Line project:

- The Silver Line project aims to connect major districts and towns with semi high-speed trains that will run on their own tracks.



- The 532-km corridor is projected to be built at a cost of Rs 56,443 crore. Trains would complete the journey at four hours instead of 12, with a maximum speed of 200 km/h.
- The corridor will be built away from the existing line between Thiruvananthapuram and Thrissur.
- The semi high-speed trains will traverse through 11 of the state's 14 districts, Alappuzha, Wayanad and Idukki being the exceptions.
- There are also plans to connect the corridor with the international airports at Kochi and Thiruvananthapuram. The project is scheduled to be commissioned by 2024.

Significance:

- Kerala's road networks are clogged and experience dense traffic during peak hours.
- According to a data, less than 10% of the state's roads handle nearly 80% of the traffic.
- This also gives rise to accidents and casualties; in 2018, Kerala recorded 4,259 deaths and 31,687 grievous injuries.
- Experts have been demanding faster transportation options including railways and waterways. The current railway network is congested with a large number of trains, level crossings and sharp curves. The project will result in direct and indirect employment opportunities for 50,000 people, and the project once completed would create direct employment for at least 11,000 people.

Implementation:

- The Kerala Rail Development Corporation (K-Rail), a joint venture between the Ministry of Railways and the Kerala government to execute projects on a cost-sharing basis, will be the nodal agency. The government is believed to be looking at external funding agencies.
- An initial investment is likely to be made by K-Rail for acquiring land. A Detailed Project Report (DPR) will be commissioned soon.

16. National Food Security Mission (NFSM) – Oilseeds and Oil Palm

Why in News?

- The Government is implementing the National Food Security Mission (NFSM) – Oilseeds and Oil Palm to increase production of oilseeds and domestic availability of edible oils.

NFSM – Oilseeds and Oil Palm:

- This scheme is under implementation in 29 States and has three subcomponents namely, Oilseeds, Oil palm and Tree Borne Oilseeds (TBOs).

- The main objective is to increase oilseeds production & productivity and area expansion under oil palm & TBOs cultivation.

Objectives of NFSM:

- Increasing the production of rice, wheat, pulses, coarse cereals (maize and barley) and nutri-cereals through area expansion and productivity enhancement in a sustainable manner in the identified districts of the country.
- Restoring soil fertility and productivity at the individual farm level.
- Enhancing farm level economy (i.e. farm profits) to restore confidence amongst the Farmers.

Oilseeds Agriculture in India:

- India is one of the major oilseeds grower and importer of edible oils.
- India's vegetable oil economy is the world's fourth-largest after USA, China & Brazil.
- Oilseeds account for 13% of the Gross Cropped Area, 3% of the Gross National Product and 10% value of all agricultural commodities.
- The diverse agro-ecological conditions in the country are favourable for growing 9 annual oilseed crops, which include 7 edible oilseeds (groundnut, rapeseed & mustard, soybean, sunflower, sesame, safflower and niger) and two non-edible oilseeds (castor and linseed).
- Oilseeds cultivation is undertaken across the country in about 27 million hectares mainly on marginal lands, of which 72% is confined to rain-fed farming.
- During the last few years, the domestic consumption of edible oils has increased substantially and has touched the level of 18.90 million tonnes in 2011-12 and is likely to increase further.

- ❖ A substantial portion of our requirement of edible oil is met through import of palm oil from Indonesia and Malaysia.

17. Operation Twist

Why in News?

- RBI is set to conduct 'Operation Twist' i.e. it will buy and sale government securities worth ₹10,000 crore each under its open market operations – a move aimed at managing the yields.

Significance:

- Experts had suggested unconventional steps like this operation by the central bank as policy rate cuts are unable to bring down the bank lending rates proportionately.

Operation Twist:

- Operation Twist is a move taken by U.S. Federal Reserve in 2011-12 to make long-term borrowing cheaper.
- It first appeared in 1961 as a way to strengthen the U.S. dollar and stimulate cash flow into the economy. It is the name given to a Federal Reserve monetary policy operation that involves the purchase and sale of bonds.
- The operation describes a form of monetary policy where the bank buys and sells short-term and long-term bonds depending on their objective.
- The name “Operation Twist” was given by the mainstream media due to the visual effect that the monetary policy action was expected to have on the shape of the yield curve.
- If we visualize a linear upward sloping yield curve, this monetary action effectively “twists” the ends of the yield curve, hence, the name Operation Twist.
- To put another way, the yield curve twists when short-term yields go up and long-term interest rates drop at the same time.

Open Market Operations:

- Open market operations are the sale and purchase of government securities and treasury bills by RBI or the central bank of the country.
- The objective of OMO is to regulate the money supply in the economy.
- When the RBI wants to increase the money supply in the economy, it purchases the government securities from the market and it sells government securities to suck out liquidity from the system. OMO is one of the tools that RBI uses to smoothen the liquidity conditions through the year and minimise its impact on the interest rate and inflation rate levels.

18. Railway unveils a New Signalling System

Why in News?

- Modernization of the signalling system in the Indian railways.

Highlights:

- The Railways will roll out its new signalling system from April 2020 onwards.
- The modernization of the signalling system will include implementation of technologies such as the automatic train protection system that helps in adhering to permissible speed limits without driver intervention and the 4G-based mobile train radio communication system, which can be used for emergency communications.

- A centralized traffic control system similar to the air traffic control system is being envisaged.
- A remote diagnostic and predictive maintenance system will also be implemented to supplement the proposed upgrade.
- The implementation will begin with four sections of about 640 route kilometres with an estimated cost of around ₹1,810 crores.
- This is expected to be a pilot project for pan-India implementation of the nearly ₹78,000 crore project to modernize the signalling system.

Significance:

- The new signalling system is expected to make train travel faster and safer.
- The implementation of these new systems will also improve safety, reduce congestion, increase line capacity and improve punctuality.
- The system will act as a pilot for signal modernization across the 70,000 km network of the Railways.

19. SDG India Index & Dashboard 2019–20

Why in News?

- NITI Aayog will launch the second edition of the Sustainable Development Goals (SDG) India Index, which documents the progress made by India's States and Union Territories towards implementing the 2030 SDG targets.

Highlights:

- The SDG India Index and Dashboard 2019–20 have been developed in collaboration with the Ministry of Statistics and Programme Implementation (MoSPI), the United Nations in India, and the Global Green Growth Institute.
- NITI Aayog has the mandate of overseeing the adoption and monitoring of SDGs in the country, at the national and sub-national level.
- The SDG India Index, whose first edition was launched in December 2018, was the first tool developed by any large country to monitor the progress towards achieving SDGs at the sub-national level.
- The SDG India Index and Dashboard 2019 tracks the progress of and ranks all States and UTs on 100 indicators drawn from MoSPI's National Indicator Framework, comprising 306 indicators.

- It indicates where the country and its States and UTs currently are on SDG implementation, and charts the distance to be travelled to reach the SDG targets.
- The Index covers 16 out of 17 SDGs and a qualitative assessment on Goal 17. This marks an improvement over the 2018 Index, which covered only 13 goals.

20. Finance Minister launches eBक्रय for online auction of assets attached by Banks

Why in News?

- Finance Minister Nirmala Sitharaman discussed banking issues with chiefs of Public Sector Banks (PSBs), chief executive of Indian Banks' Association and representatives of leading private sector banks.

eBक्रय:

- It is a common e-auction platform launched today by the Finance Minister.
- It has been launched to enable online auction of attached assets transparently and cleanly for improved realisation of value.
- The platform is equipped with property search features and navigational links to all PSB e-auction sites.
- It provides single-window access to information on properties up for e-auction as well as facility for comparison of similar properties.
- It contains photographs and videos of uploaded properties.

Steps for Enhancing Digital Transactions:

- In order to strengthen the digital payment eco-system and move towards less-cash economy, the Finance Minister in her budget speech of 2019-20 had, inter alia, announced that business establishments with annual turnover of more than Rs. 50 crore shall offer low cost digital modes of payment (such as BHIM UPI, UPI QR Code, Aadhaar Pay, Debit Cards, NEFT, RTGS, etc.) to their customers, and no charge or merchant discount rates (MDR) shall be imposed on customers as well as merchants.
- To facilitate implementation of the announcement, it was decided as under:
- Department of Revenue (DoR) will notify RuPay and Unified Payments Interface (UPI) as the prescribed mode of payment for undertaking digital transactions without any MDR.
- All companies with a turnover of Rs. 50 crore or more shall be mandated by DoR to provide the facility of payment through RuPay Debit card and UPI QR code to their customers. All banks will start a campaign to popularise RuPay Debit card and UPI.

5. GEOGRAPHY & ENVIRONMENT

1. Jeholbaatar Kielanae

Why in News?

- Researchers have unearthed well-preserved middle ear bones from a new species of an extinct rodent that lived 145-66 million years ago in north-eastern China.
- This finding may lead to better understanding of the evolution of hearing.

Jeholbaatar Kielanae:

- The study looked at fossils of the extinct rodent-like mammal — Jeholbaatar kielanae — at Jehol Biota of China, and noted that these animals had a middle ear that is distinct from those of its relatives.
- The evolution of the rodent's bones and muscles involved in hearing may have been driven by specialisation for hearing.
- The fossil clues provide solid evidence of the morphology and formation of the inner ear bones, which are fully detached from the lower jaw.
- In these extinct mammals, the evolution of the middle ear may have probably been triggered by functional constraints on the bones and muscles involved in feeding.

2. Antarctic Treaty System (ATS)

Why in News?

- Reports have claimed that compared to last year, 40 per cent more tourists, numbering about 80,000, are expected to visit Antarctica, the least visited continent in the world.

Highlights:

- All human activities on the continent are regulated by the Antarctic Treaty, which was signed in 1960.
- The treaty entered into force in 1961 and currently has 54 parties. India became a member of this treaty in 1983. For the purposes of the treaty system, Antarctica is defined as all of the land and ice shelves south of 60°S latitude.
- The treaty sets aside Antarctica as a scientific preserve, establishes freedom of scientific investigation, and bans military activity on the continent.
- The treaty was the first arms control agreement established during the Cold War. Since September 2004, the Antarctic Treaty Secretariat headquarters has been located in Buenos Aires, Argentina.

Regulating tourism:

- Tourism in Antarctica started around the 1950s, starting out with a few hundred visitors annually to over 38,000 per year in 2015-2016.
- Working within the mechanism of this treaty is the International Association of Antarctica Tour Operators (IAATO), a body which was founded in 1991 by seven tour operators to promote safe and environmentally responsible travel in Antarctica.
- While IAATO maintains that the tourism conducted under its banner has virtually no environmental impact on the region, the IAATO rules and guidelines are not mandatory or binding.

Melting Antarctica:

- In September, a report on oceans released by the IPCC said that between 2006 and 2015, the Antarctic ice sheet lost about 155 billion tonnes of mass on average every year.
- This ice melt from Antarctica likely contributed to sea-level rises. The main sources of environmental damage to the continent include planet-wide impacts such as global warming, ozone layer depletion, impacts of fishing and hunting (of whales and seals) and lastly, the impact of visitors which includes scientists and Tourists.

3. Blue Flag Certification for Beaches

Why in News?

- The MoEFCC has embarked upon a programme for 'Blue Flag' Certification for select beaches in the country.

Blue Flag Certification:

- This Certification is accorded by an international agency "Foundation for Environment Education, Denmark" based on 33 stringent criteria in four major heads i.e.
 1. Environmental Education and Information,
 2. Bathing Water Quality,
 3. Environment Management and Conservation and
 4. Safety and Services in the beaches.
- It started in France in 1985 and has been implemented in Europe since 1987, and in areas outside Europe since 2001, when South Africa joined.
- Japan and South Korea are the only countries in South and south-eastern Asia to have Blue Flag beaches. Spain tops the list with 566 such beaches; Greece and France follow with 515 and 395, respectively.

Beaches identified in India:

- 13 pilot beaches that have been identified for the certification, in consultation with concerned coastal States/UTs, are Ghoghala Beach (Diu), Shivrajpur beach (Gujarat), Bhogave (Maharashtra), Padubidri and Kasarkod (Karnataka), Kappad beach (Kerala), Kovalam beach (Tamil Nadu), Eden beach (Puducherry), Rushikonda beach (Andhra Pradesh), Miramar beach (Goa), Golden beach (Odisha), Radhanagar beach (Andaman & Nicobar Islands) and Bangaram beach (Lakshadweep).
- Rushikonda beach in Andhra Pradesh also features in the list of 13 pilot beaches, for development of facilities and infrastructure accordingly.
- The Chandrabhaga beach on the Konark coast of Odisha is the first in India to get the Blue Flag certification.

4. Carbon Market

Why in News?

- Almost halfway through the climate conference in Madrid, one big thing it had to resolve – disagreements over setting up a new carbon market – remains contentious as ever.

The Market Mechanism:

- Under the Paris Agreement, every country has to take action to fight climate change. These actions need not necessarily be in the form of reduction in greenhouse gas emissions, which can constrain economic growth. India, for example, has said it would reduce its emissions per unit of GDP.
- Only the developed countries have included absolute emission cuts in their action plans. Yet, there is scope for absolute emissions reductions in developing countries too.
- For example, a brick kiln in India can upgrade its technology and reduce emissions. But because India does not need to make absolute reductions, there is no incentive to make this investment. It is to deal with situations like these that the carbon market mechanism is conceived. Markets can potentially deliver emissions reductions over and above what countries are doing on their own.
- For example, if a developed country is unable to meet its reduction target, it can provide money or technology to the brick kiln in India, and then claim the reduction of emission as its own. Alternatively, the kiln can make the investment, and then offer on sale the emission reduction, called carbon credits. Another party, struggling to meet its own targets, can buy these credits and show these as their own.

- Carbon markets also existed under the Kyoto Protocol, which is being replaced by the Paris Agreement next year. The market mechanisms being proposed under the Paris Agreement are conceptually not very different, but are supposed to have more effective checks and balances, and monitoring and verification processes.

How to set up a Market:

- The provisions relating to setting up a new carbon market are described in Article 6 of the Paris Agreement. These are enabling provisions that allow for two different approaches of carbon trading, more or less on the lines described earlier.
- Article 6.2 enables bilateral arrangements for transfer of emissions reductions, while ensuring that they do not double-count the reductions. Article 6.4 talks about a wider carbon market in which reductions can be bought and sold by anyone.
- Article 6.8 provides for making ‘non-market approaches’ available to countries to achieve targets. It is not yet very clear what these approaches would constitute, but they could include any cooperative action, like collaboration on climate policy or common taxation, that are not market-based.

What is Contentious?

- The main tussle is over two or three broad issues — what happens to carbon credits earned in the Kyoto regime but not yet sold, what constitutes double-counting, and transparency mechanisms to be put in place.
- Developing countries have several million unsold CERs (certified emission reductions), each referring to one tonne of carbon dioxide-equivalent emission reduced, from the Kyoto regime. Under the Kyoto Protocol, only developed countries had the obligation to reduce emissions. In the initial phase, some of these were interested in buying CERs from projects in India or China, which were not obliged to make reductions.
- In the last few years, several countries walked out of the Kyoto Protocol, and those that remained did not feel compelled to fulfil their targets. The second commitment period of the Kyoto Protocol (2012-20) never came into force. As the demand for CERs crashed, countries like India were left with projects generating CERs with no one to buy them.
- India has about 750 million unsold CERs and, along with other similarly placed countries, wants these credits to be valid in the new mechanism too.
- Developed countries are opposing it on the ground that the rules and verification procedures under the Kyoto Protocol were not very robust; they want the new mechanism to start with a clean slate.

- The second issue is that of double counting, or corresponding adjustment. The new mechanism envisages carbon credits as commodities that can be traded multiple times among countries or private parties. It is important to ensure that in this process, credits are not counted at more than one place; whoever sells carbon credits should not simultaneously count these as emissions it has reduced.
- The developing countries argue that the country that reduced emissions should be able to show it even after selling the credits, and that adjustments should be made only for subsequent transfers, if any.

Evaluation:

- Carbon markets are not essential to the implementation of Paris Agreement.
- But with the world doing far less than what is required to prevent catastrophic impacts of climate change, the markets can be an important tool to close the action gap.

5. Sukapaika River

Why in News?

- Embankments have killed Odisha's Sukapaika river that was the lifeline of over 0.5 million people.

Sukapaika:

- Sukapaika is one of the several distributaries of the mighty Mahanadi river in Odisha.
- It branches away from the Mahanadi at Ayatpur village in Cuttack district and flows for about 40 kilometres (km) before rejoining its parent river at Tarapur in the same district.
- In the process, it drains a large landmass comprising over 425 villages.
- However, the river is undergoing sudden barrenness.

Why is the River Diminishing?

- The problem has its roots in 1952, when the state government blocked the starting point of the Sukapaika with an embankment to save the villages around it from floods.
- Subsequently, in 1957, two major projects — Hirakud Dam in Sambalpur district and Naraj barrage at Cuttack — were built upstream on the Mahanadi, ostensibly to control floods in it. However, the embankment on the Sukapiaka was not removed.

This left the distributary totally dependent on rainwater.

The neglect has hit the 0.5 million people residing in the villages over the next half a century.

- The riverbed has suffered erosion and it is full of hyacinth.

6. National Aquifer Mapping and Management Programme

Why in News?

- The Central Ground Water Board (CGWB) is implementing the ‘National Aquifer Mapping and Management Programme’ (NAQUIM) for aquifer mapping in the country including in areas which have recorded a high depletion of groundwater, in phases.

National Aquifer Mapping and Management Programme:

- Aquifer mapping refers to groundwater resource mapping.
- The NAQUIM was launched in 2012, with CGWB as the executing body.
- The Programme aims to cover more than 25 million square kilometres that have been delineated “hydrogeologically mappable”.
- Since groundwater is a key component in a number of programmes launched by various Union government ministries, a carefully-crafted convergence of NAQUIM outputs can help in optimising the benefits. One of the major objectives of NAQUIM is to promote participatory groundwater management.

7. IUCN study on De-oxygenation of the Oceans

Why in News?

- The world’s oceans have less oxygen today than they did up to, say, 1950 or 1960, according to a New Study.

Highlights:

- The report is the work of 67 scientists from 17 countries around the world.
- The IUCN, the global authority on the status of the natural world and the measures needed to safeguard it, released the study at the United Nations Climate Change Conference currently underway in Madrid.
- According to the findings of the study, the levels of oxygen in oceans fell by around 2 per cent from 1960 to 2010.
- The deoxygenation of the oceans occurred due to climate change and other human activities (such as the nutrient runoff from farm fertilizers into waterways), the report said.

Threats posed by Deoxygenation:

- In many parts of the world, including along the western coast of the United States, fish have been dying en masse – a clear illustration of the ways in which deoxygenation is choking the oceans.

- Also, the loss of oxygen in the oceans can affect the planetary cycling of elements such as nitrogen and phosphorous which are essential for life on Earth.
- As oceans lose oxygen, they become more acidic, a phenomenon that has resulted in some places in shellfish having their shells degraded or dissolved – the so called “osteoporosis of the sea”.
- Apart from their declining oxygen content, oceans have, since the middle of the 20th century, absorbed 93 per cent of the heat associated with human-caused greenhouse gas emissions, leading to mass bleaching of coral reefs.
- Also, since warmer water occupies more space than cooler water, NASA estimates that this is the reason for roughly a third of the rise in sea levels.

8. Green Window for Green Energy Finance

Why in News?

- The Indian Renewable Energy Development Agency (IREDA) is planning to set up a dedicated “Green Window to serve the unserved segments of renewable energy.”

Highlights:

- The IREDA Green Window would provide a significant boost to the renewable energy market.
- This is a new financing approach to boost investment in clean energy.
- The Indian Renewable Energy Development Agency (IREDA), the country’s premier public finance institution, is considering an allocation of \$20 million in seed funding to set up its pioneering “Green Window” aimed toward catalysing private investment and expanding the Indian clean energy market.
- A green window is a financing approach designed to leverage limited government funds to attract private capital to achieve climate and clean energy goals. The IREDA Green Window builds on the globally successful green bank model.

Green Windows:

- Green windows, like green banks, are public entities created to work with the private sector to increase investment in green energy and bring clean energy financing into the mainstream.
- They are innovative and new tools that have been successful in the United Kingdom, Australia, Japan, Malaysia and the United States.
- India is one of the top three nations leading global renewable energy growth.

- As of October 2019, India's installed renewable capacity has already met about half of its 2022 target of 175 GW.
- Achieving the 175 GW goal would increase green energy access for millions of Indians and, additionally, could create up to 1 million job opportunities for over 300,000 workers in the country by 2022.

IREDA:

- IREDA is India's leading financial institution dedicated to clean energy expansion.
- Since its founding under the Ministry of New and Renewable Energy in 1987, IREDA has financed the largest share of renewable energy projects in India.
- It is a Mini-Ratna (Category 1) enterprise. It was established as a non-banking financial institution engaged in promoting, developing and extending financial assistance for setting up projects relating to new and renewable sources of energy and energy efficiency/conservation. Its motto is: "Energy for Ever".

9. BASIC Ministerial Joint Statement at UNFCCC COP25

Why in News?

- The Ministers of the Brazil, South Africa, India and China group (BASIC) met during the 25th Conference of Parties to the United Nations Framework Convention on Climate Change (COP25) in Madrid, Spain.

Highlights:

- The BASIC meeting was chaired by the Chinese Vice Minister of Ecology and Environment.
- The Ministers pledged their full support to the Chilean COP Presidency and expressed their gratitude to the Kingdom of Spain for hosting the meeting.
- They noted that the central mandate of COP25 is to prepare the way for the full implementation of the Paris Agreement in the post-2020 period building upon the climate action efforts under the Convention and its Protocol.
- The Ministers underlined that COP25 should achieve the following outcomes:
 - ✓ To conclude the negotiations related to article 6 of the Paris Agreement;
 - ✓ To mandate a 2-year Work Programme under SBI to assess the pre-2020 progress and gaps, with a view to making the necessary arrangements to fill those gaps;
 - ✓ To urge developed country parties to fulfil their commitments on providing finance, technology development and transfer and capacity-building support to developing countries;

- ✓ To interpret and implement the provisions of the Paris Agreement in a holistic and faithful manner.
- The Ministers highlighted that BASIC countries are implementing ambitious climate actions based on their national circumstances and have achieved great progress, contributing significantly to global efforts in combating climate change. This is notwithstanding the insufficient and uneven progress of their domestic development and the multiple challenges all BASIC countries face, including in poverty eradication and achieving socio-economic development and environment protection.
- In 2018, China reduced carbon dioxide emissions per unit of GDP by 45.8% from 2005 levels, as well as increased the share of non-fossil fuels in primary energy consumption to 14.3%.
- South Africa has recently implemented a carbon tax and announced a massive renewable energy program in its latest electricity plan.
- India has already achieved a 21% reduction in emission intensity of GDP in 2014 compared to 2005 levels, thereby achieving its pre-2020 voluntary target.
- In 2015, Brazil had already achieved a 58% emission reduction relative to the business as usual scenario set for its NAMAs, thereby overachieving its target of 36%-39% reductions set for 2020.

10. National Afforestation Programme

Why in News?

- The Ministry of Environment, Forest and Climate Change (MoEFCC) is implementing plantation/afforestation schemes in the forest areas with participatory approach.
- The plantation species under the schemes is selected by the implementing agencies/the members of Joint Forest Management Committees (JFMC) on the basis of their needs, ecological conditions and other local factors in consultation with the Forest Department.

Conservation and development of Forest:

- The conservation and development of forest primarily involves three strategies – afforestation through natural/artificial regeneration, protection and management.
- The ministry is implementing three major schemes for development of forest areas e. National Afforestation Programme (NAP) scheme, National Mission for a Green India (GIM) and Forest Fire Prevention & Management Scheme (FFPM).

- While NAP is being implemented for afforestation of degraded forest lands, GIM aims at improving the quality of forest and increase in forest cover besides cross sectoral activities on landscape basis.
- The FFPM takes care of forest fire prevention and management measures.
- For scientific management of forests, the States prepare management plan called Working Plan which highlights various activities to be undertaken in a forest division for effective management of forest. The working plan is approved by the Ministry.
- Besides, the funds collected under Compensatory Afforestation Fund Management and Planning Authority (CAMPA), as compensatory levies from states inter-alia, is also used in plantation activity including compensatory afforestation by States/UTs.
- The overall objective of the National Afforestation Programme (NAP) scheme is ecological restoration of degraded forests and to develop the forest resources with peoples' participation, with focus on improvement in livelihoods of the forest-fringe communities, especially the poor.

11. Climate Change Performance Index (CCPI) 2020

Why in News?

- India, for the first time, ranks among the top 10 countries in this year's Climate Change Performance Index (CCPI). Last year, India was ranked 12th.

CCPI:

- The Climate Change Performance Index (CCPI) is an annual publication by Germanwatch, NewClimate Institute and Climate Action Network Europe.
- Its aim is to put political and social pressure on those countries that have, until now, failed to take ambitious action on climate protection, and to highlight those countries with best practice climate policies. It evaluates the climate protection performance of 60 countries, responsible for over 90% of global energy-related CO₂ emissions.

India's Performance:

- The report states that the current level of per capita emissions and energy use in India ranks ninth in the higher category.
- The Indian government has yet to develop a roadmap for the phase-out of fossil fuel subsidies that would consequently reduce the country's high dependence on coal.
- In short, more stringent laws and amendments should be made to achieve Climate Change Targets.

Global scene:

- The 2015 accord saw nations agree to work towards limiting global temperature rises to “well below” two degrees Celsius above pre-industrial levels.
- The U.S. and Saudi Arabia are among major polluters showing “hardly any signs” of reducing their greenhouse gas production.
- While climate performance varied greatly – even within the EU, with Sweden leading the way – the report found that none of the countries surveyed were currently on a path compatible with the Paris climate goals.
- China, the world’s largest single emitter, was found to have taken “medium action” due to its high investment in renewables.

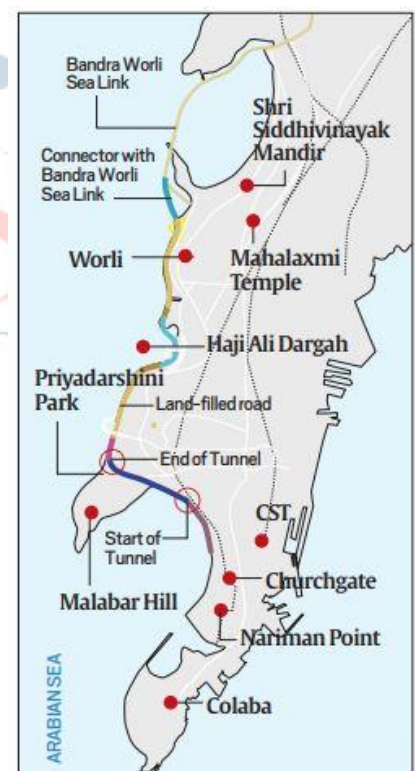
12. Mumbai’s Coastal Road Project

Why in News?

- The Supreme Court stayed a Bombay High Court order that had quashed Coastal Regulation Zone clearance granted to the southern part of Mumbai’s coastal road project.

Mumbai’s Coastal Road project:

- The Coastal Road is an under-construction 8-lane, 29.2-km long freeway that would run along Mumbai’s western coastline connecting Marine Lines in the south to Kandivali in the north.
- The Coastal Road is projected to be used by 130,000 vehicles daily and is expected to reduce travel time between South Mumbai and the Western Suburbs from 2 hours to 40 minutes.
- The estimated cost of the project is ₹12,000 crore (US\$1.7 billion).



Dispute:

- Environmentalists, activists and fishermen opposed the project.
- Their main contention was that the BMC is implementing the project with faulty and ‘illegal’ green clearances accorded in May 2017 by the MoEFCC.

- They have claimed the project lacks a mandatory prior environmental clearance under the Environmental Impact Assessment (EIA) notification of 2006.
- Activists had demanded that a biodiversity study of the Mumbai coast is also required before going ahead.
- They also called a National Institute of Oceanography (NIO) report flawed as it relied on only 14 days' pre-monsoon data. An EIA study requires impact in all four seasons to be studied, they contended. Fishermen also claimed that the reclamation will destroy shallow water fishing and increase the turbidity of water, and that the narrow gaps between pillars will hinder movement of Fishing Boats.

13. Houbara Bustard

Why in News?

- Pakistan has issued special permits to the Emir of Qatar and nine other members of the royal family to hunt the houbara bustard, an internationally protected bird species.

Houbara Bustard:

- IUCN Conservation status: Vulnerable
- Bustards are large, terrestrial birds that belong to several species, including some of the largest flying birds.
- The houbara bustard, which lives in arid climates, comes in two distinct species as recognised by the IUCN, one residing in North Africa (*Chlamydotis undulata*) and the other in Asia (*Chlamydotis macqueenii*).
- The population of the Asian houbara bustards extends from northeast Asia, across central Asia, the Middle East, and the Arabian Peninsula to reach the Sinai desert.
- Roughly 33,000 Asian houbara bustards and over 22,000 of the North African houbara bustards remain today.
- After breeding in the spring, the Asian bustards migrate south to spend the winter in Pakistan, the Arabian Peninsula and nearby Southwest Asia.

Threats:

- The main reasons for the houbara's decline are poaching, unregulated hunting, along with degradation of its natural habitat.
- The Pakistanis are not allowed to hunt the bird, the government invites Arab royals to hunt it every year.
- These people are granted permission to hunt for a sum of upto \$100,000.

14. Global Alliance on Health and Pollution (GAHP) Report, 2019

Why in News?

- India saw the most pollution deaths – about 2.3 million – a new report has found. Air pollution – both ambient and indoor – is one of the largest and most obvious types of pollution affecting global health.

Highlights:

- The report is titled Pollution and Health Metrics: Global, Regional and Country Analysis.
- It is released by the Global Alliance on Health and Pollution (GAHP).
- It seeks to update findings from The Lancet Commission on Pollution and Health, and provides a ranking of pollution deaths on global, regional and country levels.
- The report uses the most recent Global Burden of Disease data from the Institute of Health Metrics Evaluation. India is followed by China in the number of pollution deaths, with about 1.8 million. The United States makes the top 10 list with 1,97,000 pollution-related deaths, while ranking 132nd in the number of deaths per 100,000 people.
- The report includes three lists on pollution-induced deaths. India is the only country that features in the top 10 in all three lists.
- The top 10 countries with the most pollution deaths include both the world's largest and wealthiest nations, and some of its poorer ones.

15. European Green Deal

Why in News?

- After the failure at Madrid, the European Union has come up with an announcement on additional measures it would on climate change, called the European Green Deal.

European Green Deal:

- Two major decisions are at the heart of the European Green Deal. The Green Deal includes sectoral plans to achieve these two overall targets and proposals for the policy changes that would be required. They are:

Climate Neutrality:

- The EU has promised to bring a law, binding on all member countries, to ensure it becomes “climate neutral” by 2050.
- Climate neutrality, sometimes also expressed as a state of net-zero emissions is achieved when a country's emissions are balanced by absorptions and removal of greenhouse gases from the atmosphere.

- Absorption can be increased by creating more carbon sinks like forests, while removal involves technologies like carbon capture and storage.
- The EU is now the first major emitter to agree to the 2050 climate neutrality target. It has said it would bring a proposal by March next year on a European law to enshrine this target.

Emission Reduction:

- The second decision pertains to an increase in its 2030 emission reduction target.
- In its climate action plan declared under the Paris Agreement, the EU was committed to making a 40 per cent reduction in its emissions by 2030 compared to 1990 levels.
- It is now promising to increase this reduction to at least 50 per cent and work towards 55 per cent. Even at 40 per cent, the European Union had the most ambitious emission reduction targets among the developed countries.

Significance:

- The 28 EU member countries are together the third-largest emitter of greenhouse gases in the world after China and the United States,
- The EU also happens to be only one among major emitters to retain the 1990 baseline for emission cuts originally mandated under the Kyoto Protocol for all developed countries.
- The European Union, as a whole, has been doing better than other developed countries on reducing emissions. In 2010, the EU had pledged to reduce its emissions by at least 25 per cent by 2020 from 1990 levels.
- By 2018, it claimed to have achieved 23 per cent reduction in emissions. In terms of emission reductions, it probably is on track to meet the 2020 target, unlike any developed country outside the EU.

Lacunae:

- The EU, however, has not been fulfilling all its climate obligations.
- The Kyoto Protocol required the rich and developed countries to provide finance and technology to the developing countries to help them fight climate change.
- In those respects, there has been little climate money flowing out of the EU, especially for adaptation needs of developing countries, and transfer of new climate-friendly technologies.
- This is the reason why developing countries, like India and China, have been repeatedly raising the issue of unfulfilled obligations of developed countries in the pre-2020 period, that is covered by the Kyoto Protocol.

16. Bar-headed Goose

Why in News?

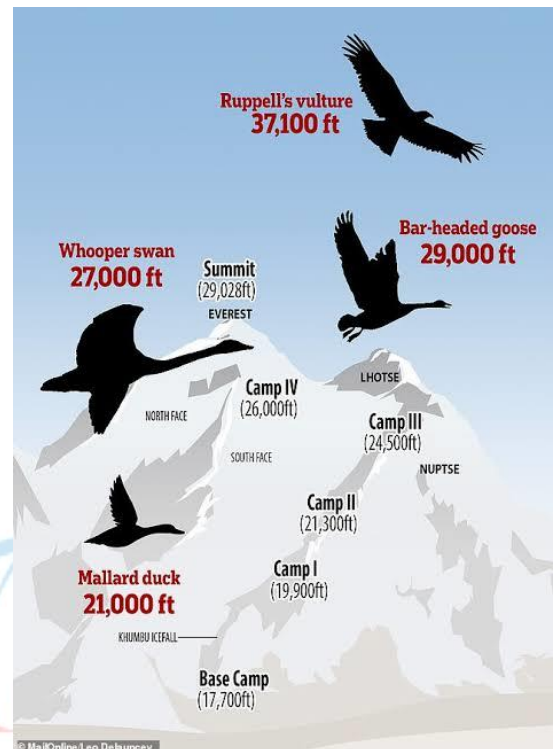
- A recent waterbird census being undertaken at the Tsokar wetlands in Ladakh, Jammu & Kashmir led to the rare sighting of a bar-headed goose.

Highlights:

- The sighting confirmed that the bar-headed goose breeds at Tsokar in Ladakh and winters at Pong Lake in Himachal Pradesh. So far, this is the shortest established migratory route for the species. Generally, this species covered very long distances.

Asian Waterbird Census:

- The AWC is a part of the International Waterbird Census (IWC), coordinated by Wetlands International.
- The census is conducted by in every January by volunteers across Asia and Australasia.
- It runs in parallel with other regional programmes of the International Waterbird Census in Africa, Europe, West Asia, the Neotropics and the Caribbean.
- The AWC was initiated in 1987 in the Indian subcontinent and now covers the entire East Asian – Australasian Flyway and a large part of the Central Asian Flyway.



Bar-headed Goose:

- The bar-headed goose is known to be one of the highest flying birds in the world.
- This bird is distinct from other geese in its genus because of the black bars on its head.
- They come to India and return to their homes by crossing the Himalayan ranges. The capacity of bar-headed geese to consume oxygen at such high altitudes (low oxygen environment) distinguishes this species from similar lowland waterfowl. Scientists have found that their blood cells contain a special type of hemoglobin (a blood protein) that absorbs oxygen very quickly at high altitudes. Also, their capillaries (small blood vessels) extend deeply into their muscles, thereby improving the transfer of oxygen to their muscle fibers.

- In the colder months, bar-headed geese live in low-lying swamps in northern India and Myanmar. During summer, they do their annual migration to the high mountain lakes and wetlands of central Asia.

17. Zero-Waste Alliance

Why in News?

- Kerala's capital city Thiruvananthapuram was recognised and awarded at the International Zero Waste Conference held in Malaysia in October this year.
- Apart from T'puram, Chennai is the other Indian city which is considered a Zero Waste city and is part of the International Zero Waste group.

Zero Waste Strategy:

- Zero waste is the conservation of all resources by means of responsible production, consumption, reuse and recovery of products, packaging and materials without burning, and with no discharges to land, water or air that threaten the environment or human health.
- This definition was adopted by the Zero Waste International Alliance in 2002.
- It means designing and managing products and processes to systematically avoid and eliminate the volume and toxicity of waste and materials, conserve and recover all resources, and not burn or bury them.

Zero Waste International Alliance (ZWIA):

- It is a group of environmental professionals dedicated to working towards a world without waste through public education and practical application of Zero Waste principles.
- By disseminating knowledge and providing support to its members ZWIA is promoting the implementation of Zero Waste Principles in various aspects.

TMC's Waste Management:

- The TMC's waste management plan was not the first of its far-sighted measures to manage waste. It brought in the green protocol for the first time in India to tackle plastic pollution.
- The protocol was first practiced at an international workshop on zero waste in Kovalam in 2000.
- Many institutions have adopted this initiative, including the state legislative assembly complex in the city.
- Thiruvananthapuram, with a population of approximately 0.9 million, is spread over an area of 214.86 square kilometres and is divided into 100 wards.

- The TMC introduced segregated collection of waste to ensure maximum efficiency.
- It formalised and institutionalised source-level composting and decentralised resource recovery as part of city waste management.
- The entire process of waste management is based on the principle of proximity which ensures the least amount of displacement of waste.
- TMC also organizes periodical collection drives for specific types of non-recyclable discards. The materials will be sent to the authorized recyclers.
- Bulk generators or commercial establishments, meanwhile, are required to take responsibility for their own waste. They include hotels, restaurants, commercial establishments, community halls, and institutions.

18. Drake Passage

Why in News?

- In a first, six rowers from four countries crossed the Drake Passage, in just under two weeks setting up a new Guinness World Records (GWR).
- Last year, an all-woman Indian Navy team on Indian Naval Sailing Vessel (INSV) Tarini had also successfully crossed Passage.

Drake Passage:

- The Passage is located between Cape Horn at the tip of South America and the Antarctic Peninsula.
- It is named after Sir Francis Drake, who was the first Englishman to circumnavigate the globe.
- It has an average depth of about 11,000 feet, with deeper regions going up to over 15,600 feet near the northern and southern boundaries.
- The Drake Passage is considered one of the roughest waterways in the world because here, layers of cold seawater from the south and warm seawater from the north collide to form powerful eddies.
- This eddies when combined with strong winds and storms can be treacherous for those attempting to navigate it.
- It is also the narrowest stretch in the Southern Ocean and spans approximately 800 km between the southern tip of South America and the northern tip of the West Antarctic Peninsula.
- The waters of the passage are highly turbulent, unpredictable, and frequented by icebergs and sea ice.

19. Winged visitors flock to Pulicat, with Birdwatchers in Tow

Why in News?

- The annual flamingo festival in Nellore district is round the corner with the winged visitors arriving in large numbers on their annual sojourn.
- The Flamingo Festival is organised annually to encourage tourism in Pulicat and Nellapattu, Andhra Pradesh.
- Located near Pulicat Lake on the Andhra Pradesh-Tamil Nadu border, Nelapattu Bird Sanctuary is one of the biggest habitats for pelicans and other birds.

Pulicat Lake:

- Pulicat Lake is the second largest brackish water lake or lagoon in India, after Chilika Lake.
- It straddles the border of Andhra Pradesh and Tamil Nadu states with over 96% of it in Andhra Pradesh and 4% in Tamil Nadu, situated on the Coromandal Coast in South India.
- The barrier island of Sriharikota separates the lake from the Bay of Bengal.
- Two rivers which feed the lagoon are the Arani river at the southern tip and the Kalangi River from the northwest, in addition to some smaller streams.
- The lake encompasses the Pulicat Lake Bird Sanctuary. Pulicat Lake Bird Sanctuary and Nelapattu Bird Sanctuary are two most popular bird sanctuaries in South India and an important breeding site for spot billed pelicans in India and noted for the many greater flamingos.

Flamingo:

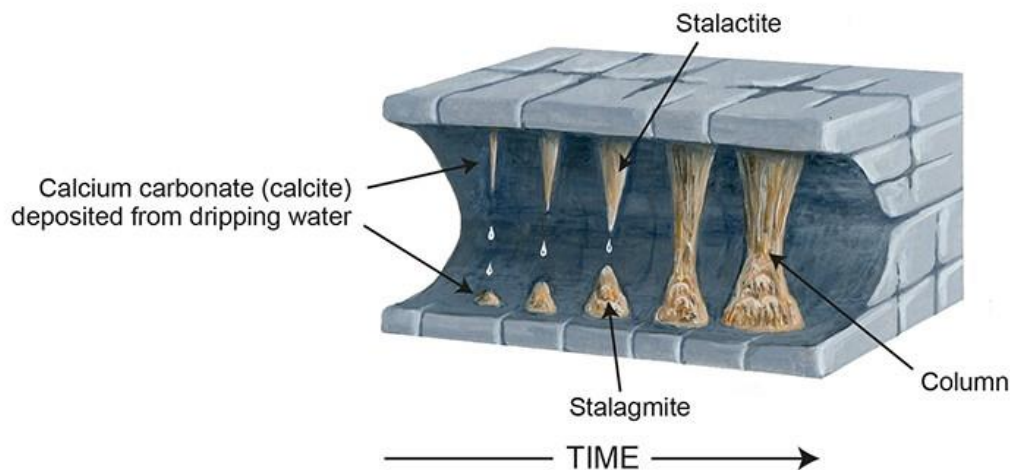
- Flamingos are large birds that are identifiable by their long necks, sticklike legs and pink or reddish feathers.
- According to the Integrated Taxonomic Information System (ITIS), there are six species of flamingo: Greater flamingo (tallest species), Lesser flamingo, Chilean flamingo, Andean flamingo, James' (or puna) flamingo and American (or Caribbean) flamingo.
- Indian subcontinent is the largest breeding ground for Greater flamingo and lesser flamingo during every winter season.
- Flamingos animals are very social and they thrive on interaction with each other.
- Flamingos mouth is like a strainer which helps keep the food in and spits the water out.
- They can stand on one leg comfortably and can even sleep in this position.
- The bright colour of flamingo feathers is caused by the presence of beta carotenoid found in the algae and crustaceans that make up the diet of a Flamingo.

20. Belum Caves

Belum Caves:

- Located near Kurnool in Andhra Pradesh, Belum Caves is the largest and longest cave system open to the public on the Indian subcontinent.
- These caves, which get their name from the Sanskrit word bilum (hole), were formed by the action of water flowing on limestone deposits over millions of years.
- They are known for its speleothems (mineral deposits formed in a cave), such as stalactite and stalagmite formations.
- Though these caves were known to the locals for thousands of years, the first official records that mention them are from 1884, by Robert Bruce Foote, who conducted surveys for the Geological Survey of India.
- In 2013, a new cavernicolous species (inhabiting caves) named *Andhracoides gebaueri* was discovered at the Belum caves.
- Jains and Buddhists monks occupied these caves centuries ago. Many Buddhists relics were found inside the caves.

Development of stalactites and stalagmites in a cave



Stalactite & Stalagmite:

- A stalactite is a type of formation that hangs from the ceiling of caves, hot springs, or manmade structures such as bridges and mines.
- A stalagmite is a type of rock formation that rises from the floor of a cave due to the accumulation of material deposited on the floor from ceiling drippings.

21. India State of Forest Report (ISFR)

Why in News?

- The Union Ministry for Environment, Forest and Climate Change has released the biennial India State of Forest Report (ISFR).

India State of Forest Report (ISFR):

- The ISFR is a biennial report published by the Forest Survey of India (FSI).
- FSI has been mandated to assess the forest and tree resources of the country including wall-to-wall forest cover mapping in a biennial cycle.
- Starting 1987, 16 assessments have been completed so far. ISFR 2019 is the 16th report in the series.

Highlights:

- In the present assessment, the total forest and tree cover of the country is 80.73 million hectare which is 24.56 percent of the geographical area of the country.
- As compared to the assessment of 2017, there is an increase of 5,188 sq. km in the total forest and tree cover of the country.
- Out of this, the increase in the forest cover has been observed as 3,976 sq km and that in tree cover is 1,212 sq. km.
- Range increase in forest cover has been observed in open forest followed by very dense forest and moderately dense forest.
- The top three states showing increase in forest cover are Karnataka (1,025 sq. km) followed by Andhra Pradesh (990 sq km) and Kerala (823 sq km).

Major Findings:

- Area-wise Madhya Pradesh has the largest forest cover in the country followed by Arunachal Pradesh, Chhattisgarh, Odisha and Maharashtra.
- In terms of forest cover as percentage of total geographical area, the top five States are Mizoram (85.41%), Arunachal Pradesh (79.63%), Meghalaya (76.33%), Manipur (75.46%) and Nagaland (75.31%).

Mangroves:

- Mangrove cover has been separately reported in the ISFR 2019 and the total mangrove cover in the country is 4,975 sq km.
- An increase of 54 sq Km in mangrove cover has been observed as compared to the previous assessment of 2017.

- Top three states showing mangrove cover increase are Gujarat (37 sq km) followed by Maharashtra (16 sq km) and Odisha (8 sq km).

Bamboo:

- The extent of bamboo bearing area of the country has been estimated 16.00 million hectares.
- There is an increase of 0.32 million hectare in bamboo bearing area as compared to the last assessment of ISFR 2017.

Wetlands:

- Wetlands within forest areas form important ecosystems and add richness to the biodiversity in forest areas, both of faunal and floral species.
- Due to importance of wetlands, FSI has carried out an exercise at the national level to identify wetlands of more than 1 ha within RFA.
- There are 62,466 wetlands covering 3.8% of the area within the RFA/GW of the country.

Carbon Stock:

- Under the current assessment the total carbon stock in country's forest is estimated 7,124.6 million tonnes.
- There an increase of 42.6 million tonnes in the carbon stock of country as compared to the last assessment of 2017.
- The annual increase in the carbon stock is 21.3 million tonnes, which is 78.2 million tonnes CO₂ eq.

6. INTERNATIONAL RELATIONS

1. Polar Science Cooperation

Why in News?

- India and Sweden are likely to sign their first maritime cooperation agreement, Cooperation in Polar Science.
- A Memorandum of Understanding (MoU) is being prepared, encompassing cooperation in both Arctic and Antarctic regions. India and Sweden have arrived at a Tentative Agreement.

Polar Science:

- The world's Polar Regions and their contiguous oceans are attracting more interest than ever before. Once regarded as barren, inhospitable places, the north and south Polar Regions have been transformed into high profile sites of scientific research.
- Polar science has the potential to benefit humanity, help sustainable use of resources, and protect the planet and generate economic and social impact. Research in the Polar Regions is important and relevant to present-day needs. The Polar Regions may be at the ends of the Earth but what happens there affects us all. Understanding how the Earth works, and in particular how it is responding to ever-increasing human pressure, is one of the greatest challenges of science. Be it in understanding the role of the polar realm in modulating the global climate or for studying the ecosystem adaptability and survival under extreme conditions, there has been an increasing interest in the science of the polar realm, over the past two decades. Major research areas in polar science include Geology, atmospheric sciences, Meteorology, Snow study, Geomagnetism, Environmental Sciences, Wildlife biology, Oceanography, Ozone depletion, Climate change, etc.

Significance:

- In the past few years, India has signed a series of maritime information exchanges as well as military logistics support agreements, extending the reach of its armed forces.
- The pact with Russia, in advanced stages of discussion, will give India access to Russian bases in the Arctic for logistics and operational turnaround. However, the agreement with Sweden is scientific in nature.

India's role in Polar Science:

- Realizing the importance of polar science as a pedestal for scientific research and to cater to the requirements of the Indian scientists in both the Polar Regions, two stations

“Maitri” and “Himadri” have been established to serve as living-cum-research bases in the Antarctic and the Arctic respectively.

- Another permanent Indian research base “Bharati” in Antarctica was commissioned.
- India commenced Arctic research by establishing its Arctic research station in 2008.
- India’s Arctic programme aims to contribute to the development, consolidation and dissemination of the current understanding of climate change, its impacts and adaptations in the Norwegian Arctic, Svalbard.
- The focus areas of scientific studies in the Arctic and the Antarctic have been largely confined to earth, atmospheric and biological sciences.
- Considering the significance of the polar ice cap and the sea ice in the Polar Regions in modulating, if not driving the global climate, it is proposed to initiate a major national mission of cryospheric studies of both the Polar Regions.

National Centre for Polar and Ocean Research (NCPOR):

- The National Centre for Polar and Ocean Research, (NCPOR) formerly known as the National Centre for Antarctic and Ocean Research (NCAOR) is an Indian research and development institution, situated in Vasco, Goa.
- It is India’s premier R&D institution responsible for the country’s research activities in the polar and Southern Ocean realms.
- It is an autonomous Institution of the Department of Ocean Development (DOD), Government of India which is responsible for administering the Indian Antarctic Programme and maintains the Indian government’s Antarctic research station, Maitri.
- At present, NCPOR is an agency working under the Ministry of Earth Sciences, Government of India since 2006, by the notification of the President of India.

2. Haj 2020: India becomes first country to Make Entire Haj Process Digital

Why in News?

- India has become the first country in the world to completely digitize the Haj process.
- Union Minority Affairs Minister Mukhtar Abbas Naqvi said that various services have been added to the online application service like e-visa, haj mobile app, e-messiah health facility, stay and traffic information in Mecca Medina and Haj pilgrimage information.

Highlights:

- India recently signed a bilateral Haj 2020 agreement with Saudi Arabia's Haj and Umrah Minister Mohammad Saleh bin Taher.

- It is for the first time when digital pre-tagging has been arranged by the airlines so that Haj pilgrims will get all kinds of information in India itself.
- Haj pilgrims will get prior information about which room of which building in Mecca Medina and what number bus will have to be taken after landing at the airport.
- The SIM card of the passengers will be linked with the Haj Mobile app so that they will continue to get the latest information about the Haj.
- This year 100 telephone line information centers have been started at Haj House in Mumbai.
- The government of India will provide health cards to all travellers in India, while in Saudi Arabia they will be given 'e-Messiah health facility'.
- This system will have information about the health of each Haj pilgrim. They will be provided medical assistance immediately in case of an emergency

Haj 2020:

- Indian consulate in Jeddah, the Saudi Arabian government and other relevant agencies are working together to make Haj 2020 a successful affair.
- It is estimated that about two lakh Indian Muslims will go on the Haj pilgrimage without any Haj subsidy in 2020.
- The Indian Haj Committee had received a total of 176,714 applications by 30 November. The last date for application is December 5, 2019.

3. Exercise Hand-in-Hand-2019

Why in News?

- The 8th India-China joint training exercise 'HAND-IN-HAND 2019' with the theme counter-terrorism under the United Nations mandate is scheduled to be conducted at Umroi, Meghalaya in December 2019.

Exercise Hand-in-Hand 2019:

- The Chinese contingent from the Tibet Military command comprising of 130 personal and the Indian Contingent of similar strength will participate in the 14-day long training exercise.
- The exercise is planned at the company level with the respective Battalion Headquarters controlling the training.
- The aim of the exercise is to practice joint planning and conduct of counter-terrorist operations in semi-urban terrain.

- The exercise schedule is focused upon training on various lectures & drills associated with counter-terrorist handling & firing with each other's weapons, special heliborne operations and case studies of various operations carried out in counter-terrorist environment.
- Two tactical exercises are scheduled during the training; one on counter-terrorism scenario and the other on Humanitarian and Disaster Relief (HADR) operations.
- The exercise was suspended in 2017 amid strained bilateral ties after the Doklam standoff.
- In 2018, the exercise was held in China.

4. India-Sweden Healthcare Innovation Centre

Why in News?

- India and Sweden sign Memorandum for India-Sweden Healthcare Innovation Centre.

Highlights:

- The India-Sweden Healthcare Innovation Centre in collaboration between the Swedish Trade Commissioner's Office, AIIMS Delhi and AIIMS Jodhpur aims to develop an ecosystem of open innovation that start-ups and the healthcare delivery stakeholders can use to collaborate and address current and future challenges in the healthcare sector.
- It will operate on well-defined challenges and services for stakeholders to build capabilities and methodologies and, help socialize and scale up innovative solutions across the country's healthcare delivery network.
- A holistic view of innovation shall be taken which shall include technology, data, protocols and processes, skill development and business models.
- The key components of this Centre to drive innovation are innovation challenges, incubation, mentorship, live Centre of excellence, skilling, global reach, conferences, digital showroom, white papers and support to access capital sources.
- This initiative will be in alignment to the Government of India's Skill India and Start-up India, as well as the priorities agreed between India and Sweden for bi-lateral cooperation.
- The Innovation Centre's objectives and strategic direction will be owned and driven by a pre-defined governance structure manned by representatives from all three collaborators.
- The Centre will run for an initial period of three years.
- Its impact will be assessed periodically to enable potential expansion at the end of the initial period of 3 years.

5. Pacific Air Chiefs' Symposium 2019

Why in News?

- Air Chief Marshal Rakesh Kumar, Chief of the Air Staff is participating in the Pacific Air Chiefs' Symposium 2019 (PACS 2019) at Joint Base Pearl Harbor-Hickam, Hawaii.

Highlights:

- The theme for this year's symposium is 'A Collaborative Approach to Regional Security'.
- The conference will bring together Air Chiefs from across the Indo-Pacific region who will provide perspectives on common challenges faced and on shared mutual interests while focusing on relevant topics like 'Regional Security', 'Domain Awareness', 'Multi-Domain Awareness', 'Interoperability' and 'HADR'.
- The symposium will also entail discourse and discussions on the combined effort required to maintain peace and security within the region.
- The conference is intended to further strengthen the existing cooperation between the Air Forces of the participating countries and also to pave the way for enhanced interaction in the future. In addition to the host country USA, Air Chiefs from 20 countries are present at the Symposium.

6. U.S. House passes Bill seeking action over Uighur Crackdown

Why in News?

- The U.S. House of Representatives have overwhelmingly approved a Bill that would require the Trump administration to toughen its response to China's crackdown on its Muslim minority, drawing swift condemnation from Beijing.

Highlights:

- The Uighur Act of 2019 is a stronger version of a Bill that angered Beijing when it passed the Senate in September 2019.
- It calls on President Donald Trump to impose sanctions for the first time on a member of China's powerful politburo (executive committee for communist parties).
- The Uighur Bill, requires the U.S. President to condemn abuses against Muslims and call for the closure of mass detention camps in the northwestern region of Xinjiang.
- It calls for sanctions against senior Chinese officials who, it says, are responsible.
- The revised Bill still has to be approved by the Republican-controlled Senate before being sent to Mr. Trump for approval.

China's Response:

- China's Foreign Ministry called the Bill a malicious attack against China.
- "We urge the U.S. to immediately correct its mistake, to stop the above Bill on Xinjiang from becoming law, to stop using Xinjiang as a way to interfere in China's domestic affairs," said the statement, attributed to the Ministry's spokeswoman.
- Commenting on the repercussions the bill would have on the trade negotiations between the two countries, the spokeswoman hinted a strong counter reaction to the move.

Who are Uighurs?

- The Uighurs live in Xinjiang, the largest and most western of China's administrative regions, which is surrounded by Mongolia, Russia, Kazakhstan, Kyrgyzstan, Tajikistan, Afghanistan, Pakistan and India.
- They are Muslim, speak a language close to Turkish, and are culturally and ethnically closer to Central Asia than the rest of China.
- Till recently, they were the majority in Xinjiang, but massive registered and unregistered settlements of Han Chinese and heavy troop deployments have likely changed that situation.
- International concern has been growing about what China is doing to its Uighur population, a Muslim minority community concentrated in the country's north-western Xinjiang province. Reports have emerged of China 'homogenising' the Uighurs, who claim closer ethnic ties to Turkey and other central Asian countries than to China, by brute – and brutal – force.
- Around a million Uighurs, Kazakhs and other Muslims have been bundled into internment camps, where they are allegedly being schooled into giving up their identity, and assimilate better in the communist country dominated by the Han Chinese.

7. BRICS remote Sensing Satellite Constellation

Why in News?

- The space agencies of BRICS nations have been negotiating a Framework Agreement to formalize the cooperation on building a 'virtual constellation of remote sensing satellites.

Constellation:

- The purpose of the proposed virtual constellation is to get access to satellite remote sensing data, which could be used by the individual BRICS nations for various applications including natural resources management and disaster management.

- There are two phases proposed for the Constellation: phase one, comprising a virtual constellation of existing satellites; and phase two, a new satellite constellation.
- It will create a system for the sharing of remote sensing data, meaning the data from each of the member countries' existing Earth observation satellites will be made available to all the other members.

Why need such constellation?

- The BRICS represents 43 percent of the world's population, 30 percent of gross domestic product and 17 percent of global trade and they have been trying to enhance co-operation in different fields, including space. Currently, only Brazil, Russia, India and China have remote-sensing satellites in the sun-synchronous orbit, and they will provide data to South Africa, which does not have a satellite of its own.

8. Palestine-India Techno Park

Why in News?

- The Representative of India to Palestine released third tranche of funding, worth \$3 million, for the construction of a Palestine-India Techno Park.

The Palestine-India Techno Park:

- The techno park is meant to create a national business environment and culture “that will enable knowledge-based and creative enterprises as well as technology clusters to successfully operate locally, regionally and globally”.
- In 2017, the park became a member of the International Association of Science Parks and Areas of Innovation (IASP), a global network of science and technology parks.
- Its objectives include establishing an environment that is accessible to industry, supporting the process of commercialisation and industrialisation, supporting entrepreneurship and bridging the knowledge gap between the private sector and academia.

Indian Investment in Palestine:

- In total, India has made a commitment of investing over \$12 million, part of India's broader framework of capacity building in Palestine.
- The Indian government pays \$3 million on a half-yearly basis.
- Trade between India and Palestine stands at roughly US \$40 million and spans automotive spare parts, medical tourism, agro-products, textiles, agro-chemicals and pharmaceuticals among others.

- India's investment towards the park is part of India's support to the Palestinian cause.

India, Palestine & Israel:

- Historically, India's ties with Israel and Palestine have been more or less balanced. India fully established diplomatic relations with Israel in 1992.
- Defence and agriculture have formed the main pillars of their relationship.
- In 1974, India became the first non-Arab state to recognise the Palestine Liberation Organisation (PLO) as the sole legitimate representative of the Palestinian people.
- In 1938, while expressing sympathies for the persecution of Jews in Germany, Mahatma Gandhi said, "Palestine belongs to the Arabs in the same sense that England belongs to the English or France to the French".
- In 1988, India was one of the first countries to recognise the state of Palestine after the Palestinian National Congress declared independence.
- At that time, India maintained its support for the two-state solution and championed a "sovereign, independent, united" Palestine with its capital in East Jerusalem.
- In 1996, India opened its Representative Office to the State of Palestine in Gaza, which was shifted to Ramallah in 2003.
- In July 2017, PM Modi became the first Indian Prime Minister to visit Palestine.

9. India to Host 36th International Geological Congress in March 2020

Why in News?

- India is gearing up to host the 36th International Geological Congress (IGC) in the capital during the first week of March, 2020.

International Geological Congress:

- Popularly described as the Olympics of Geosciences, the IGCs are a prestigious global geoscientific event held once in four years and participated by around 5000-6000 geoscientists from all across the world.
- The theme of the forthcoming conference is 'Geosciences: The Basic Science for a Sustainable Development'.

Highlights:

- India is the only Asian country to host the event twice.
- In 1964, India had hosted it for the first time, which was the 22nd IGC. The event was inaugurated by the then President of India Dr. Sarvepalli Radhakrishnan.

- The IGC is making a comeback to the Indian soil after 56 long years much to the enthusiasm of the entire geoscientific community.
- The event is being funded by the Ministry of Mines (MoM) and Ministry of Earth Sciences (MoES) with the support of the Indian National Science Academy (INSA) and the national Science Academies of Bangladesh, Pakistan, Nepal and Sri Lanka.
- Geological Survey of India is the nodal agency for organizing the event.

10. Bougainville - A new country in the Pacific

Why in News?

- The Autonomous Region of Bougainville, a chain of islands that lie 959 kilometres northwest of Papua New Guinea's (PNG) capital, Port Moresby, has recently voted for its independence.



China's Interest in Bougainville:

- For the broader region, an independent Bougainville has a number of implications.
- Firstly, it sends a strong signal for other self-determination movements across the Pacific, including in New Caledonia which will hold a second referendum for independence in 2020.
- There are also geopolitical implications. The referendum has taken place during a period of heightened strategic anxiety among the Pacific's so-called traditional partners — Australia, NZ and the US, as well as the UK, France and Japan.

- There have long been concerns China will seek to curry influence with an independent Bougainville.
- Beijing's interest in Bougainville is two-fold: First, it is seeking to shore up diplomatic support in the Pacific Islands region, thereby reducing support for Taiwan which lost a further two Pacific allies this year.
- And second, to access to resources, namely fisheries and extractive minerals.
- The current strategic prism of China is about debt-trap diplomacy to undermine the importance of local dynamics and the resilience of Bougainville people.

Bougainville Referendum:

- The referendum marks an important part of a peace agreement signed almost 20 years ago.
- The 2001 Bougainville Peace Agreement ended the deeply divisive nine year conflict (1988-1997) that led to the deaths of approximately 20,000 people, or about 10 per cent of Bougainville's population.
- The referendum, however, is non-binding.
- The ultimate outcome will be determined by a vote in Papua New Guinea's National Parliament following negotiations between the Papua New Guinean government and the Autonomous Bougainville Government.

11. WEF Gender Gap Index: India slips to 112th rank

Why in News?

- WEF Gender Gap Index says that India has a very low (13.8 percent) women representation on company boards.

Highlights:

- World Economic Forum (WEF) has recently released Gender Gap Index-2019 that shows India has slipped to 112th position.
- India has moved downwards four places in terms of gender equality amid increasing disparity in terms of women's participation in the development of the country.
- The country is ranked in the bottom five on health and economic fronts.
- Last year, in 2018, India was on the 108th position on the World Economic Forum's Gender Gap Report.

India Specific Findings:

- The first WEF Gender Gap Index was published in 2006 when India was ranked at 98th position.
- WEF uses four metrics to give overall ranking that worsened India's ranking from very next year.
- Now, India has slipped to 150th place on health and survival, 112th on educational attainment and 149th in economic participation.
- It was said in the report that there are very few economic opportunities for women in India. It is 34.5 per cent in India, 32.7 per cent in Pakistan, 27.3 per cent in Yemen and 22.7 in Iraq.
- The Report also highlights that India has a very low (13.8 percent) women representation on company boards.

Global Findings:

- World Economic Forum (WEF) Report said that Nordic countries are on the top of the list.
- Iceland (1st) is ranked as the most appropriate country for women representation followed by Norway (2nd) Finland (3rd) and Sweden (4th).
- In the top-10 list, these countries are followed by Nicaragua, New Zealand, Ireland, Spain, Rwanda, and Germany.
- Apart from that, China ranked 106th, Bangladesh - 50th, Brazil - 92nd, Nepal - 101st, Indonesia - 85th and Sri Lanka - 102nd.
- The report suggests that it will take 95 years to close the political gender gap as women hold 25.2 per cent of parliamentary seats worldwide.

World Economic Forum:

- World Economic Forum is a non-profit organization based in Switzerland. It is headquartered in Geneva.
- The Forum was established in 1971 by Professor Klaus M. Schwab, working at the University of Geneva, in the name of European Management.
- It was renamed as World Economic Forum in the year 1949 and since then, it organizes an annual meeting every year in the month of January called Davos.

12. MoU between CSIR and the National Centre for Scientific Research (CNRS),

France

Why in News?

- A Memorandum of Understanding (MoU) was signed between the Council of Scientific & Industrial Research (CSIR), India and the National Centre for Scientific Research (CNRS), France to establish a framework for cooperation between the two towards promotion and support of scientific and Technological Research.

Highlights:

- In view of the potentially beneficial and synergistic cooperation possibilities for translating science into technology CSIR and CNRS may explore strengthening their cooperation to foster joint innovation and transfer of technologies applicable to India or/and France and to other nations.
- This cooperation could include sharing good practices, promoting technology transfer and enhancing industry-academia cooperation.
- The broad research areas of mutual interest include biotechnology including plant and marine biotechnology; health research; environment and climate change studies; engineering science and technology; material science and technology; energy science and technology and Water Research.

CSIR:

- Set up in 1942 as an autonomous body, CSIR is now the largest publically funded multi-disciplinary industrial R&D organisation in India under the administrative supervision of the Ministry of Science and Technology.
- It conducts research in a wide spectrum of science and technology domains ranging from aerospace, instrumentation, environmental engineering, mining, minerals & materials, housing and structures to oceanography, chemicals, drugs, and biotechnology.
- CSIR provides technological intervention in many areas with regard to societal efforts including environment, health, drinking water, food, housing, energy, and farm and non-farm sectors.
- CSIR India caters to the technological needs of Indian as well as foreign industries based in India and abroad.

CNRS:

- Founded in 1939, CNRS is the largest fundamental research organisation in Europe.

- CNRS is an interdisciplinary public research organisation under the administrative supervision of the French Ministry of Higher Education and Research.
- CNRS ranks among the leading global research institutions for its excellent research and innovation achievements and has 22 Nobel Laureates and 12 Field medal recipients.

13. India-Bangladesh Joint River Commission (JRC)

Why in News?

- Bangladesh has not sent a delegation for the Joint River Commission (JRC) meeting with India that was scheduled to be held. This deferral is seen as a dissent to the ongoing CAA debate.

Joint River Commission:

- An Indo-Bangladesh Joint Rivers Commission (JRC) is functioning since 1972.
- It was established with a view to maintaining liaison in order to ensure the most effective joint effort in maximizing the benefits from common river systems.
- The JRC is headed by Water Resources Ministers of both the countries.
- Discussions have been continuing with Bangladesh for sharing of waters of Teesta & Feni rivers besides other six common rivers namely; Manu, Muhri, Khowai, Gumti, Jaldhaka and Torsa.
- India and Bangladesh share 54 rivers. Such technical level meetings are to be held regularly. But this deviance has cast a shadow over the agreement to share the waters of the Feni river that was taken up during the visit of PM Sheikh Hasina.

14. 19th India-Iran Joint Commission.

Why in News?

- Meeting of the 19th India-Iran joint commission.

Highlights:

- External Affairs Minister Subrahmanyam Jaishankar met with Iranian Foreign Minister Javad Zarif for a meeting of the 19th India-Iran joint commission.
- Discussions were held on closer bilateral relations and regional and global issues affecting the two countries.
- The two countries have agreed on accelerating the Chabahar project.

- Iran had expressed that it was disappointed that India had stopped all oil imports from Iran following the sanctions by the United States.
- Iran's Ambassador Ali Chegeni had earlier suggested that India's adherence to U.S. sanctions was also affecting Chabahar port development plans.
- Recently, a senior U.S. official made it clear that it would continue its "narrow exemption" to India to develop the Chabahar port, recognizing its role as "as a lifeline to Afghanistan in terms for India to be able to export humanitarian supplies and potentially helping Afghanistan diversify its export opportunities."
- Subsequently, diplomats from India, Iran and Afghanistan met in Delhi and discussed several new initiatives for the trilateral project at Chabahar.

15. MoU between India and Brazil on Bioenergy Cooperation

Why in News?

- The Union Cabinet has given its approval for the signing of Memorandum of Understanding between the Republic of India and the Federative Republic of Brazil on Bioenergy Cooperation.

Highlights:

- The MoU provides a framework to cooperate and promote investment in biofuel, bioelectricity and biogas supply-chains, including feedstock, industrial conversion, distribution and end-use sectors.
- Exchange of information on agricultural practices.
- Policies regarding biomass for bioenergy, including sugarcane, corn, rice, oil-crops, and lignocellulosic crops. [Lignocellulose refers to plant dry matter (biomass)].
- Policies for reducing greenhouse gas emission levels based on the use of biofuels.
- Using cycle analysis and the issuance of emissions reduction certificates traded in an organised market. Trade aspects and the promotion of a joint position to address market access and sustainability of biofuels, including advanced biofuels.
- Engine and fuel modifications/adjustments that may be necessary for different percentages of biofuels blended with fossil fuels.

India and Brazil:

- India and Brazil are major consumers of energy in the world.
- Brazil is one of the most important trading partners of India in the entire LAC (Latin America and the Caribbean) region.

- Brazil is currently the world's second-largest producer and consumer of biofuels. Biofuels and bioelectricity accounted for 18% of Brazil's energy mix.
 - ❖ India also has a strong focus in the area of biofuels and has set a target to achieve 20% blending of ethanol in petrol and 5% blending of biodiesel in diesel by 2030 with the announcement of the new policy on Biofuels in 2018.

16. Universal Postal Union (UPU)

Why in News?

- The Union Cabinet chaired gave its approval to the ratification of the Tenth Additional Protocol to the Constitution of the Universal Postal Union (UPU).

Universal Postal Union (UPU):

- The UPU established by the Treaty of Bern of 1874 is a specialized agency of the United Nations (UN) that coordinates postal policies among member nations, in addition to the worldwide postal system.
- The UPU's headquarters are located in Bern, Switzerland.
- The UPU contains four bodies consisting of the Congress, the Council of Administration (CA), the Postal Operations Council (POC) and the International Bureau (IB).
- It also oversees the Telematics and Express Mail Service (EMS) cooperatives. Each member agrees to the same terms for conducting international postal duties.

Significance:

- The approval enables the Postal Administration of India to have the Instrument of Ratification signed with the Director-General of the International Bureau of the Universal Postal Union through diplomatic channels along with the approval of other Acts of the Union. It will also enable the Department of Posts to bring out any administrative orders to implement the provisions of the UPU Convention in India.

17. Free Trade Agreement with the Eurasian Economic Union

Why in News?

- Russia is hopeful of India concluding a new Free Trade Agreement with the Eurasian Economic Union (EAEU).

Eurasian Economic Union (EAEU):

- The Eurasian Economic Union is an international organization for regional economic integration. It has international legal personality and is established by the Treaty on the

Eurasian Economic Union. The EAEU provides for free movement of goods, services, capital and labor, pursues coordinated, harmonized and single policy in the sectors determined by the Treaty and international agreements within the Union.

- The Member-States of the Eurasian Economic Union are the Republic of Armenia, the Republic of Belarus, the Republic of Kazakhstan, the Kyrgyz Republic and the Russian Federation. The Union is being created to comprehensively upgrade, raise the competitiveness of and cooperation between the national economies, and to promote stable development in order to raise the living standards of the nations of the Member-States.

Structure & Governance of EAEU:

- **Supreme Eurasian Economic Council:** The Supreme Council, which is composed by the heads of state of the member states, makes important decisions for the union. It approves the budget and the distribution of the contribution of the Member States.
- **Eurasian Economic Commission:** The Eurasian Economic Commission (EEC) is the permanent regulatory body of the Eurasian Economic Union (EAEU). It started work on February 2, 2012.
- The main purpose of the Eurasian Economic Commission is ensuring the functioning and development of the EAEU, and developing proposals for the further development of integration. The most important feature of the Commission lies in the fact that all decisions are based on a collegial basis. The Eurasian Economic Commission consists of two bodies: The Council and the Board.
- **Council:** The council is composed of the Vice Prime Ministers of the member states. The council of the Commission oversees the integration processes in the Union, and is responsible for the overall management of the Eurasian Commission.
- **Board:** The Board of the Eurasian Economic Commission consists of 10 members (2 Members (Minister) from each Member State), one of whom is the Chairman of the Commission Board.
- **Court of the Eurasian Economic Union:** The Court of the Eurasian Economic Union replaced the Court of the Eurasian Economic Community (EurAsEC Court) in 2015. It is in charge of dispute resolution and the interpretation of the legal order within the Eurasian Economic Union. Its headquarters is in Minsk.

18. Iran, China and Russia's joint naval drill in Indian Ocean and Gulf of Oman

Why in News?

- Iran, China and Russia began a joint naval exercise in the Indian Ocean and Gulf of Oman, in what is being seen as a response to recent US maneuvers in the region. The drill is expected to further provoke Washington.

Highlights:

- The four-day exercise has been launched from the port city of Chabahar in southeastern Iran.
- The Chabahar port, which is near Iran's border with Pakistan, was built with Indian assistance and is operated by India.
- Since 2019, the region has been a focal point of global tensions.
- The Gulf of Oman, where the exercise is being held, is a critical waterway as it connects the Arabian Sea to the Strait of Hormuz, a 33-km wide passage which opens into the Persian Gulf.
- It is located between energy producers Iran, Iraq, Kuwait, Saudi Arabia, Bahrain, Qatar, Oman (the exclave of Musandam), and the United Arab Emirates (UAE).
- A fifth of the world's oil passes through this waterway – around 30% of all sea-borne crude oil globally.

Why Tensions have Peaked?

- In July, Iran detained a British oil vessel, the Stena Impero, for two months, believed to be in retaliation for an Iranian oil carrier that British authorities detained at Gibraltar earlier in the same month.
- Tensions rapidly escalated in September, when the US accused Iran of carrying out drone attacks on oil fields in Saudi Arabia.
- The attacks had immediately reduced Saudi Arabia's oil production by half (5% of global oil production), until the affected facilities returned to full capacity by the end of the month.
- Iran denied the allegations, and the responsibility was claimed by Yemen's Houthi rebels.
- US last year withdrew from the 2015 Iran nuclear deal and reimposed sanctions on Tehran. The US has since pushed for Iranian energy sales to be cut off, crippling Iran's Economy.

7. INTERNAL SECURITY & DISASTER MANAGEMENT

1. Mitra Shakti 2019

Why in News?

- The 7th edition of India-Sri Lanka joint training exercise, Exercise ‘Mitra Shakti 2019’ is scheduled to be conducted at the Foreign Training Node (FTN) in Pune in December 2019.

Exercise Mitra Shakti:

- The exercise is aimed at enhancing interoperability and operational efficiency amongst the armies of both India and Sri Lanka when deployed as part of the United Nations peacekeeping forces.
- The objective of the exercise is to build and promote positive relations between armies of India and Sri Lanka through focus on sub unit-level training on counter-insurgency and counter-terrorism operations in urban and rural environment under the United Nations mandate.
- The joint training exercise also signifies the strength of India-Sri Lanka relations in the field of military cooperation and engagement, which is vital for refining the interoperability and operational preparedness.
- The joint exercise is designed for incorporating the current dynamics of the United Nations peacekeeping operations through practical and comprehensive discussions and tactical exercises. The primary focus of the joint training exercise will remain on field craft, battle drills and procedures as also the ability to operate jointly with seamless interoperability.
- India and Sri Lanka have collaborated on several counter-terrorism and counter-insurgency operations over the years. The two sides have a long history of military cooperation.

2. Exercise Surya Kiran – XIV

Why in News?

- Joint military exercise ‘SURYA KIRAN – XIV’ between India and Nepal will be conducted in Nepal in the coming week.

Exercise Surya Kiran– XIV:

- It is an Annual Event which is conducted alternatively in Nepal and India.
- It is an important exercise in terms of the security challenges faced by both the nations in the realm of changing facets of Global Terrorism.

- The aim of this exercise is to conduct a Battalion level combined training between Indian Army and Nepal Army to increase interoperability in jungle warfare and counter terrorist operations in mountainous terrain, humanitarian assistance and disaster relief, medical and environmental conservation including aviation aspects.
- The joint military exercise will enhance the level of defence cooperation which will further foster the bilateral relations between the Two Nations.

3. 16 Seismometers Defunct in Earthquake-Prone Zones

Why in News?

- At least 20 out of 35 seismometers in Maharashtra are lying in a state of disrepair, and 16 of these are located in seismic zones III and IV.

Seismometers:

- A seismometer is an instrument used to measure and record earthquakes.
- Seismic Zones in India:
- Over 59 % of India's land area is under threat of moderate to severe earthquakes.
- The zones are divided on the basis of Modified Mercalli (MM) intensity, which measures the impact of Earthquakes.

Earthquake-Prone-Zones-in-India-2:

- The bureau of Indian standards is the official agency for publishing the seismic hazard maps and codes. Bureau of Indian Standards grouped India into four seismic zones, viz. Zone II, III, IV and V.
- **Zone – V** (highest seismic activity zone): Entire north-eastern India, parts of Jammu and Kashmir, Himachal Pradesh, Uttaranchal, Rann of Kutch, part of North Bihar and Andaman & Nicobar Islands.
- **Zone – IV** (high seismic zone): Parts of Jammu and Kashmir and Himachal Pradesh, Delhi, Sikkim, Northern Parts of Uttar Pradesh, Bihar and West Bengal, parts of Gujarat and small portions of Maharashtra near the west coast and Rajasthan.
- **Zone – III** (moderate seismic zone.): Kerala, Goa, Lakshadweep islands, remaining parts of Uttar Pradesh, Gujarat and West Bengal, Parts of Punjab, Rajasthan, Madhya Pradesh, Bihar, Jharkhand, Chhattisgarh, Maharashtra, Orissa, Andhra Pradesh, Tamilnadu and Karnataka.
- **Zone – II** (least active seismic zone): Remaining parts of India.

Significance of India's Seismic Zoning Map:

- It is mainly used by the Department of Disaster Management of the different state governments. It also helps them in planning for a natural disaster like earthquake.
- An Indian seismic zoning map assists one in identifying the lowest, moderate as well as highest hazardous or earthquake prone areas in India. Even such maps are looked into before constructing any high rise building so as to check the level of seismology in any particular area.



North Indian Plate:

- Indian tectonic plate broke off from an ancient supercontinent called Gondwana 100 million years ago.
- The Indian plate skewed north and slammed into the Eurasian plate, creating the Himalayas.
- India still moves northeast into Eurasian plate at roughly 5 cm every year. About 60% of India is vulnerable to earthquakes caused by northward grind of the Indian subcontinental landmass.

4. Data Protection Bill

Why in News?

- The Union cabinet gave its approval to the Personal Data Protection Bill that seeks to lay down a legal framework to preserve the sanctity of “consent” in data sharing and penalize those breaching privacy norms.
- The draft bill, the Personal Data Protection Bill, 2018, was prepared by a high-level expert committee headed by former Supreme Court judge B.N. Srikrishna.

Provisions of the Bill:

- The Bill deals with the broad guidelines on the collection, storage, and processing of personal data, the consent of individuals, penalties and compensation, and a code of conduct.
- The draft Bill classifies ‘sensitive personal data’ as including passwords, financial data, health data, sex life, sexual orientation, biometric data, genetic data, transgender status, intersex status, caste or tribe, and religious or political belief or affiliation.
- The draft Bill says that such sensitive personal data can be processed only with the explicit consent of the person, and this consent needs to be informed, clear, and specific, as defined by the Bill itself. The draft bill also has a provision for the right to be forgotten, where the person “shall have the right to restrict or prevent continuing disclosure of personal data”. There is also a provision for the central government to notify categories of personal data as critical personal data, which will then be only processed in a server or data centre located in India. Personal data is to be stored in India, but can be processed outside with the consent of the person. The draft Bill also specifies penalties for not following its provisions, including a penalty of 5 crore or 2% of turnover, whichever is higher, if no action is taken on a data leak.

5. NAVARMS-19

Why in News?

- The fourth edition of the International Seminar cum Exhibition on Naval Weapon Systems ‘NAVARMS-19’ will be held in New Delhi.

NAVARMS-19:

- NAVARMS is the only international seminar and exhibition on naval weapon systems conducted in India to invite all the stakeholders in life cycle management of naval weapons and provide a common platform to share their views and concerns.

- The theme for this year's exhibition is: "Make in India – Fight Category: Opportunities and Imperatives".
- The 2-day event will provide an opportunity for the exchange of ideas, create awareness and identify emerging prospects for Indian/International defence industry in the domain of naval weapon systems.
- The previous three editions were held in 2007, 2010 and 2013.

6. National Centre for Sustainable Coastal Management (NCSCM)

Why in News?

- Ministry of Environment, Forest and Climate Change has set up the National Centre for Sustainable Coastal Management (NCSCM), Chennai to undertake studies and research in the area of Coastal Zone Management including coastal resources and Environment.

Highlights:

- NCSCM has 6 research divisions. Its cutting-edge research infrastructure provides for world class research outputs and decision support system that directly enables policy decisions.
- NCSCM is mandated to disseminating knowledge pertaining to coastal management by capacity building at all levels for the benefit of coastal communities and stakeholders.
- NCSCM's Integrated Coastal Zone Management (ICZM) Plan has been developed on international standards that can be replicated in other parts of the World.
- Survey of India and NCSCM have mapped the Hazard Line for the entire coast of India, which includes vulnerability mapping of flood, erosion and sea level rise. The outputs will be used by all the coastal States and UTs in managing coastal vulnerability in the coming years and as a tool for preparation of Disaster Management Plans.

The aims and Objectives of the Centre:

- To strive for being a World Class Knowledge Institution related to coastal zones, environment, resources and processes.
- To promote integrated and sustainable management of the coastal and marine areas in India for the benefit and wellbeing of the traditional coastal and island communities.
- To advice the Union and State Governments and other associated stakeholder(s) on policy, and scientific matters related to Integrated Coastal Zone Management (ICZM).

7. Indian Coast Guard

Why in News?

- The Indian Coast Guard held the 18th National Maritime Search and Rescue Board Meeting.

Indian Coast Guard (ICG):

- The Indian Coast Guard is a multi-mission organisation, conducting round-the-year real-life operations at sea.
- It is headed by the Director General Indian Coast Guard (DGICG) exercising his overall command and superintendence from the Coast Guard Headquarters (CGHQ) located at New Delhi.
- It has jurisdiction over the territorial waters of India, including its contiguous zone and exclusive economic zone.
- It was formally established in 1978 by the Coast Guard Act as an independent armed force of India.
- It operates under the Ministry of Defence.
- For effective command and control, the Maritime Zones of India are divided into five Coast Guard Regions, namely, North-West (HQ Gandhinagar), West (HQ Mumbai), East (HQ Chennai), North-East (HQ Kolkata) and Andaman & Nicobar (Port Blair).

ICG's Mission:

- ✓ EEZ Security
- ✓ Coastal Security
- ✓ Offshore Security
- ✓ Marine Safety
- ✓ Marine Environment Protection
- ✓ Scientific Assistance
- ✓ National Defence (in war)

Duties of the Coast Guard:

- Ensuring the safety and protection of artificial islands, offshore terminals, installations and other structures and devices in any maritime zone.
- Providing protection and assistance to fishermen in distress while at sea.
- Preservation and protection of India's maritime environment including prevention and control of Marine Pollution.

- Assisting the Customs and other authorities in anti-smuggling operations.
- Enforcement of Maritime Zones of India Act.
- Precautionary measures for the safety of life and property at sea and the collection of Scientific Data.

8. Exercise 'Apharan' PIB

Why in News?

- The Indian Navy, in collaboration with Indian Coast Guard conducted a large-scale Anti Hijacking Exercise off the Port of Kochi.

Exercise 'Apharan':

- The Exercise code named "Apharan" saw participation of multiple agencies, including more than 12 ships and helicopters of the Indian Navy, Indian Coast Guard and Cochin Port Trust.
- This was the first time that such a large-scale exercise involving all stake holders has been conducted in Kerala.
- It was aimed at streamlining the response mechanism/ preparedness to thwart any attempt to hijack a merchant vessel or attempt forced entry of a rogue/commandeered merchant vessel into Indian harbour.

9. Navy plans 24 Submarines to Strengthen Fleet

Why in News?

- To strengthen its underwater fleet, the Indian Navy plans to build 24 submarines, including six nuclear attack submarines, a parliamentary panel was told.

Submarines in the Navy:

- According to the data from Indian Navy, currently there are 2 nuclear submarines and 15 conventional submarines in its fleet.
- The two nuclear submarines in the fleet are INS Arihant and INS Chakra. Out of these INS Chakra has been leased from Russia.

Significance:

- Navy has made plans to build new submarines as the conventional submarines are more than 25 years old. Thirteen submarines in the fleet are between the age 17 and 32. Also, it is important for the Indian Navy to strengthen its fleet as there is increased activity of the Chinese in the Indian Ocean Region.

- The main issue that is further delaying addition of submarines to the fleet is US sanctions and CAATSA act of US. CAATSA is Countering American Adversaries Through Sanctions Act.
- Along with the Arihant Class SSBNs which are nuclear-powered submarines equipped with nuclear missiles, the Indian Navy has plans to build six nuclear attack submarines. They are also planned to be built indigenously in partnership with private sector industries.
- The Ship, Submersible, Ballistic, Nuclear (SSBN) is a nuclear powered ballistic missile submarine.

Concerns:

- **Rising Chinese influence in the Indian Ocean Region:**
 - ❖ The Indian Ocean Region, the area of operations of the Navy, has witnessed rising activities of the Chinese Navy. The Chinese have increased their presence in the form of increased patrolling by submarines and ships.
- **Aging Fleet:**
 - ❖ A majority of the conventional submarines in the Indian Navy are over 25 years old. Thirteen submarines are between 17 and 32 years, impairing the capability of the Indian Submarines.
- **Delay in commissioning New Submarines:**
 - ❖ The Indian Navy has been revamping its infrastructure, including procuring new ships to match the naval capabilities of the Chinese.
 - ❖ Due to the delay in the new submarine construction projects like the six submarines under Project 75 being carried out at Mazagaon Docks, Mumbai, the Defence Ministry has approved Medium Refit cum Life Certification or MRLC of six older submarines.
- **The sanctions on Russia:**
 - ❖ The MRLC of submarine Sindhuraj was held up due to sanctions imposed by the U.S. on Russia. This has impeded the ability of Russia to submit bank guarantees and the integrity pact under the MRLC framework.
 - ❖ The sanctions imposed on Russia by the U.S. under its Countering America's Adversaries through Sanctions Act (CAATSA) have severely impaired the capabilities of Russia to service the submarines it has leased out to India.