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Schemes

1) SVAMITVA

About the scheme

- SVAMITVA (Survey of villages and mapping with improvised technology in village areas) scheme is a collaborative effort of the **Ministry of Panchayati Raj, State Panchayati Raj Departments, State Revenue Departments and Survey of India**. It is a **central sector scheme**.
- It aims at surveying the land parcels in rural inhabited areas using **drone technology** and to provide '**Record of Rights**' with issuance of **legal ownership cards (Property cards/Title deeds)** to the property owners so that they can use their property for economic purposes.

Implementation

- The **Ministry of Panchayati Raj (MoPR)** is the Nodal Ministry for implementation of the scheme. **Survey of India** shall work as the technology partner for implementation.
- The scheme was launched nationwide in 2021 after successful completion of pilot phase of the scheme in 9 states.

Objectives

- The outcome from the scheme would include updating the record of rights in the revenue/property registers and issuance of property cards to the property owners. This would facilitate **monetisation of rural residential assets** for credit and other financial services.
- It will also lead to creation of **accurate land records** for rural planning and determination of **property tax**.
- Through the SVAMITVA scheme, the government hopes that

property disputes and legal cases will be reduced.

- Other gram panchayats and community assets like village roads, ponds, canals, open spaces, school, anganwadi, health sub-centres etc will also be surveyed and GIS maps will be created. These maps can be used to prepare better quality Gram Panchayat Development Plan (GPDP).

Why in News?

- The Union Government has announced that under the SVAMITVA scheme around three lakh villagers have received property cards that would enable them to access loans.

About Survey of India

- The **National Survey and Mapping Organization**, also known as the Survey of India, is the **oldest scientific department** of the Government of India.
- Set up in **1767**, it is under the **Department of Science & Technology**.
- As the nation's **Principal Mapping Agency**, Survey of India ensures that the country's domain is explored and mapped suitably, provides base maps for expeditious and integrated development and ensures that all resources contribute with their full measure to the progress, prosperity and security of the country.

2) New India Literacy Programme

What's in the news?

- The Government of India has approved a new scheme "New India Literacy Programme" for the period FYs 2022-2027 to **cover all the aspects of Adult Education to align with National Education**

Policy 2020 and Budget Announcements 2021-22.

- The scheme will **cover non-literates of the age of 15 years and above** in all state/UTs in the country.
- The National Education Policy 2020 has recommendations for Adult Education and Lifelong Learning. In the Union Budget 2021-22, an announcement had been made to enable increased access of resources, online modules covering the entire gamut of adult education.
- As per **Census 2011**, the absolute number of **non-literates of the country in 15 years and above age group is 25.76 crore** (Male 9.08 crore, Female 16.68 crore).
- In consideration of the progress of persons certified as literates being to the tune of 7.64 crore under the **Saakshar Bharat programme** implemented during 2009-10 to 2017-18, it is estimated that currently around 18.12 crore adults are still non-literate in India.
 - *The Saakshar Bharat programme aimed to promote and strengthen Adult Education, especially of women in the age group of 15 and beyond by extending educational options to those adults who have lost the opportunity of access to formal education and crossed the standard age for receiving such education.*

Objectives

- The objectives of the scheme is to **impart not only foundational literacy and numeracy but also to cover other components which are necessary for a citizen of 21st century** such as critical life skills (including financial literacy, digital literacy, commercial skills, health care and awareness, child care and education, and family

welfare); vocational skills development (with a view towards obtaining local employment); basic education (including preparatory, middle, and secondary stage equivalency); and continuing education (including engaging holistic adult education courses in arts, sciences, technology, culture, sports, and recreation, as well as other topics of interest or use to local learners, such as more advanced material on critical life skills).

- The scheme will be **implemented through volunteerism through online mode**. The training, orientation, workshops of volunteers, may be organized through face-to-face mode. All material and resources shall be provided **digitally** for easy access to registered volunteers through easily accessible digital modes, viz, TV, radio, cell phone-based free/open-source Apps/portals, etc.

3) Prime Minister's Employment Generation Programme

About PMEGP

- Prime Minister's Employment Generation Programme (PMEGP) is a **central sector scheme** administered by the **Ministry of Micro, Small and Medium Enterprises** since 2008-09.
- It is a major **credit-linked subsidy programme** aimed at **assisting first generation entrepreneurs for setting up micro enterprises** in the **non-farm sector** by helping traditional artisans and unemployed youth.
- At the national level, the Scheme is being implemented by **Khadi and Village Industries Commission (KVIC)**, a **statutory organization under the administrative control**

of the Ministry of MSME, as the single nodal agency.

- At the State level, the Scheme will be implemented through State KVIC Directorates, State Khadi and Village Industries Boards (KVIBs) and District Industries Centres (DICs) and banks.

- Under the scheme, loans are being provided by all Public Sector Banks, selected Private Sector Banks and Co-operative Banks with **margin money subsidy** (refers to the amount that the government contributes to beneficiaries availing PMEGP loan) being given by the Ministry of MSME through KVIC.

Categories of beneficiaries under PMEGP	Beneficiary's own contribution (of project cost)	Rate of Subsidy	
		Urban	Rural
General Category	10%	15%	25%
Special Category (including SC/ST/OBC /Minorities/ Women, Ex-Servicemen, Physically handicapped, NER, Hill, and Border areas etc)	5%	25%	35%

Scope

- The scheme is applicable to all viable projects in **rural as well as urban areas**, under the Micro enterprises sector.
- The maximum cost of the project admissible under the manufacturing sector is **Rs.25 lakhs** and the business/services sector is **Rs.10 lakhs**.
- Only one person from a family** is eligible for obtaining financial assistance under the scheme.
- Assistance under the Scheme is available **only for new projects**.

Eligible Entrepreneurs / Borrowers

- Any individual, above 18 years of age
- The beneficiaries should have passed at least VIII standard, for setting up of project costing above Rs.10 lacs in the Manufacturing Sector and above Rs. 5 lacs in the business /Service Sector,

- Self Help Groups
- Institutions registered under Societies Registration Act, 1860
- Production Co-operative Societies
- Charitable Trusts

Why in News?

- The Khadi and Village Industries Commission organized several awareness camps on the flagship Prime Minister's Employment Generation programme across the country.

4) Rashtriya Uchchatar Shiksha Abhiyan

About the Scheme

- Rashtriya Uchchatar Shiksha Abhiyan (RUSA) is a Centrally Sponsored Scheme which aims at **providing strategic funding to eligible state higher educational institutions**.

- The **Ministry of Education** is the nodal agency administering the program.

Funding

- The Central Funding (in the ratio of 90:10 for North-Eastern States, Sikkim, Jammu and Kashmir, Himachal Pradesh and Uttarakhand and 65:35 for Other States and UTs) would be **norm based and outcome dependent**.
- The Funding would flow from the Central Ministry through the State Governments/ Union Territories to the State Higher Education Councils before reaching the identified Institutions.
- The Funding to States would be made on the basis of **critical appraisal of State Higher Education Plans**, which would describe each State's strategy to address issues of equity, access and excellence in Higher Education.

Vision

- To attain higher levels of access, equity and excellence in the State higher education system with greater efficiency, transparency, accountability and responsiveness.
- With the assistance under RUSA Scheme, the state envisions an increase in the Gross Enrolment Ratio [G.E.R.], quality, access and equity in higher education and to build a system that is not only responsible for producing bright minds but can also support sophisticated research in a number of scientific and scholarly fields.

Priorities and Strategies

- The priorities of the state are:
 - Quality Assurance
 - Access and Equity
 - Infrastructure Development
 - Faculty Recruitment
 - Research and innovation.

Why in News?

- The Government has approved the scheme of Rashtriya Uchchatar Shiksha Abhiyan (RUSA) for continuation till 31.03.2026 or till further review, whichever is earlier.

Focus Areas

- New phase of RUSA targets to reach out the unserved, underserved areas; remote/ rural areas; difficult geographies; LWE areas; NER; aspirational districts, tier-2 cities, areas with low GER etc., and to benefit the most disadvantaged areas and SEDGs.
- Under the new phase of the scheme, State Governments will be supported for Gender inclusion, Equity Initiatives, ICT, Enhancing employability through vocationalisation & skill upgradation. States will also be supported for creation of new Model Degree Colleges.
- State Universities will be supported for Multi-Disciplinary Education and Research.

5) Pradhan Mantri Fasal Bima Yojana

About PMFBY

- PMFBY, launched in 2016, provides a **comprehensive insurance cover** against crop damage or loss arising out of unforeseen events thus helping in stabilising the income of the farmers and encouraging them for adoption of innovative practices.
- The scheme is administered by the **Ministry of Agriculture and Farmers' Welfare**.
- **Crops covered:** Oilseed crops; all food crops; Annual commercial/horticultural crops.
- **Premium:** There will be a uniform premium of 2% to be paid by farmers for all Kharif crops and 1.5% for all Rabi crops. For annual

commercial and horticultural crops, the premium to be paid by farmers will be 5%.

- **Coverage:** It aims at covering the losses suffered by farmers such as pre-sowing losses, post-harvest losses due to cyclonic rains and losses due to unseasonal rainfall in India. It also covers losses due to localized calamities such as inundation, hailstorm and landslide risks.
- **Exclusions:** The losses arising out of war and nuclear risks, malicious damage and other preventable risks are not covered under this scheme.
- The scheme is implemented by **empanelled general insurance companies**. The funds for the scheme come from the **Krishi Kalyan Kosh**.
 - *Krishi Kalyan Kosh (farmers' welfare fund) is an emergency fund to support farmers when they incur losses due to low rates of produce, crop damage due to natural disasters, and to assist them when there is a delay in payment of minimum support price (MSP) by the Centre.*

Major Changes

- In 2020, the Union Cabinet approved the revamp of the Pradhan Mantri Fasal Bima Yojana to enable quick and accurate yield estimation thus leading to faster claims settlement.
- The enrolment in the scheme has been made **voluntary for all farmers**, including those with existing crop loans. Earlier it was mandatory for loanee farmers to take insurance cover under this scheme.
- The **Centre has reduced its share of the premium subsidy** under

PMFBY from 50% to 25% in irrigated areas and 30% for unirrigated areas from the kharif season of 2020. Districts having 50 per cent or more irrigated area will be considered as irrigated area/district.

- Central share in premium subsidy is increased to **90 per cent** for north eastern states from the existing sharing pattern of 50:50.
- The Centre has given states/UTs the option to select any number of additional risk covers/features like prevented sowing, localised calamity, mid-season adversity, and post-harvest losses. Earlier, these risk covers were mandatory.

Why in News?

- The Pradhan Mantri Fasal Bima Yojana has successfully entered its 7th year of implementation.
- Over 36 crore farmer applications have been insured under PMFBY, with over INR 1,07,059 crores of claims have already been paid under the scheme.
- The scheme has been able to provide financial assistance to the most vulnerable farmers, as around **85% of the farmers enrolled with the scheme are small and marginal farmers**.

6) Ayushman Bharat

About the scheme

- Ayushman Bharat is a flagship scheme of Government of India launched to achieve the vision of **Universal Health Coverage (UHC)**. It aims to undertake path breaking interventions to holistically address the healthcare system at the primary, secondary and tertiary level, by adopting a continuum of care approach.
- Launched in 2018, it is an umbrella of two major health initiatives, namely **Health and Wellness**

Centres and Pradhan Mantri Jan Arogya Yojana (PM-JAY).

Health and Wellness Centres

- Under this **1.5 lakh** existing Sub Health Centres (SHC), Primary Health Centres (PHC) and Urban Primary Health Centres (UPHC) to be transformed as **Health Wellness Centres (HWC)** by 2022.
- These centres will deliver **Comprehensive Primary Health Care** that is **universal and free** to users, with a focus on wellness and the delivery of an expanded range of services closer to the community.
- HWC are envisaged to deliver **expanded range services** that go beyond Maternal and child health care services to include care for non-communicable diseases, palliative and rehabilitative care, Oral, Eye and ENT care, mental health and first level care for emergencies and trauma, including free essential drugs and diagnostic services.

Pradhan Mantri Jan Arogya Yojana

- It is one significant step towards the achievement of **Universal Health Coverage (UHC)** and **Sustainable Development Goal - 3** (SDG3: "Ensure healthy lives and promote well-being for all at all ages").
- AB-PMJAY will provide financial protection to **10.74 crore** poor, deprived rural families and identified occupational categories of urban workers' families as per the latest **Socio-Economic Caste Census (SECC) data** (approx. 50 crore beneficiaries) that form the bottom 40% of the Indian population. It will offer a benefit cover of **Rs. 5,00,000 per family per year**.
- The benefits of Rs. 5,00,000 are on a **family floater basis** which

means that it can be used by one or all members of the family.

- This cover will take care of **almost all secondary care and most of tertiary care procedures**.
- To ensure that nobody is left out (especially women, children and elderly) there will be **no cap on family size and age** in the scheme.
- The benefit cover will also include **pre-hospitalization and post-hospitalization expenses** such as diagnostics and medicines.
- A defined **transport allowance** per hospitalization will also be paid to the beneficiary.
- Benefits of the scheme are **portable across the country** and a beneficiary covered under the scheme will be allowed to take cashless benefits from **any public/private empanelled hospitals** across the country.

Implementation Strategy

- At the national level to manage, a **National Health Authority** has been set up. It will be chaired by the Minister of Health & Family Welfare which will enable the decision making at a faster pace, required for smooth implementation of the scheme.
- States/ UTs are advised to implement the scheme by a dedicated entity called State Health Agency (SHA).

Why in News?

- A study by the National Health Authority has revealed that **women account for 46.7% of the total authorized hospitalization** under Ayushman Bharat Pradhan Mantri Jan Arogya Yojana.
- According to the NHA, which is responsible for implementing AB PM-JAY across the country, **women comprise up to 49.6% of the total enrolled AB PM-JAY beneficiaries**.

- More than 10 states namely Manipur, Nagaland, Mizoram, Bihar, Chhattisgarh, Goa, Puducherry, Lakshadweep, Kerala and Meghalaya have a higher number of Ayushman Cards issued for women as compared to their male counterparts.

7) SMILE Scheme

What's in the news?

- The **Ministry of Social Justice & Empowerment** has launched the **Central Sector Scheme "SMILE-Support for Marginalised Individuals for Livelihood and Enterprise"**.
- The umbrella scheme is designed to **provide welfare measures to the Transgender community and the people engaged in the act of begging.**
- The Ministry has allocated 365 crore rupees for the scheme from 2021-22 to 2025-26.
- It includes **two sub-schemes** - '**Central Sector Scheme for Comprehensive Rehabilitation for Welfare of Transgender Persons**' and '**Central Sector Scheme for Comprehensive Rehabilitation of persons engaged in the act of Begging.**
- It aims to strengthen and expand the reach of the rights that give the targeted group the necessary legal protection and a promise to a secured life.
- The Sub-scheme - '**Central Sector Scheme for Comprehensive Rehabilitation for Welfare of Transgender Persons**' includes the following components-
 - Scholarships for Transgender Students;
 - Skill development/vocational training will be provided to attain capacity, capability and desirability so that they can sustain and live a life of dignity by engaging in self-employment;
- Composite Medical Health supporting Gender-Reaffirmation surgeries through selected hospitals;
- Housing in the form of 'GarimaGreh' where food, clothing, recreational facilities, skill development opportunities, recreational activities, medical support etc. will be provided;
- Setting up of Transgender Protection Cell in each state to monitor cases of offences and to ensure timely registration, investigation and prosecution of offences;
- E-Services (National Portal & Helpline and Advertisement) and other Welfare Measures.
- The focus of the sub-scheme '**Comprehensive Rehabilitation of persons engaged in the act of Begging**' are as follows-
 - Survey and identification;
 - Outreach work to mobilise the persons engaged in begging to avail the services available in the Shelter Homes;
 - The Shelter Homes will facilitate education for children engaged in the act of Begging and children of persons engaged in the act of Begging.
 - Comprehensive resettlement.
- The scheme strengthens and expands the reach of the Rights that give the targeted group the necessary legal protection and a promise to a secured life.

- It also keeps in mind the social security that is needed through multiple dimensions of identity, medical care, education, occupational opportunities and shelter.

8) Pradhan Mantri Kisan Sampada Yojana

About PMKSY

- The **Ministry of Food Processing Industries** has been implementing the Pradhan Mantri Kisan SAMPADA Yojana (PMKSY) since 2017.
- SAMPADA (Scheme for Agro-Marine Processing and Development of Agro-Processing Clusters) is a comprehensive package which **aims to create modern infrastructure with efficient supply chain management from farm gate to retail outlet.**
- It aims to provide a big boost to the growth of the food processing sector in the country and also help in providing better returns to farmers, reducing wastage of agricultural produce, increasing the processing level and enhancing the export of the processed foods.
- Under PMKSY the following schemes are to be implemented.
 - Mega Food Parks
 - Integrated Cold Chain, Value Addition and Preservation Infrastructure
 - Creation/Expansion of Food Processing/Preservation Capacities
 - Infrastructure for Agro Processing Clusters
 - Scheme for Creation of Backward and Forward Linkages
 - Food Safety & Quality Assurance Infrastructure

- Human Resources and Institutions

Objectives of PMKSY

- Creation of modern infrastructure for food processing mega food parks/ clusters and individual units
- To create effective backward and forward linkages - linking farmers, processors and markets
- To create robust supply chain infrastructure for perishables.

Why in News?

- The Ministry of Food Processing Industries has extended the Pradhan Mantri Kisan Sampada Yojana till 2026 with an allocation of Rs 4,600 crore.

9) FAME Scheme

About the Scheme

- The **National Electric Mobility Mission Plan (NEMMP) 2020** is a National Mission document providing the vision and the roadmap for the faster adoption of electric vehicles and their manufacturing in the country.
- As part of the NEMMP 2020, the **Department of Heavy Industry** (under the **Ministry of Heavy Industries & Public Enterprises**) formulated a Scheme viz. Faster Adoption and Manufacturing of (Hybrid &) Electric Vehicles in India (FAME India) Scheme in 2015.
- The objective of the FAME India scheme is to **promote manufacturing of electric and hybrid vehicle technology and to ensure sustainable growth of the same.**
- The scheme encourages adoption of Electric and hybrid vehicles by **offering upfront incentives** on purchase of Electric vehicles and establishing a necessary charging Infrastructure for electric vehicles.

- The scheme aims at **addressing the issue of environmental pollution and fuel security.**

Phase-I

- The Phase-I of this Scheme was initially launched for a period of 2 years, commencing from 1st April 2015, which was subsequently extended up to 31st March 2019.
- The 1st Phase of FAME India Scheme was implemented through four focus areas namely (i) Demand Creation, (ii) Technology Platform, (iii) Pilot Project and (iv) Charging Infrastructure.

Phase-II

- Phase-II of FAME India Scheme is being implemented for a period of 3 years w.e.f. 01st April, 2019.
- This phase focuses on **supporting electrification of public & shared transportation.**
- In addition, the **creation of charging infrastructure** is also supported for electric vehicles.

Key Objectives

- Encourage faster adoption of electric and hybrid vehicles by way of offering **upfront incentives on purchase of Electric vehicles.**
- Establishing necessary charging Infrastructure for electric vehicles.
- To address the issue of environmental pollution and fuel security.

Why in News?

- Under Phase-II of FAME India Scheme, more than 2 Lakh Electric Vehicles have been supported.

10) Rashtriya Gram Swaraj Abhiyan

Rationale of the Scheme

- **Mahatma Gandhi envisioned villages as mini-republics** and advocated that true democracy should begin with participation from the grass-root level by the people of every village.

- The **73rd Constitutional Amendment** mandated the **three tier Panchayati Raj Institutions (PRIs)** to function as units of local self-government and envisioned a people-led development at the grass roots level.
- The Panchayati Raj System was mandated with the **twin objectives of ensuring economic development and social justice for the people living in the rural areas.**

About RGSA

- The **Union Budget 2016-17** announced the Rashtriya Gram Swaraj Abhiyan (RGSA) as a **Centrally Sponsored Scheme** for **building capabilities of Panchayati Raj Institutions for achieving Sustainable Development Goals (SDGs).**
- Key local development challenges faced by the country viz. poverty, public health, nutrition, education, gender, sanitation, drinking water, livelihood generation, etc. are in sync with SDGs and fall within the realm of Panchayats.
- The Panchayats have therefore been designated as a key player for implementation of the United Nations SDGs to be achieved by 2030.
- The scheme **extends to all States and UTs including non-Part IX areas** where Panchayats do not exist.

Focus of the scheme

- The scheme has a focus on ensuring **basic orientation training for the Elected Representatives (ERs) of Panchayats**, within six months of their election and **refresher training** within 2 years.
- RGSA will have thrust for **PRI-SHG (Self-Help Group) convergence** to ensure effective community mobilisation and greater public

ownership of flagship programs of the government.

- **Use of e-governance and technology driven solutions** at Panchayat level will be increased to attain administrative efficiency, improved service delivery, and greater accountability.
- RGSA also aims at **enhancing capabilities of Panchayats to raise their own sources of revenue**.
- **Strengthening Gram Sabhas** to function effectively as the basic forum of people's participation is also a focus area of RGSA.
- It also aims at **promoting devolution of powers and responsibilities to Panchayats** according to the spirit of the Constitution and Provisions of the Panchayats (Extension to Scheduled Areas) Act, 1996.

Components of the scheme

The scheme consists of Central and State Components:

- The Central component comprises
 - National level activities viz. National Plan for Technical Assistance in collaboration with academic institutions/ institutions of excellence for various activities of Capacity Building & Training (CB&T) for PRIs,
 - Mission Mode Project (MMP) on e-Panchayat and
 - Incentivization of Panchayats.
- The State component relates to
 - Activities to be undertaken by State Governments for CB&T
 - Strengthening of Gram Sabhas in PESA areas,
 - Distance Learning Facility,
 - Support for Innovations,
 - Technical support to PRIs,

- Other activities for strengthening of Panchayats.

Why in News?

- Under the Centrally Sponsored Scheme of Rashtriya Gram Swaraj Abhiyan (RGSA), the Ministry Panchayati Raj has provided financial support to the tune of more than Rs. 1500 crores to the States/ Union Territories (UTs) during the last three years for various activities relating to strengthening of Panchayats.

11) Swarnajayanti Fellowships Scheme

About the scheme

- The Government of India under the **Ministry of Science and Technology** had instituted "**The Swarnajayanti Fellowships**" to commemorate India's fiftieth year of Independence in **1997**.
- Under this scheme a **selected number of young scientists**, with proven track record, are provided **special assistance and support to enable them to pursue basic research in frontier areas of science and technology**.
- Scientists selected for the award will be allowed to pursue unfettered research with freedom and flexibility in terms of expenditure as approved in the research plan.
- The project should contain **innovative research ideas** and it should have a potential of making an impact on R&D in the discipline.
- The fellowships are **scientist specific and not institution specific**, very selective and have close academic monitoring.

Nature of Support

- The award consists of a Fellowship of **Rs 25000/- per month** in addition to the salary drawn from

the parent Institute for a period of 5 years.

- The fellows selected along with their projects will be considered for funding by the **Science & Engineering Research Board (SERB)** as per SERB norms, for fellowship.

- *SERB is a statutory body of the Department of Science and Technology (DST), Ministry of Science and Technology, established through the SERB Act, 2008.*

- *Supporting basic research in emerging areas of Science & Engineering is the primary and distinctive mandate of the Board.*

- The duration of the fellowship will be for a **period not exceeding five years.**

Why in the news?

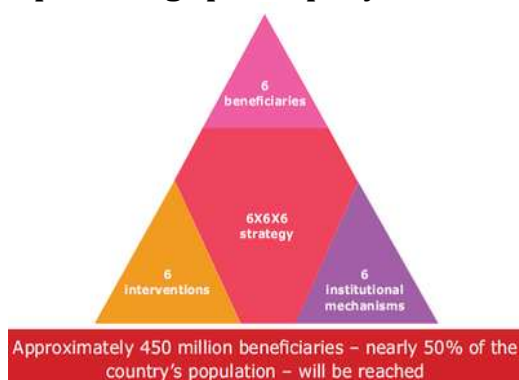
- The Ministry of Science and Technology has invited applications for the Swarnajayanti Fellowships Scheme.

Initiatives

1) Anemia Mukh Bharat

About the programme

- The Anemia Mukh Bharat is an initiative of the **Ministry of Health and Family Welfare** and **UNICEF** to **reduce the prevalence of Anemia all over India**.
- It follows a **6X6X6 strategy** (six target beneficiary groups, through six interventions and six institutional mechanisms) to **reduce prevalence of anemia by 3 percentage points per year**.



- Six population groups under AMB:**
 - 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)
- Six interventions:**
 - Prophylactic Iron and Folic Acid supplementation
 - Deworming
 - Intensified year-round Behaviour Change

Communication Campaign including ensuring delayed cord clamping in newborns

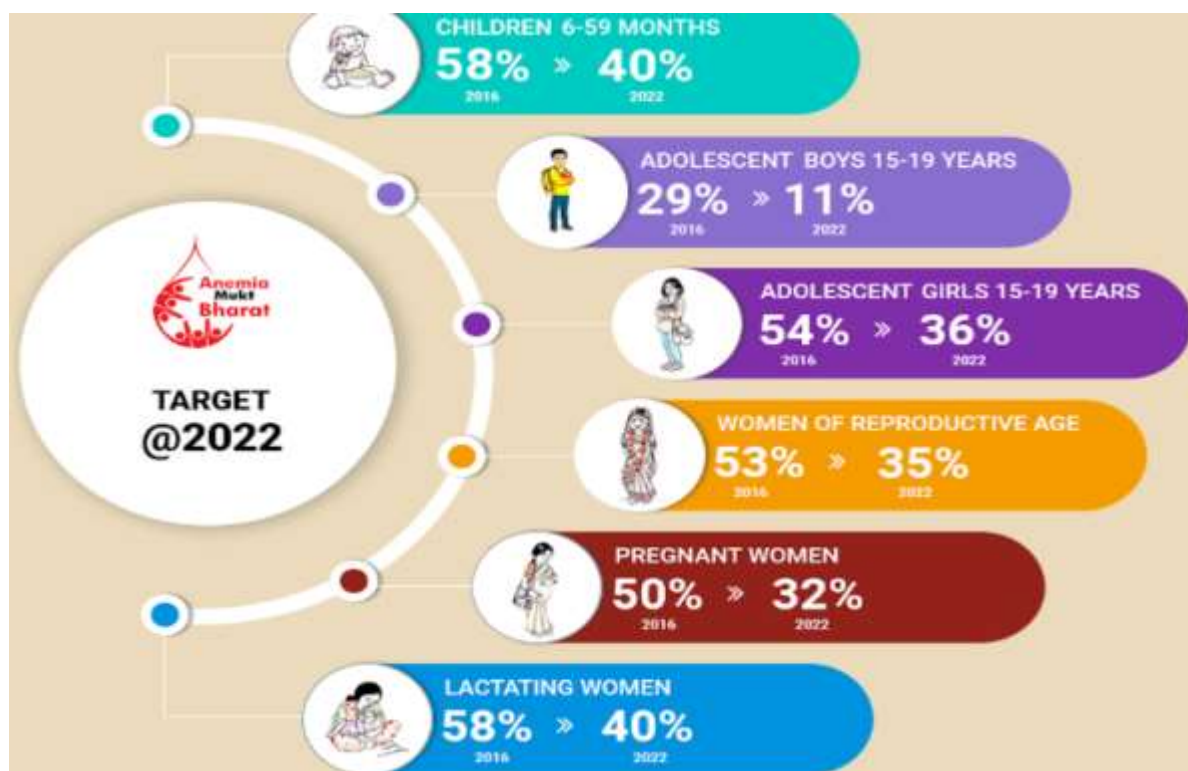
- Testing of anemia using digital methods and point of care treatment
- Mandatory provision of Iron and Folic Acid fortified foods in government-funded health programmes
- Addressing non-nutritional causes of anemia in endemic pockets, with special focus on malaria, haemoglobinopathies and fluorosis

Six institutional mechanisms:

- Intra-Ministerial Coordination
- National Anemia Mukh Bharat Unit
- National Centre of Excellence and Advanced Research on Anemia Control
- Convergence with other Ministries
- Strengthening Supply Chain and Logistics
- Anemia Mukh Bharat Dashboard and Digital Portal – One-Stop Shop on Anemia.

Target

- Anemia Mukh Bharat aims to **reduce the proportion of Anemia among children to 40%, pregnant women to 32% and lactating women to 40% by 2022**.



Why in News?

- Concerned at the rise in cases of Anemia in India across the spectrum of its population, as revealed by the National Family Health Survey-5 (*Refer Pulse December 2021 edition*), the Centre announced that it would work in coordination with States that showed the most serious deterioration.
- The National Family Health Survey-5 found that **Anemia in children** had increased from 58.6% in the NFHS-4 to **67%** in the NFHS-5. The NFHS-4 was conducted in 2015-16 and NFHS-5 in 2019-21.
- Anemia in pregnant women increased to 52.2%** from 50.4%, and the **percentage of women (15-49 years) who are anaemic** also increased from 53% to **57%**. The **percentage of men aged 15-49 who were anaemic** also rose from 22.7% to **25%**.
- The current NFHS shows lack of progress towards the goals set by Anemia Mukta Bharat which aims to reduce the proportion of Anemia

among children to 40%, pregnant women to 32% and lactating women to 40% by 2022.

About Anemia

- Anemia is commonly characterised by **low levels of iron in the body**. India has for decades diagnosed that a large fraction of its population, particularly women, are anaemic, and has an **iron supplementation programmes** ongoing in several States for years.
- Anemia is also believed to result from a **lack of nutrition and inadequate intake of fresh fruits and vegetables** as well as a **deficiency of vitamin B-12**.

2) One Nation One Ration Card PDS in India

- Under the **National Food Security Act, 2013**, about 81 crore persons are entitled to buy subsidized foodgrain — rice at Rs 3/kg, wheat at Rs 2/kg, and coarse grains at Re 1/kg — from their designated Fair Price Shops (FPS) of the **Targeted**

Public Distribution System (TPDS).

- PDS is operated under the **joint responsibility** of the Central and the State Governments.
- The Central Government, through **Food Corporation of India (FCI)**, has assumed the responsibility for procurement, storage, transportation and bulk allocation of food grains to the State Governments.
- The **operational responsibilities** including allocation within the State, identification of eligible families, issue of Ration Cards and supervision of the functioning of Fair Price Shops (FPSs) etc., rests with the State Governments.

What is the one 'One Nation, One Ration Card' system?

- Earlier, a ration cardholder can buy food grains only from an FPS that has been assigned to her in the locality in which she lives.
- However, under the 'One Nation, One Ration Card' system, the beneficiary will be able to buy subsidised foodgrains from **any FPS across the country**.
- The biggest beneficiaries will be **migrant workers** who move to other states to seek better job opportunities.

How will the system of ration card portability work?

- Ration card portability is aimed at providing **intra-state as well as inter-state portability** of ration cards.
- The new system, based on a technological solution, will identify a beneficiary through **biometric authentication** on electronic Point of Sale (ePoS) devices installed at the FPSs, and enable that person to purchase the quantity of foodgrains to which she is entitled under the NFSA.

- While the **Integrated Management of Public Distribution System (IM-PDS) portal** (<http://www.impds.nic.in/>) provides the technological platform for the inter-state portability of ration cards, enabling a migrant worker to buy foodgrains from any FPS across the country, the other portal (**annavitran.nic.in**) hosts the data of distribution of foodgrains through E-PoS devices within a state.
- Once the 'one nation one ration card' system takes effect in a given state, the **beneficiary family can purchase food grains from different locations**. For example, a migrant worker staying in a different state can buy his or her share of the subsidized food grains from any FPS in the state where they work while the remaining family members will be able to buy their quota of the supplies back at home.

Since when has the One Nation, One Ration Card System been in the works?

- Work on this ambitious project started about three years back when the government launched a scheme called **Integrated Management of Public Distribution System (IM-PDS)** in April 2018 to reform the public distribution system in the country.
- The PDS system was marred with inefficiency leading to leakages in the system. To plug the leakages and make the system better, the government started the reform process.
- For this purpose, it used a technological solution involving the **use of Aadhaar to identify beneficiaries**. Under the scheme, the **seeding of ration cards with Aadhaar** is being done.

- Simultaneously, **PoS machines** are being installed at all FPSs across the country. Once 100 per cent of Aadhaar seeding and 100 per cent installation of PoS devices is achieved, the national portability of ration cards will become a reality.

Why in News?

- The government has announced that as many as 77 crore people in the country have been covered

under the 'One Nation One Ration Card' scheme through which beneficiaries can take their share of food grains from anywhere in the country.

- The scheme is now available in 35 states and union territories.

Environment

1) Marine Heatwaves rising around India

What is a Marine Heatwave?

- Marine heatwaves are **periods of extremely high temperatures** in the ocean. They can occur in **summer or winter**.
- The most common drivers of marine heatwaves include **ocean currents, winds and climate models like El-Nino**.
- Marine heat waves **affect ecosystem structure and drastically affect the Biodiversity**.
- These events are linked to **coral bleaching, seagrass destruction, and loss of kelp forests, affecting the fisheries sector adversely**.
- Eg: In 2016, marine heatwaves across northern Australia led to severe bleaching of the Great Barrier Reef and have been speculated to be linked to mangrove die-offs in the Gulf of Carpentaria.

Why in News?

- An underwater survey showed that **85% of the corals in the Gulf of Mannar** near the Tamil Nadu coast **got bleached after the marine heatwave in May 2020**.

News in detail

- The study shows that the **Western Indian Ocean region** experienced the largest increase in marine heatwaves at a rate of about 1.5 events per decade, followed by the **north Bay of Bengal** at a rate of 0.5 events per decade.
- The marine heatwaves in the Western Indian Ocean and the Bay of Bengal **increased drying conditions over the central Indian subcontinent** correspondingly. There is a significant **increase in the rainfall**

over south peninsular India in response to the heatwaves in the north Bay of Bengal.

- These changes are in response to the modulation of the monsoon winds by the heatwaves. This is the first time that a study has demonstrated a close link between **marine heatwaves and atmospheric circulation and rainfall**.
- Climate model projections suggest further warming of the Indian Ocean in the future, which will very likely **intensify the marine heatwaves** and their impact on the monsoon rainfall.

Heatwaves on land

- Typically, heatwaves on land are associated with the **north and northwest of India** and over **coastal Andhra Pradesh, north Odisha and parts of West Bengal**.
- There has been an increase in the number of affected regions in recent years, with more parts of the **Himalayan plains, regions north of Andhra Pradesh and Central India** also registering more heatwaves.

2) Sustainable Cities India program

What's in the news?

- The **World Economic Forum (WEF) and the National Institute of Urban Affairs (NIUA)** have signed a Memorandum of Understanding (MoU) to collaborate on a jointly designed 'Sustainable Cities India program'.
- The program aims to **create an enabling environment for cities to generate decarbonization solutions across the energy, transport, and the built environment sectors**.

- This initiative is particularly noteworthy as it comes after Prime Minister Narendra Modi stated India's commitment to turn **net zero by 2070** as a climate mitigation response at COP26 (*Refer Pulse November 2021 edition*).

About the Program

- The 'Sustainable Cities India program' intends to enable cities to decarbonize in a systematic and sustainable way that will reduce emissions and deliver resilient and equitable urban ecosystems.
- The WEF and NIUA will adapt the **Forum's City Sprint process** and **Toolbox of Solutions for decarbonization** in the context of five to seven Indian cities across two years.
 - The **City Sprint process** is a series of **multi-sectoral, multi-stakeholder workshops** involving business, government, and civil society leaders to enable decarbonization, especially through clean electrification and circularity.
 - The City Sprint process uses the **Toolbox of Solutions** - a **digital platform** containing over 200 examples of clean electrification, efficiency and smart infrastructure best practices and case studies across buildings, energy systems and mobility from over 110 cities around the world.

Significance

- As per the **World Economic Forum's Global Risks Report 2022**, densely populated countries that are highly dependent on agriculture, such as India, are

especially vulnerable to climate insecurity.

- Decarbonization in cities is a real opportunity to keep global warming well below 2°C and cities in India can make an enormous contribution in reaching this goal.

Related Information

About WEF

- The World Economic Forum is an **international non-governmental organization** headquartered in Geneva, Switzerland.
- It brings together political and business leaders each year to discuss major issues that impact the global economy. These include but are not limited to political, economic, social, and environmental concerns.
- The WEF is best known for its **annual World Economic Forum Meeting at Davos**.

About NIUA

- Established in 1976, the National Institute of Urban Affairs (NIUA) is **India's leading national think tank on urban planning and development**.
- As a hub for the generation and dissemination of cutting-edge research in the urban sector, NIUA seeks to provide innovative solutions to address the challenges of a fast urbanizing India, and pave the way for more inclusive and sustainable cities of the future.

3) Coastal Vulnerability Index

What's in the news?

- The **Indian National Centre for Ocean Information Services (INCOIS)** has carried out coastal vulnerability assessment for the entire Indian coast at state level to bring out an Atlas Comprising 156 maps to prepare a Coastal Vulnerability Index (CVI).

What is Coastal vulnerability?

- Coastal vulnerability is a **spatial concept that identifies people and places that are susceptible to disturbances resulting from coastal hazards**.
- Hazards in the coastal environment, such as coastal storms and erosion, pose significant threats to coastal physical, economic, and social systems.

Findings

- The maps determine the **coastal risks due to future sea-level rise** based on the physical and geological parameters for the Indian coast.
- From the Coastal Vulnerability Index, it can be delineated that Gujarat's 124 coastal kilometers is going to get affected or 5.36%, Maharashtra 11 km or 1.22% and then Karnataka & Goa 48 km or 9.54%, Kerala 15 km or 2.39%, Tamil Nadu 65 km or 6.38%, Andhra Pradesh 6 km or 0.55 %, Odisha 37 km or 7.51% West Bengal 49 km or 2.56%, Lakshadweep Islands 1 km or 0.81%, Andaman Islands 24 km or 0.96km and Nicobar Islands 8 km or 0.97%.
- Coastal vulnerability assessments can be useful information for **coastal disaster management and building resilient coastal communities**.

Why does India need a climate vulnerability index?

- According to Germanwatch's 2020 findings, **India is the seventh-most vulnerable country with respect to climate extremes**.
- Extreme weather events have been increasing in the country. Another study has found that **three out of four districts in India are extreme event hotspots, with 40 per cent of the districts**

exhibiting a swapping trend, that is – traditionally flood-prone areas are witnessing more frequent and intense droughts and vice-versa.

- Further, the **Intergovernmental Panel on Climate Change (IPCC)** states that **every degree rise in temperature will lead to a three per cent increase in precipitation**, causing increased intensification of cyclones and floods.

About INCOIS

- INCOIS is an **autonomous body under the Ministry of Earth Sciences (MoES)**.
- The major objectives of INCOIS are:
 - To establish Early Warning System for Tsunami and Storm Surges,
 - To undertake, aid, promote, guide and co-ordinate research in the field of ocean information and services including Satellite Oceanography,
 - To establish, maintain and manage, hire the systems for data acquisition, analysis, interpretation and archival for Ocean Information and Services,
 - INCOIS other major work has been on identifying the Potential Fishing Zones (PFZ) for the fishermen community.

4) Sariska Tiger Reserve

About the Reserve

- Sariska Tiger Reserve is situated in **Rajasthan, India**.
- Nestled in the **Aravali hills**, the tiger reserve is home to numerous animals such as jungle cats, rhesus macaque, sambhar, chital, wild boar, etc.
- The sanctuary is strewn with ruins of ancient temples dating back to

the 10th and 11th centuries. Some of the highlights are the ruins of the **Kankwari Fort** and the 10th century **Neelkanth temples**.

- Sariska is the **first tiger reserve to have successfully relocated Royal Bengal tigers in India**. The tiger reserve witnessed the first-of-its-kind tiger relocation from the **Ranthambore National Park** by helicopter in 2008 after the felines became extinct in the sanctuary.

Why in News?

- Due to the various measures for habitat management for tigers, the **tiger population in the Sariska Tiger Reserve has gone up to 25**.

5) National Adaptation Fund for Climate Change

About NAFCC

- The National Adaptation Fund for Climate Change (NAFCC) was established in 2015 to **meet the cost of adaptation to climate change for the State and Union Territories of India that are particularly vulnerable to the adverse effects of climate change**.
- Considering the existing arrangement with NABARD as **National Implementing Entity (NIE) for Adaptation Fund (AF) under Kyoto Protocol** and its

presence across the country, **NABARD** has been designated as **National Implementing Entity (NIE) for implementation of adaptation projects under NAFCC** by Government of India.

- Under this arrangement, NABARD would perform roles in facilitating identification of project ideas/concepts from State Action Plan for Climate Change (SAPCC), project formulation, appraisal, sanction, disbursement of funds, monitoring & evaluation and capacity building of stakeholders including State Governments.

Why in News?

- NAFCC is implemented in project mode and till date, 30 projects are sanctioned in 27 States and UTs.
- It includes (i) Promotion of integrated farming system of Kaipad in coastal wetlands of North Kerala (ii) Management and rehabilitation of coastal habitats and biodiversity for climate Change Adaptation and Sustainable Livelihood in Gulf of Mannar, Tamil Nadu and (iii) Climate Resilient interventions in Dairy Sector in coastal and Arid areas in Andhra Pradesh, etc.

Flora & Fauna

1) Great Indian Bustard

About GIB

- Great Indian Bustard (GIB) is one of the heaviest flying birds **endemic to the Indian subcontinent**.
- **Protection Status:** IUCN Red List: **Critically Endangered**; CITES: **Appendix I**; Wildlife Protection Act (1972): **Schedule I**.
- Historically, the great Indian bustard was distributed throughout Western India, spanning 11 states, as well as parts of Pakistan. Today, its population is **confined mostly to Rajasthan and Gujarat**. Small populations occur in Maharashtra, Karnataka and Andhra Pradesh.

Conservation Issues

- The biggest threat to this species is hunting, which is still prevalent in Pakistan. This is followed by occasional poaching outside Protected Areas, collisions with high tension electric wires, fast moving vehicles and free-ranging dogs in villages.
- Other threats include habitat loss and alteration as a result of widespread agricultural expansion and mechanized farming, infrastructural development such as irrigation, roads, electric poles, as well as mining and industrialization.

Conservation strategies

- The only opportunity to potentially recover this species remains in the **Thar landscape of Rajasthan**, where the birds are now limited to two extant populations – one inside **Desert (National Park) Sanctuary** near Jaisalmer, and the second population located in the **grasslands and agricultural lands of Pokhran and Ramdeora**.

- The Great Indian Bustard has also been identified as one of the species for the **recovery programme for critically endangered species** of the Ministry of Environment, Forest and Climate Change (MoEFCC).



Why in News?

- The Supreme Court has directed the Rajasthan and Gujarat governments to file their status reports on converting overhead electric cables into underground power lines, wherever feasible, within a year to protect the endangered Great Indian Bustard from extinction.
- In April last year, the top court, in a bid to save the GIB, directed the Gujarat and Rajasthan governments to convert overhead electric cables into underground power cables, wherever feasible, within a year to prevent death of the birds due to collision and electrocution.

Related Information

Recovery programme for critically endangered species

- The programme is a component of the centrally funded scheme, **Integrated Development of Wildlife Habitats (IDWH)**.
 - *Started in 2008-09, IDWH is meant for providing support to protected areas (national parks, wildlife sanctuaries, conservation reserves and community reserves except tiger reserves), protection of*

wildlife outside protected areas and recovery programmes for saving critically endangered species and habitats.

- The recovery programme includes **more than 20 wildlife species.**
- It includes Snow Leopard, Bustard, Dolphin, caracal, Hangul, Nilgiri Tahr, Marine Turtles, Dugongs, Edible Nest Swiftlet, Asian Wild Buffalo, Nicobar Megapode, Manipur Brow-antlered Deer, Vultures, Malabar Civet, Indian Rhinoceros, Asiatic Lion, Swamp Deer, Jerdon's Courser, the Northern River Terrapin, Clouded Leopard, Arabian Sea Humpback Whale and Red Panda.

2) Cheetah translocation

Asiatic Cheetah

- Asiatic cheetah is classified as a **"critically endangered"** species by the IUCN Red List, and is believed to survive only in **Iran.**
- Asiatic cheetahs were once widespread across India but were eradicated in the country as they were hunted for sport.
- In 1952, Asiatic cheetah was **declared extinct** from India, after decades of human intervention, hunting and habitat degradation.
- Asiatic cheetahs are almost identical in appearance to their better known African cousins. However, there are subtle differences.
 - The Asiatic cheetah is slightly smaller and paler than its African cousin.



African Cheetah

- The African cheetah is spread out across Africa from Northwest Africa, East Africa, and Southern Africa. With a bigger territory, the African cheetahs have higher populations compared to Asiatic cheetahs.
- They are categorised as **Vulnerable** in the IUCN Red List.

Why in News?

- A delegation from India has reached Namibia in southern Africa in connection with a plan to reintroduce the cheetah in India in **Kuno National Park.** They will finalise details on translocating African cheetahs to India.

African Cheetah Introduction Project in India

- The cheetah, the **world's fastest land animal**, had gone extinct in India some 70 years ago and the plans to reintroduce the majestic big cat into the wild here again has been in the works for over a decade now.
- The **'African Cheetah Introduction Project in India'** was conceived in 2009, but it failed to take off for over a decade. It was only in 2020 that the Supreme Court agreed to the translocation of cheetahs from Africa to India. The cheetahs will be sourced mainly from South Africa and Namibia.

Why do conservationists want to reintroduce cheetahs?

- A section of conservationists has long advocated the reintroduction of the species in the country.
- They argue that introductions of large carnivores have increasingly been recognised as a **strategy to conserve threatened species and restore ecosystem functions**.
- The cheetah is the only large carnivore that has been extirpated, mainly by over-hunting in India in historical times. India now has the **economic ability** to consider restoring its lost natural heritage for ethical as well as ecological reasons.

About Kuno National Park

- It is located in **Madhya Pradesh**. Earlier it was a wildlife sanctuary but in 2018 it was given national park status.
- The **Kuno river** flows through the national park.
- Bio-Geographically this area falls under the **Kathiawar-Gir dry deciduous forest ecoregion** and the forest types found in this area include the Northern tropical dry deciduous forest, Southern tropical dry deciduous forest, Dry Savannah forest & grassland and Tropical riverine forest.
- The main predators in the protected area are Indian leopard, jungle cat, sloth bear, dhole, Indian wolf, golden jackal, striped hyena and Bengal fox.
- In the 1990s, it was selected as a possible site to implement the **Asiatic Lion Reintroduction Project**, which aimed at establishing a second lion population in India, apart from **Gir National Park in Gujarat**.

3) World Pangolin Day

About Pangolin



- It is a small toothless, sticky-tongued creature which thrives on ants and termites, and lives in hollow trees and burrows.
- When threatened, the pangolin **curls up into a tight ball**, exposing its scales to prevent attack by predators. But these scales have been the reason why pangolins have reached endangered status.
- Pangolins are the **most trafficked mammal** in the world with demand primarily in Asia and in growing amounts in Africa for their meat and scales.
- **8 species of pangolins** (including **Indian pangolin**) can be found across Asia and Africa. All of these have shown decline in their population. Indian Pangolin is **widely distributed in India, except the arid region, high Himalayas and the North-East**.
- Asian pangolins:
 - Chinese pangolin (*Manis pentadactyla*) – Critically Endangered
 - Sunda pangolin (*Manis javanica*) – Critically Endangered
 - Philippine pangolin (*Manis culionensis*) – Critically Endangered
 - Indian pangolin (*Manis crassicaudata*) – Endangered
- African pangolins:

- White-bellied pangolin (*Phataginus tricuspis*) – Endangered
- Giant pangolin (*Smutsia gigantea*) – Endangered
- Ground pangolin (*Smutsia temminckii*) – Vulnerable
- Black-bellied pangolin (*Phataginus tetradactyla*) – Vulnerable
- The **Convention on International Trade in Endangered Species (CITES)** has listed all **eight species of pangolins in Appendix I** of the Convention to end their international commercial trade.
- **World Pangolin Day** is celebrated every 3rd Saturday of February each year.

Why in News?

- On World Pangolin Day, Wildlife organization TRAFFIC that works to help study, monitor, and influence action to curb illegal wildlife trade, has compiled data that shows over 1,141 Pangolin confiscations involving both African and Asian pangolin species, have taken place in Asia from 2015-2021.

- Between 2015-2021, India topped the list of seizures with 287 incidents, while Mainland China topped the list of seizures by volume and individuals of the threatened pangolins, the most trafficked wild mammal in the world.

About TRAFFIC

- TRAFFIC is a leading **non-governmental organisation** working globally on trade in wild animals and plants in the context of both biodiversity conservation and sustainable development.
- Founded in 1979, it is a **joint program of the World Wildlife Fund (WWF) and the International Union for Conservation of Nature (IUCN)**.
- TRAFFIC's goal is to ensure that trade in wild plants and animals is not a threat to the conservation of nature.
- It is headquartered in Cambridge, United Kingdom.

Agriculture

1) e-NAM

About e-NAM

- Launched in 2016, the National Agricultural Market (e-NAM) is a pan-India electronic trading portal which aims to connect almost 7,000 existing mandis run by Agricultural Produce Market Committees (APMC) to create a **unified national market for agricultural commodities**.
- e-NAM is **completely funded by the Central Government** and **implemented by Small Farmers Agribusiness Consortium (SFAC)**.

Benefits of the portal

- e-NAM basically **increases the choice of the farmer** when he brings his produce to the mandi for sale. Local traders can bid for the produce, as also traders on the electronic platform sitting in other States/Mandis. The farmer may choose to accept either the local offer or the online offer.
- Thus the e-NAM platform promotes better marketing opportunities for the farmers to sell their produce through an online competitive and transparent **price discovery**

system and online payment facility.

- It also promotes **prices commensurate with quality of produce**.
- The e-NAM portal provides **single window services** for all APMC related information and services. This includes commodity arrivals, quality & prices, buy & sell offers & e-payment settlement directly into farmers' account, among other services.
- Farmers can access the information on e-NAM easily through their **mobile phones from anywhere**. This online trading platform aims at reducing transaction costs, bridging information asymmetry and helps in expanding the market access for farmers.

Why in News?

- As on 31st December 2021, **1000 mandis** of 18 States and 03 Union Territories have been integrated with e-NAM platform. More than 1.72 Crore farmers and 2 lakh traders have registered themselves on e-NAM platform.
- As per the Union Budget Announcement 2020-21, **additional 1000 mandis to be integrated with e-NAM platform**.

Economy

1) Small Finance Banks

About Small Finance Banks

- The small finance banks (SFB) primarily undertake basic banking activities of acceptance of deposits and lending to **unserved and underserved sections** including small business units, small and marginal farmers, micro and small industries and unorganised sector entities.
- There are **no restrictions in the area of operations** of small finance banks.
- The small finance banks are **subject to all prudential norms and regulations of RBI** as applicable to existing commercial banks including requirement of maintenance of Cash Reserve Ratio (CRR) and Statutory Liquidity Ratio (SLR).
- The small finance banks will be required to extend **75 per cent of its Adjusted Net Bank Credit (ANBC)** to the sectors eligible for classification as priority sector lending (PSL) by the Reserve Bank.
- At least 50 per cent of its loan portfolio should constitute loans and advances of upto Rs. 25 lakh.
- They are eligible to provide **credit card and debit card** facilities and associational services.

Why in News?

- The RBI has granted in-principle approval to two private entities to set up a Small Finance Banks.

2) Comprehensive Economic Partnership Agreement

What's in the news?

- India and the United Arab Emirates (UAE) have signed a Comprehensive Economic Partnership Agreement (CEPA) covering goods, services and digital

trade, among others, that will **allow 90% of the country's exports a duty-free access to the Emirates.**

Background

- India and the UAE enjoy excellent bilateral relations, which are deep rooted and historical, sustained and nurtured by close cultural and civilizational affinities, frequent high-level political interactions, and vibrant people to people linkages.
- India and the UAE have been each other's leading trading partners. From US\$ 180 million per annum in the 1970s, India-UAE bilateral trade has steadily increased to **US\$ 60 billion** in FY 2019-20 making the **UAE, India's third largest trading partner behind the US and China.**
- **The UAE is also the second largest export destination of India.** It is also an **important source of India's energy supply** and a key partner of India in the development of strategic petroleum reserves, upstream, and downstream petroleum sectors.

About the Pact

- The bilateral trade pact is **India's first in the region and the first comprehensive trade agreement with any country in a decade.**
- The Agreement is a **comprehensive agreement**, which will cover Trade in Goods, Rules of Origin, Trade in Services, Technical Barriers to Trade (TBT), Sanitary and Phytosanitary (SPS) measures, Dispute Settlement, Movement of Natural Persons, Telecom, Customs Procedures, Pharmaceutical products, Government Procurement, IPR, Investment, Digital Trade and Cooperation in other Areas.

Salient Features of India-UAE CEPA

- CEPA provides for an **institutional mechanism** to encourage and improve trade between the two countries. The CEPA between India and the UAE covers almost all the tariff lines dealt in by India and the UAE.
- **India will benefit from preferential market access provided by the UAE on over 97% of its tariff lines** which account for 99% of Indian exports to the UAE in value terms, especially for all labour-intensive sectors such as Gems and Jewellery, Textiles, leather, footwear, etc. India will also be offering **preferential access to the UAE on over 90% of its tariff lines.**
- As regards trade in services, India has offered **market access to the UAE in around 100 sub-sectors**, while **Indian service providers will have access to around 111 sub-sectors** from broad service sectors such as 'business services', 'communication services', 'educational services', 'tourism and travel related services', 'recreational cultural and sporting services', etc.
- Both sides have also agreed to a **separate Annex on Pharmaceuticals** to facilitate access of Indian pharmaceuticals products, especially automatic registration and marketing authorisation in 90 days for products meeting specified criteria.

Goods excluded from the deal

- India has **excluded certain goods** from the agreement through a **"sensitive list" of products** amounting to 10 per cent of tariff lines that are excluded completely from the agreement.
- Dairy, fruits, vegetables, cereals, tea, coffee, sugar, food

preparations, tobacco, toys, plastics, scrap of aluminium, and copper are among the products that are excluded from the pact. Certain other areas such as those that have seen sharp growth in domestic production or areas where the government is incentivising manufacturing through production-linked incentive schemes have also been excluded from the agreement.

- The government has emphasised that this agreement contains **strict rules of origin provisions** to prevent other countries from using the agreement to reroute their exports through UAE to benefit from lower tariffs.
- Most products require a value addition of 40 per cent in the exporting country under the new agreement to qualify for lower tariffs under the agreement.
- The agreement also has **safeguard mechanisms** that would be triggered if there was a significant surge in imports of a specific product in either country.

Significance

- The India-UAE CEPA will further cement the already deep, close and strategic relations between the two countries and will create new employment opportunities, raise living standards, and improve the general welfare of the peoples of the two countries.
- It is expected that the CEPA will lead to an increase in bilateral trade from the current \$60 bn to **\$100 bn in the next 5 years** and create lakhs of jobs in both countries.
- The agreement will also **pave the way for India to enter the UAE's strategic location**, and have relatively **easy access to the Africa market** and its various

trade partners which can help India to become a part of that supply chain especially in handlooms, handicrafts, textiles and pharma.

Timelines

- The Agreement is expected to enter into force on **01 May 2022**.

3) Semicon India Programme

About the Programme

- In order to widen and **deepen electronic manufacturing and ensure development of a robust and sustainable Semiconductor and Display ecosystem in the country**, the Union Cabinet had approved the Semicon India Programme in December last year.
- The initiative will position the country as a global hub for electronic system design and manufacturing.
- Through the program's scope, the government hopes to attract large global chip makers to make India their production base. India wants to achieve technological leadership in these areas of strategic importance – also **key to the security of the country's critical information infrastructure**.
- The programme has been approved with an outlay of 76 thousand crore rupees.

Implementation

- **India Semiconductor Mission (ISM)** has been set up as a dedicated institution for the Semicon India Programme.
- ISM will coordinate with the applicant companies who have also reached out to states to provide access to world class infrastructure.
- It will work closely with the state governments to establish high-tech clusters with 300 to 500 acres of developed land, 100 Kilo Volt Ampere Power, 50 Million Litre Per

Day Water, availability of natural gases and common facility centres for testing and certification.

Why in News?

- The Semicon India Programme has started receiving proposals from companies for Semiconductor and Display Fabs (fabrication plants).

Significance

- Semiconductors are the building blocks of electronic devices ranging from smartphones and cloud servers to modern cars, industrial automation, critical infrastructure and defence systems. They are at the **core of fourth industrial revolution technologies**.
- India, like other countries across the world, **imports most of its chips from Taiwan, Singapore, Hong Kong, Thailand, and Vietnam**.
- If a country is looking to be self-sufficient or self-reliant, it cannot do without a vibrant semiconductor industry.
- The Semicon India Programme will not only boost semiconductor manufacturing but will also help India achieve **self-sufficiency, improve data security, and gain digital independence**.
- Developing domestic semiconductor manufacturing capabilities will have a **multiplier effect** across different sectors of the economy and will contribute significantly to achieving a **USD 1 trillion digital economy and a USD 5 trillion GDP by 2025**.

Way Forward

Fab clustering

- Fab clustering, where key semiconductor supply chains and related businesses are in one place to create backward and forward linkages, would play a key role in creating an ecosystem for the semiconductor industry.

- Such a site should be chosen based on
 - Ability of the location to act as a force multiplier
 - High-quality infrastructure along with uninterrupted power availability
 - Availability of semiconductor grade Ultra Pure Water to the extent of 10 MLD per fab is also a key requirement.

Focus on Research and Development

- We need to focus on encouraging Indian manufacturers and start-ups to enter and master complex R&D and manufacturing verticals.

- Indian engineers must be encouraged to set up their design start-ups with handsome government grants and tax incentives.
- Premier research institutions such as the Indian Institute of Science should also be asked to work aggressively on R&D in chip designing and manufacturing.

Organisations

1) Organisation for the Prohibition of Chemical Weapons

About OPCW

- The Organisation for the Prohibition of Chemical Weapons (OPCW) is an intergovernmental organisation and the **implementing body for the Chemical Weapons Convention (CWC)**.
- The OPCW, with its 193 Member States (including **India**), oversees the global endeavour to permanently and verifiably eliminate chemical weapons.
- Its headquarters are located in The Hague, Netherlands.

About CWC

- The Chemical Weapons Convention is a **universal, non-discriminatory, multi-lateral, disarmament treaty** which prohibits the development, production, stock-piling and use of chemical weapons and monitors its elimination in order to secure a chemical weapons free world.
- The Convention entered into force in **1997**. As on date, 193 countries are parties to the Convention.
- **India** is a signatory and party to the convention. India, pursuant to provisions of the Convention enacted the **Chemical Weapons Convention Act, 2000**.

Why in News?

- The Organisation for the Prohibition of Chemical Weapons has said that the U.S. is in the process of completing destruction of its remaining chemical weapons stockpiles.
- So far, the U.S. has destroyed 97.65% of its most dangerous Category 1 chemical weapons. All Category 2 and 3 weapons have been destroyed.

2) Organisation of the Islamic Cooperation

About OIC

- The Organisation of the Islamic Cooperation (OIC) is the **world's second largest multilateral body after the UN**. It counts **57 members, all of which are Islamic countries or Muslim majority members**.
- The OIC's stated objective is to safeguard and protect the interests of the Muslim world in the spirit of promoting international peace and harmony among various people of the world.
- OIC was established by the First Islamic Summit Conference held in Morocco in **1969**.
- It was known as the Organisation of Islamic Conference until 2011.

India & OIC

- As a country with the **world's second largest Muslim community**, India had been invited to the founding conference in Morocco in 1969, but was humiliatingly ejected at Pakistan's behest. Then Agriculture Minister Fakhruddin Ali Ahmed was dis-invited upon arrival in Morocco.
- In 2006, Saudi Arabia invited Delhi to **join as an observer**. But **India stayed away** because of a multiplicity of reasons, which includes that as a secular country, it did not want to join an organisation founded on religion. Plus there was the risk that improving bilateral relations with individual member states would come under pressure in a grouping, especially on issues such as Kashmir.

Why in News?

- The 48th session of the Council of Foreign Ministers of the Organisation of Islamic

Cooperation was held recently in Islamabad.

3) National Commission for Women

About NCW

- The National Commission for Women (NCW) is a **statutory body** formed in **1992** under the **National Commission Act 1990**. It is the apex national level organisation of India with the mandate of protecting and promoting the interests of women.
- It provides the government with advice to make policies and laws that are more prone to protect and safeguard the rights of women. The commission also has the powers that are vested upon with a **civil court**.

Objectives

- The objectives of NCW are as follows:
 1. To suggest the government regarding policies regarding women,
 2. A platform to redress the grievances,
 3. To make recommendations relating to legislation measures,
 4. To review legal and constitutional safeguards for women.

Powers

- Powers of NCW:
 1. Provide consultation on all major policy matters that affect women,

2. Issuing summons for the examination of documents and the witnesses,
3. It has the power to make any public record,
4. Receiving evidence on affidavits,
5. Discovery and production of documents,
6. Summoning and enforcement.

Composition

- The commission consists of a **chairperson, a member secretary and five other members**.
- The chairperson of the NCW is **nominated by the Central Government**. The Central Government also nominates the member secretary. The member secretary should be an **expert in the field of management**.
- The five members nominated by the Central Government should be individuals with ability, standing and integrity. They should have experience in law, legislation, management, women voluntary organisation, economic social development and so on.

Why in News?

- The National Commission for Women celebrated its 30th Foundation Day programme recently.

Science and Technology

1) Lassa Fever

What is Lassa fever and how does it spread?

- Lassa fever is an **animal-borne acute viral haemorrhagic fever caused by multimammate rats**. It was discovered in 1969 in **Nigeria's Lassa town**.
- The virus is **spread by rats** and is **primarily found in countries in West Africa** including Sierra Leone, Liberia, Guinea, and Nigeria where it is endemic.
- A person can become infected if they **come in contact with household items of food that is contaminated with the urine or feces of an infected rat**.
- It can also be **spread, though rarely, if a person comes in contact with a sick person's infected bodily fluids or through mucous membranes** such as the eyes, nose or the mouth. Person-to-person transmission is **more common in healthcare settings**.

Symptoms

- Symptoms typically appear 1-3 weeks after exposure. Mild symptoms include slight fever, fatigue, weakness and headache and more serious symptoms include bleeding, difficulty breathing, vomiting, facial swelling, pain in the chest, back, and abdomen and shock.
- **Death can occur from two weeks of the onset of symptoms**, usually as a result of multi-organ failure.
- The **death rate associated with this disease is low**, at around one per cent. But the death rate is **higher for certain individuals**, such as pregnant women in their third trimester.

How is Lassa fever diagnosed and treated?

- Clinical diagnosis of Lassa fever is challenging because of the **similarity in symptoms with other diseases** like Ebola, malaria, and typhoid fever. The most common method used to detect Lassa fever is **enzyme-linked immunosorbent serologic assays (ELISA)**.
- **Antiviral drug ribavirin** is often used to treat Lassa fever although the usage is not a licensed treatment. Other procedures used are supportive care including hydration, oxygenation, and treatment of specific complications arising due to the disease.
- Preventive vaccines are currently under research and development.
- The best way to avoid getting infected is to **avoid contact with rats**. This means avoiding contact with rats not only in places where the disease is endemic, but also maintaining hygiene in other areas to prevent rats from entering the house, keeping food in rat-proof containers and laying down rat traps.

Why in News?

- One of the three persons diagnosed with Lassa fever in the UK died recently.
- India has not reported any cases of the disease so far.

2) Fast Radio Bursts

What are they?

- Fast radio bursts (FRB) are **extremely bright radio pulses from distant galaxies that last for only a few milliseconds**.
- These brief and mysterious beacons have been spotted in various and distant parts of the universe, as well as in our own galaxy.

- FRBs are extraordinary events that **generate as much energy in a thousandth of a second as the Sun does in an entire year.**
- Locating where these blasts are coming from, and in particular, what galaxies they originate from, is important in determining what kinds of astronomical events trigger such intense flashes of energy.
- Nearly 1,000 FRBs have been identified since their first detection in 2007. Emerging from far away, some FRBs can either be a one-event flash or with definitive periodicity known as **repeater FRBs.**
- However, their **origins are unknown and their appearance is highly unpredictable.**
- For this, studies are currently on gaseous matter and stars from the nearby galaxies hosting FRBs.

Why in News?

- Astronomers of National Centre of Radio Astrophysics (NCRA-TIFR) in Pune and the University of California in the U.S. have used the **Giant Metrewave Radio Telescope (GMRT)** to map the distribution of atomic hydrogen gas from the host galaxy of a fast radio burst for the first time.
- The researchers chose a relatively closer galaxy that hosted the FRB identified as **FRB20180916B.** It emitted radio pulses once every 16 days and was located on the outskirts of a galaxy located about half a billion light years away.

Findings

- The GMRT results indicate the FRB host galaxy has undergone a recent merger and that the FRB progenitor is most likely a massive star formed due to this merger event.

- This is the first case of direct evidence for a recent merger in an FRB host, a major step towards understanding the progenitors of FRBs.
- NCRA has set up a unique facility for radio astronomical research using the metrewavelengths range of the radio spectrum, known as

About GMRT

- The Giant Metrewave Radio Telescope is located at a site about 80 km north of **Pune.**
- GMRT consists of 30 fully steerable gigantic parabolic dishes of 45m diameter each spread over distances of upto 25 km.
- GMRT is operated by the **National Centre of Radio Astrophysics**, an autonomous Centre of Tata Institute of Fundamental Research.

3) Artificial Neural Network

What is it?

- Neural networks, also known as artificial neural networks (ANNs) or simulated neural networks (SNNs), are a **subset of machine learning** and are at the heart of deep learning algorithms. Their name and structure are **inspired by the human brain, mimicking the way that biological neurons signal to one another.**
 - *Machine learning is a branch of artificial intelligence (AI) and computer science which focuses on the use of data and algorithms to imitate the way that humans learn, gradually improving its accuracy.*
- Artificial neural networks have **three types of layers:**
 - **Input layers**, where the input data is placed;
 - **Hidden layers**, where processing occurs through weighted connections;

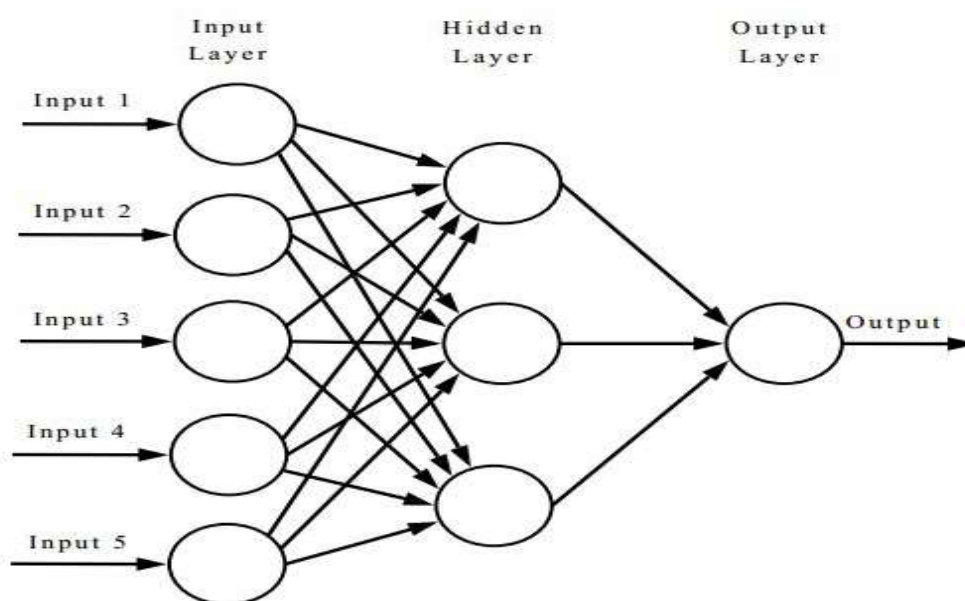
- **Output layers**, where the response to the “stimuli” is delivered.

Working

- The concept behind an Artificial Neural Network is to define inputs and outputs, feed pieces of inputs to computer programs that function like neurons and make inferences or calculations, then forward those results to another layer of computer programs and so on, until a result is obtained.
- As part of this neural network, a **difference between intended output and input is computed at each layer and this difference is used to tune the parameters to**

each program. This method is called **backpropagation** and is an essential component to the Neural Network.

- ANN is based on a collection of connected units or nodes called **artificial neurons**, which loosely model the neurons in a biological brain.
- ANNs are created by programming regular computers to behave as though they are interconnected brain cells.
- ANNs are present in many smartphone applications that we use, like voice to type, Siri and Alexa.



Deep neural networks and deep learning

- When neural networks have **more than one hidden layer to process the input data, they can learn more complex tasks** because they have more “neurons” to process that data through all the hidden layers combined. These multi-layered neural networks are called **deep neural networks** and what they do is called **deep learning**.

- We can compare it to what the brain of a 3-year-old kid knows versus what the brain of a 30-year-old adult knows. The toddler may be just as smart as the adult but is not as experienced as the adult (doesn't have as much data), therefore, she doesn't have as much information or information processing ability as the adult when trying to solve problems.
- This is precisely why neural networks need to be trained. They

need to be fed large data sets so the network can find the appropriate weighting to use to best map inputs to outputs. Neural networks do this by applying optimization algorithms, such as **gradient backward propagation**.

- In this way, deep learning **can even surpass human-level accuracy** because it can sift through and sort huge amounts of data.

Why in News?

- A research team at Lehigh University, USA, has developed and effectively taught an artificial neural network to sense symmetry and structural similarities in materials and to create similarity projections.
- The team developed an artificial neural network and used machine learning to train the neural network to spot symmetry and detect patterns and trends. In the first effort of its kind, the researchers used this innovation to search a database of more than 25,000 images and successfully classified similar materials.

4) What are NFTs? How is it different from cryptocurrency?

Context

- Non fungible tokens (NFTs) have, with their ability to assign value to everything from art to music to a simple selfie, taken the world by storm.
- The sales of NFTs surged \$25 billion in 2021 as the crypto asset exploded in popularity. However, some experts believe NFTs are a bubble which might pop.

What are NFTs?

- **Anything that can be converted into a digital form can be an NFT.** Everything from one's drawings, photos, videos, GIF, music, in-game items, selfies, and even a tweet can

be turned into an NFT, which **can then be traded online using cryptocurrency**.

- But what makes NFTs unique from other digital forms is that they are **backed by Blockchain technology**. Blockchain is a **distributed ledger** where all transactions are recorded. It is like one's bank passbook, except all transactions are transparent and can be seen by anyone and cannot be changed or modified once recorded.
- NFTs are gaining massive popularity now because they are becoming an increasingly popular way to showcase and sell one's digital artwork. Billions of dollars have been spent on NFTs since its inception—which date backs to 2015.

How do NFTs work?

- **NFT works on blockchain as it gives users complete ownership of a digital asset.** For instance, if you're a sketch artist, and if you convert your digital asset to an NFT, what you get is proof of ownership, powered by Blockchain.

Why are people willing to spend millions on something they could easily screenshot or download?

- In simple words, when you list your NFT on a marketplace, you pay something called a **gas fee** (transaction fee) for using the Blockchain, following which your digital art is then recorded on Blockchain, mentioning that you (your address) own the particular NFT. This gives you **full ownership**—which **cannot be edited or modified by anyone, including the marketplace owner**.
- An NFT is thus created, or as crypto enthusiasts say it is "**minted**", to get exclusive ownership rights.

NFTs can have only one owner at a time. Apart from exclusive ownership, NFT owners can also **digitally sign** their artwork and **store specific information** in their NFTs metadata. This will be only viewable to the individual who bought the NFT.

How is an NFT different from cryptocurrency?

- NFTs and cryptocurrencies are very different from each other. While **both are built on Blockchain, that is where the similarity ends.**
- Cryptocurrency is a **currency and is fungible**, meaning that it is interchangeable. For instance, if you hold one crypto token, say one Ethereum, the next Ethereum that you hold will also be of the same value. But **NFTs are non-fungible**, that means the value of one NFT is not equal to another. Every art is different from other, making it non fungible, and unique.

Who can buy NFTs?

- **Anyone who holds a cryptocurrency wallet** can buy an NFT. That is the **only prerequisite** to purchase an NFT. All one needs is a cryptocurrency wallet, and an NFT marketplace where they can buy and sell NFTs.

Some of the largest NFT marketplaces are:

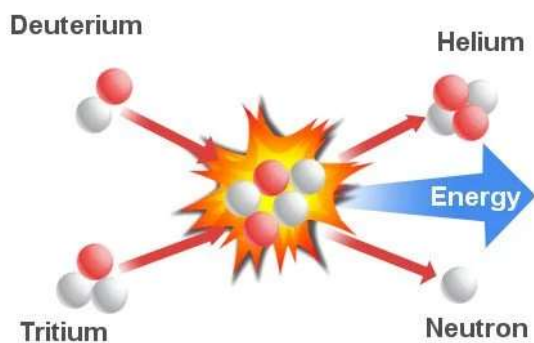
- **OpenSea.io:** Touted as the largest NFT marketplace, one can find digital art, there are collectibles including game items, domain names, even digital representations of physical assets at OpenSea. Essentially, the platform is like an eBay for NFTs with millions of digital assets organised into hundreds of categories.
- **Rarible:** Quite similar to OpenSea, Rarible is also one of the largest NFT marketplace that enables artists and creators to issue and sell NFTs.

What are the risks associated with buying NFTs?

- NFTs, like any other entity, have a dark side to it too. In the recent past, several incidents of NFT scams have been reported including: **emergence of fake marketplaces, unverified sellers often impersonating real artists and selling copies of their artworks for half prices.**
- Another risk associated with NFTs is the **negative impact on the environment.** In order to validate transactions, crypto mining is done, which requires high powered computers that run at a very high capacity, affecting the environment ultimately.

5) Nuclear Fusion

How atomic energy works?

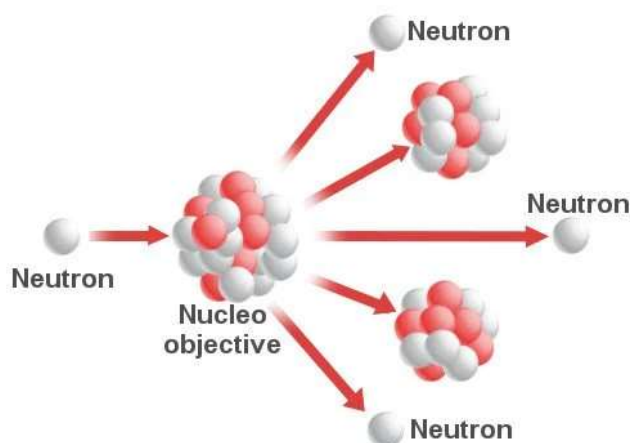


Fusion

- **Atomic energy** can be released in **two ways** – either by **breaking up heavy nuclei**, like uranium, into smaller fragments, releasing a lot of energy in the process, **or** by **fusing together light nuclei** like hydrogen to form heavier stable nuclei and high-energy neutrons which carry a lot of energy that can be harnessed.
- The **former** process is **nuclear fission**, and it is what happens in established **nuclear reactors** around the world.
- The **latter** is nuclear **fusion**, and this is the way stars generate energy. In the **Sun**, for example, **hydrogen is being converted into helium**, releasing huge amounts of energy.
- Further, due to gravity, the pressure builds up 200 billion times greater than Earth's atmospheric pressure, making the density to become 150 times that of water. In this sizzling heat, intense pressure and dense core, the plasma of hydrogen fuse with each other to form helium, unleashing energy in the form of light and heat.

About nuclear fusion

- In a fusion reaction, **two light nuclei merge to form a single heavier nucleus**. It is the opposite



Fission

- reaction of fission, where heavy isotopes are split apart.
- Nuclear fusion process releases energy because the total mass of the resulting single nucleus is less than the mass of the two original nuclei. The **leftover mass becomes energy**. **Einstein's equation** ($E=mc^2$), which says in part that **mass and energy can be converted into each other**, explains why this process occurs.
 - It is most easily achieved on Earth by **combining two isotopes of hydrogen: deuterium and tritium**.

Advantages

- Fusion releases nearly **four million times more energy per kilogram** than burning coal, oil or gas.
- Fusion **does not emit harmful toxins** into the atmosphere such as carbon dioxide or other greenhouse gases. **Helium**, an inert, non-toxic gas, is the major byproduct.
- It also **creates virtually no radioactive waste products**.
- There is **no danger of a meltdown**. It is difficult to achieve and maintain the precise conditions required for fusion, and any disturbance causes the plasma to cool in seconds and the reaction to stop.

- Fusion **does not use fissile materials** such as uranium or plutonium (Radioactive tritium is neither a fissile nor a fissionable material). Hence, Fusion poses **limited risk of nuclear proliferation**.
- Fusion fuels are **abundant and nearly limitless** and hence **sustainability** is present. Deuterium can be extracted from any type of water, whereas tritium is created during the fusion reaction when fusion neutrons interact with lithium.

Why in News?

- Scientists in the United Kingdom said they have achieved a new milestone in **producing nuclear fusion energy**, or imitating the way energy is produced in the Sun.
- A team at the Joint European Torus (JET) facility in England generated 59 megajoules of sustained energy during an experiment, more than doubling a 1997 record.
- A kg of fusion fuel contains about 10 million times as much energy as a kg of coal, oil or gas.

About the experiment

- The energy was **produced in a machine called a tokamak**, a doughnut-shaped apparatus. Inside, a tiny amount of fuel comprising **deuterium and tritium** is heated to temperatures 10 times hotter than the centre of the sun to create plasma.



- This is held in place using **superconductor electromagnets** as it spins around, fuses and releases tremendous energy as heat.

Future Potential

- One of the critical challenges in the Tokamak is the **sudden appearance of plasma instabilities**. The latest results demonstrate the ability to create fusion for five seconds. However, the plasma at high temperature needs to be sustained for a long time if commercial energy has to be obtained.
- A larger and more advanced version of JET, called **International Thermonuclear Experimental Reactor (ITER)**, is currently being built in France, where the latest data will prove vital when it comes online, possibly as soon as 2025.
- International cooperation on fusion energy has historically been close because, unlike the nuclear fission used in existing atomic power plants, the **technology does not produce radioactive material that can be weaponised**.
- The France-based megaproject involves **China, the European Union, India, Japan, Korea, Russia and the United States**.

6) EOS 04

What's in the news?

- The Indian Space Research Organisation has successfully launched its **earth observation satellite EOS-04** on board the **PSLV C-52** from Sriharikota, Andhra Pradesh.
 - *The PSLV is a four stage/engine rocket powered by solid (first and third stages) and liquid (second and fourth stages) fuels alternatively. The rocket also*

has six booster motors with nine ton fuel hugging the first stage.

- Apart from EOS-04, the PSLV launch vehicle also carried two other small satellites namely **INSPIRESat-1** and **INST-2TD**.
- The three satellites were injected successfully into a **sun-synchronous polar orbit** of 529 km.

EOS-04

- The EOS-04, formerly known as **RISAT-1A**, is a **land-based earth observation satellite that images using radar**. It functions in **all weather conditions** and is used for agricultural and forestry applications like terrain mapping and soil moisture monitoring.
- EOS-04 is the sixth satellite to be launched under the **RISAT (Radar Imaging Satellite) programme** in the last decade.

INS-2TD

- INS-2TD is a **technology demonstrator** from ISRO with a thermal imaging camera and can help in the assessment of land and water surface temperatures apart from mapping vegetation.

INSPIRESat-1

- It is a **student satellite** developed by the **Indian Institute of Space Technology (IIST)** to study **ionosphere dynamics and the Sun's coronal heating process**.

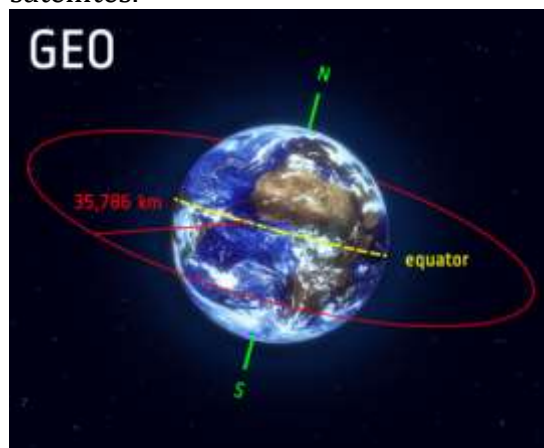
Related Information

Types of Orbits

- An orbit is the curved path that an object in space (such as a star, planet, moon, asteroid or spacecraft) takes around another object due to gravity.
- There are many factors that decide which orbit would be best for a satellite to use, depending on what the satellite is designed to achieve.

1. Geostationary Orbit:

- Satellites in geostationary orbit (GEO) **circle earth above the equator from west to east following Earth's rotation** – taking 23 hours 56 minutes and 4 seconds – by **travelling at exactly the same rate as Earth**.
- This makes satellites in GEO appear to be **'stationary' over a fixed position**.
- It is a **circular orbit** located at an **altitude of 35768 Kms above the equator**. GEO is used by satellites that need to stay constantly above one particular place over Earth, such as telecommunication satellites.

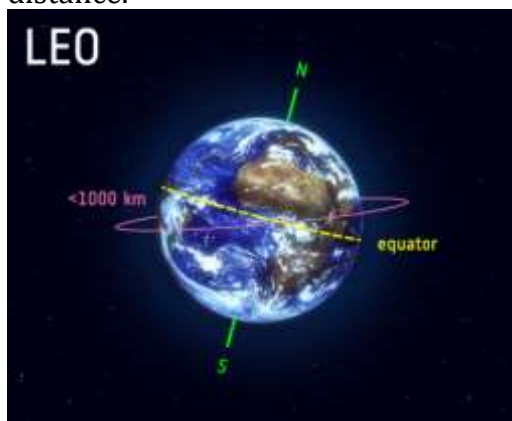


2. Low Earth Orbit:

- A low Earth orbit (LEO) is, as the name suggests, an orbit that is **relatively close to Earth's surface**.
- It is normally at an altitude of **less than 1000 km but could be as low as 160 km above Earth**.
- Unlike satellites in GEO that must always orbit along Earth's equator, LEO satellites **do not always have to follow a particular path around Earth in the same way – their plane can be tilted**. This means there are more available routes for satellites in LEO, which is one of the reasons why LEO is a very commonly used orbit.
- LEO's close proximity to Earth makes it useful for several reasons.

It is the orbit **most commonly used for satellite imaging**, as being near the surface allows it to take images of higher resolution.

- It is also the orbit used for the **International Space Station (ISS)**, as it is easier for astronauts to travel to and from it at a shorter distance.



3. Medium Earth Orbit:

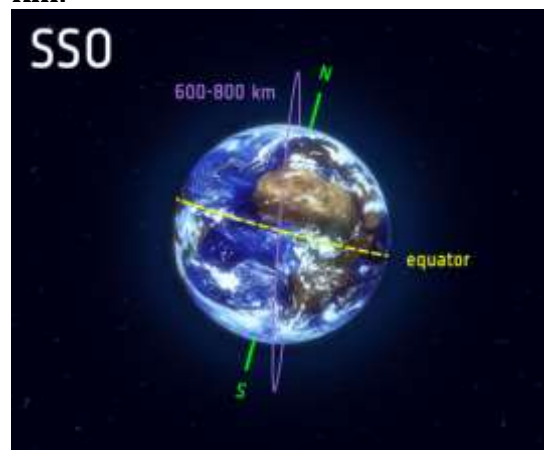
- Medium Earth orbit comprises a **wide range of orbits anywhere between LEO and GEO**. It is similar to LEO in that it also **does not need to take specific paths around Earth**, and it is used by a variety of satellites with many different applications.
- It is very commonly used by **navigation satellites**.

4. Polar Orbit and Sun-synchronous Orbit:

- Satellites in polar orbits usually **travel past Earth from north to south** rather than from west to east, passing roughly over Earth's poles.
- Satellites in a polar orbit do not have to pass the North and South Pole precisely; even a deviation within 20 to 30 degrees is still classed as a polar orbit. Polar orbits are a **type of low Earth orbit, as they are at low altitudes between 200 and 1000 km**.
- **Sun-synchronous orbit (SSO)** is a particular kind of polar orbit. Satellites in SSO, travelling over the

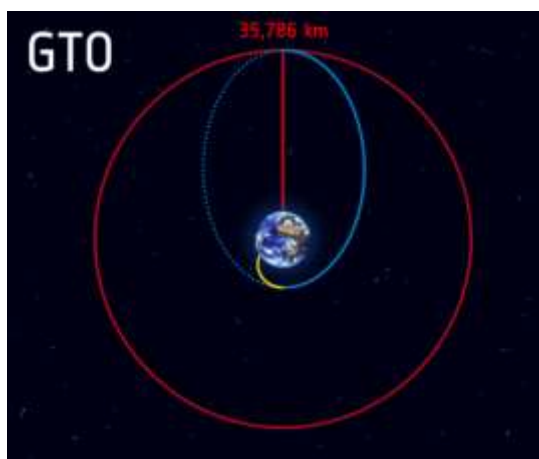
polar regions, are **synchronous with the Sun**. This means they are synchronised to always be in the same 'fixed' position relative to the Sun. This means that the satellite always visits the same spot at the same local time.

- A satellite in a Sun-synchronous orbit would usually be at an **altitude of between 600 and 800 km**.



5. Transfer orbits and geostationary transfer orbit (GTO):

- Transfer orbits are a **special kind of orbit used to get from one orbit to another**. When satellites are launched from Earth and carried to space with launch vehicles, the satellites are not always placed directly on their final orbit. Often, the satellites are instead placed on a transfer orbit: an orbit where, by using relatively little energy from built-in motors, the satellite or spacecraft can move from one orbit to another.
- This allows a satellite to reach, for example, a high-altitude orbit like GEO without actually needing the launch vehicle to go all the way to this altitude, which would require more effort. Reaching GEO in this way is an example of one of the most common transfer orbits, called the **geostationary transfer orbit (GTO)**.



6. Lagrange points:

- Lagrange points are positions in space where **objects sent there tend to stay put**.
- At Lagrange points, the **gravitational pull of two large masses precisely equals the centripetal force required for a small object to move with them**. These points in space can be used by spacecraft to reduce fuel consumption needed to remain in position.

7) NASA plans to retire International Space Station

Context

- For over two decades, the International Space Station (ISS) has been orbiting Earth at a speed of about eight kilometres per second, while an international crew of astronauts and cosmonauts onboard conducted groundbreaking scientific investigations that have thrown open the doors for deep space exploration.
- But now **NASA has announced that the spacecraft will cease operations in 2031**, after which it will fall out of orbit and plunge into the waters of the South Pacific Ocean.
- NASA published a transition plan for the ISS, in which it explained how its operations will eventually

be **transitioned to commercial low-Earth orbit destinations**.

About ISS

- The International Space Station is the **largest single structure humans ever put into space**.
- The ISS is in a **Low Earth Orbit (LEO)** about 400 km to 420 km above Earth's surface.
- Its main construction was completed between 1998 and 2011, although the station continually evolved to include new missions and experiments.
- The ISS includes contributions from 15 nations. **NASA** (United States), **Roscosmos** (Russia) and the **European Space Agency** are the major partners of the space station who contribute most of the funding; the other partners are the **Japanese Aerospace Exploration Agency** and the **Canadian Space Agency**.
- The ISS serves as a microgravity and space environment research laboratory in which crew members conduct experiments in biology, human biology, physics, astronomy, meteorology, and other fields.
- The station is divided into **two sections**, the **Russian Orbital Segment (ROS)**, which is operated by Russia, and the **United States Orbital Segment (USOS)**, which is shared by many nations.
- Several landmark firsts were recorded onboard the ISS in the last two decades. For instance, in 2018, NASA's Cold Atom Lab became the first facility to produce the **fifth state of matter**, called a **Bose-Einstein condensate**, in space. In 2016, a NASA astronaut was able to **sequence DNA in space for the first time**.

What's next for the ISS?

- According to NASA, once it retires, the ISS will be **replaced by one or**

more commercially-owned and -operated space platforms.

- This transition to renting space onboard commercial platforms could end up saving NASA \$1.3 billion in 2031 alone. The money

saved can be applied to NASA's deep space exploration initiatives, allowing the agency to explore further and faster into deep space.

Reports and Indices

1) UDISE+ Report

What's in the news?

- The **Ministry of Education** has released the report on Unified District Information System for Education Plus (UDISE+) 2020-21 on school education of India.
- The UDISE+ system of online data collection from the schools was developed by **Department of School Education & Literacy** in the year 2018-19 to overcome the issues related to erstwhile practice of manual data filling in paper format and subsequent feeding on computer at the block or district level in the UDISE data collection system since 2012-13.
- In UDISE+ system, improvements have been made particularly in the areas related to data capture, data mapping and data verification. The present publication relates to UDISE+ data for the **reference year 2020-21**.

Students and Teachers in schools:

- In 2020-21 total students enrolled in school education from primary to higher secondary stood at 25.38 crore. There is an increase of 28.32 lakh enrolments as compared to the 25.10 crore enrolment in 2019-20.
- **Gross Enrolment Ratio (GER)** which measure the general level of participation has **improved in 2020-21 at all levels of school education** compared to 2019-20. Level wise GER in 2020-21 as compared to 2019-20 are: 92.2% from 89.7% in upper primary, 99.1 % from 97.8% in elementary, 79.8% from 77.9% in secondary and 53.8% from 51.4% in higher secondary respectively.
- In 2020-21 the **Pupil Teacher Ratio (PTR)** stood at 26 for primary, 19 for upper primary, 18

for secondary and 26 for higher secondary, showing an improvement since 2018-19. The PTR for primary, upper primary, secondary and higher secondary was 28, 20, 21, and 30 respectively during 2018-19.

School Infrastructure

- **Schools with functional electricity have made impressive progress. Now 84% of the total schools have functional electricity facility.**
- Percentage of the schools with **functional drinking water has increased to 95.2%** in 2020-21.
- Percentage of the school with a **functional girl's toilet facility has increased to 93.91 %** in 2020-21.
- Number of schools having **functional computers increased to 6 lakh in 2020-21**. Now, 40% of the schools have functional computers.
- Number of schools having **internet facility increased to 3.7 lakh** in 2020-21 from 3.36 lakh in 2019-20 with an increase of 2.6%.
- More than **85.6 % schools in India had a library/reading room/reading corner** in 2020-21.

Impact of COVID-19 Pandemic on enrolment

- Although the **impact of the COVID-19 pandemic** is cross-cutting, this is **particularly noticed in the enrolment of young and vulnerable kids like pre-primary, class 1 and Children With Special Needs (CWSN)** may be attributed to postponement of admissions due to COVID-19.
- In 2020-21 enrolment of students in school education from primary to higher secondary is around 25.4 crore. This is higher by 28.3 lakh as compared to the enrolment of

students in 2019-20. However, **enrolment of students in pre-primary level and class 1 has reduced** by 29.1 lakh and 18.8 lakh respectively in 2020-21 as compared to 2019-20. This may also be due to postponement of school admission of young children during pandemic.

- Total enrolment of CWSN students in 2020-21 stands at 21.69 lakh as compared to 22.49 lakh in 2019-20 showing a **decrease of 3.56 %** during 2020-21 as compared to 2019-20.
- During 2020-21, 39.7 lakh students of government aided, private school students **shifted to Government schools.**

Polity

1) Star campaigner status

Who is a star campaigner?

- During elections, a star campaigner is a leader who seeks votes for his party during the election. He or she can be a politician or even a film star. There is **no strict law governing who can or cannot be made a star campaigner**. It depends on the party whom to choose as the star campaigner for the election.
- It is a status that the **political parties** contesting an election give to certain big names who the parties feel can fetch more votes from people with special campaigning style.

Legal norms

- Expenditure incurred on electioneering by the star campaigner is **not added to a candidate's poll expenditure** giving him/her more leeway. According to the Representation of People's Act, these expenses will be **borne by the political parties**.
- However, this only applies when a star campaigner **limits herself to a general campaign for the political party she represents**.
- If she/he shares the stage with a candidate, the entire campaign cost except expenditure incurred on travelling will be added to the candidate's election expenses.

Why in News?

- The Election Commission has decided to restore the maximum limit on number of Star Campaigners and the time period for submission of the list of Star Campaigners for all ongoing and future elections with immediate effect.
- The Commission took the decision in view of the decline in cases of

Covid-19 and the gradual lifting of restrictions by the Central and State governments.

- The Commission said, now the maximum limit on the number of Star Campaigners for **recognized National and State political parties will be 40** and for **other than recognized political parties, it will be 20**.
- Earlier, in 2020, the Commission had reduced the number of star campaigners for recognised national and state parties.

2) Right To Education

About RTE

- The **86th Constitution Amendment Act (2002)** inserted **Article 21A** in the Indian Constitution. **Article 21A** states that every child between the ages of **6 to 14 years** has the right to free and compulsory education. The **Right to Education Act (RTE), 2009**, seeks to give effect to this amendment.
- The Act makes **education a fundamental right of every child between the ages of 6 and 14** and specifies minimum norms in elementary schools.
- The RTE Act provides for the:
 - Right of children to **free and compulsory education** till completion of elementary education in a neighbourhood school.
 - It clarifies that '**compulsory education**' means obligation of the appropriate government to provide free elementary education and ensure compulsory admission, attendance and completion of elementary education to every child in the six to fourteen age

- group. **‘Free’** means that no child shall be liable to pay any kind of fee or charges or expenses which may prevent him or her from pursuing and completing elementary education.
- It makes provisions for a non-admitted child to be admitted to an age appropriate class.
 - It specifies the duties and responsibilities of appropriate Governments, local authority and parents in providing free and compulsory education, and sharing of financial and other responsibilities between the Central and State Governments.
 - It lays down the norms and standards relating inter alia to **Pupil Teacher Ratios (PTRs), buildings and infrastructure, school-working days, teacher-working hours.**
 - It also provides for **prohibition of deployment of teachers** for non-educational work, other than decennial census, elections to local authority, state legislatures and parliament, and disaster relief.
 - It provides for appointment of appropriately trained teachers, i.e. teachers with the requisite entry and academic qualifications.
 - RTE Act mandates a **minimum of 25% free seats** for children belonging to weaker sections and disadvantaged groups (EWS) in private unaided schools at the entry level.
 - To improve performances of children in schools, the Right to Education Act introduced the **Continuous Comprehensive Evaluation (CCE)** system in 2009 to ensure grade appropriate learning outcomes in schools.
 - In pursuance of Section 6 of the Act, the Central RTE Rules has notified the area or **limits of neighbourhood as one kilometre, within which a primary school and 3 kilometre within which an upper primary school, has to be established.**
 - It **prohibits** (a) physical punishment and mental harassment; (b) screening procedures for admission of children; (c) capitation fee; (d) private tuition by teachers and (e) running of schools without recognition,
 - The Act provides for development of curriculum in consonance with the values enshrined in the Constitution, and which would ensure the all-round development of the child, building on the child’s knowledge, potentiality and talent and making the child free of fear, trauma and anxiety through a system of child friendly and child centred learning.
 - The RTE Act was **amended in 2012 to exclude madrasas, Vedic pathshalas and educational institutions primarily imparting religious instruction** from the ambit of the act and mention that its provisions were **subject to Articles 29 and 30** which protect the administrative rights of minority educational institutions.

Why in News?

- The Supreme Court has refused to intervene in a petition challenging sections of the Right to Education Act which exclude vedic pathshalas, madrasas and institutions

imparting religious education from its ambit.

- The petition alleged that Sections 1(4) and 1(5) of the RTE Act which exclude such institutions were included by the Centre to deny educational excellence to vedic pathshalas, madrasas and those educational institutions that impart religious instruction and these sections offends Articles 14, 15, 16, 21 and 21A and is contrary to Articles 38, 39 and 46 and the Preamble itself.
- The court said that the law was framed 12 years back and there was no urgency as such to examine the validity of its provisions.

3) One nation, One election

What is the 'One Nation One Election' system?

- One Nation One Election proposes that **simultaneous elections be held in all states and the Lok Sabha in a gap of five years**. The idea behind it is envisaging an amendment in the entire electoral system of the country where **elections to the states and Centre synchronise**.
- Listed voters shall cast their votes at the same time and the same day for both Lok Sabha and state assemblies.

History

- Simultaneous polls to states and Lok Sabha is not a newly conceived norm. In fact, simultaneous elections have previously been conducted in India in **1952, 1957, 1962 and 1967**.
- Soon after, this norm was discontinued following the dissolution of some Legislative Assemblies between 1968-69. Since then, the Indian Electoral system holds polls to Centre and states separately.

Early explorations of the idea

- The idea of reverting to simultaneous polls was mooted in the annual report of the **Election Commission in 1983**.
- In 2015, the **Parliamentary Standing Committee on Personnel, Public Grievances, Law and Justice**, headed by **E M Sudarsana Natchiappan**, prepared a report on holding simultaneous elections. The report said that simultaneous elections would help to reduce:
 - the **massive expenditure** that is currently incurred for the conduct of separate elections,
 - the **policy paralysis** that results from the imposition of the Model Code of Conduct during election time,
 - the impact on the **delivery of essential services** and,
 - the **burden on crucial manpower** that is deployed during election time.

What are the arguments in favour of simultaneous elections?

- It is principally an **argument for efficiency**.
- The Election Commission implements a **Model Code of Conduct** before every poll that lays down how parties and candidates should conduct themselves during the electoral process. To prevent parties in government from taking unfair advantage of the administrative apparatus under their control, the **code prevents the announcement of new schemes and policies**.
- By implementing simultaneous polls, the argument is that the **time lost to the model code would come down**.

- **NITI Aayog** in one of its reports argued that from the perspective of the Government, simultaneous elections would **reduce the cost of holding elections**, and limit all elections to a single season.
- It is also argued that frequent elections also **prevent governments from thinking of long-term policies**. Simultaneous elections would fix this. If simultaneous polls do reduce the duration of conducting polls, political parties will have ample time to address national issues and enhance governance.
- Simultaneous polls will **boost voter turnout**, according to the Law Commission.

Arguments against 'One Nation One Election'

- The primary cause of concern amongst parties that have opposed simultaneous polling is that of **Constitutional difficulties and anti-federal consequences**.
- It is argued that simultaneous polls could help parties that have a multi-state presence.
- A study by the public-policy think tank IDFC Institute analysed electoral data from four Lok Sabha elections – 1999, 2004, 2009 and 2014. The data analysis shows that on average, there is a 77% chance that the **Indian voter will vote for the same party for both the state and Centre when elections are held simultaneously**, a trend that the study calls an “**undesirable impact on voter behaviour**”.
- As a result, its critics feel holding polls simultaneously will **undermine Indian federalism**.
- The other argument is that since elections will be held once in five years, it will **reduce the government's accountability to**

the people. It would place less pressure on governments to work for the voter.

- Critics argue that holding just one mega election would be **too complex an exercise** to tackle in a country as large and as complex as India. It would be a **logistical nightmare** — requiring, for example, about twice as many electronic voting machines and Voter Verifiable Paper Audit Trail machines as are used now.

Implementation

- Beyond political parties going against this proposal, the main task of executing the 'one nation one election' theory lies with **unavoidable Constitutional problems**.
- Few of the important Articles that need to be amended for implementation of 'one nation one election' are:
 - **Article 83 and Article 172** deal with the duration of the Houses of Parliament, and guarantees a five-year term to both the elected Lok Sabha and state assemblies, unless they are dissolved sooner.
 - **Article 85** of the Indian Constitution deals with the powers of the President to summon Parliamentary sessions, not exceeding a gap of more than six months. The President also carries the power to adjourn either House of the Parliament and the dissolution of the Lok Sabha.
 - **Article 356** of the Indian Constitution, comes into action in case of governance and constitutional failure in a state and deals with the President's Rule.

- Amendments in the **People's Representation Act, 1951 (RPA Act 1951)** and the **Anti Defection Law** must be made for organised conduct and stability in both Lok Sabha and state assemblies.

How can simultaneous elections be achieved?

- Under the **Westminster system of government** that India follows, legislatures do not have fixed lifetimes. They can either be dissolved by the government, which can call for fresh elections, or expire in case a government falls and no other government can be formed.
- In order to achieve simultaneous elections, drastic changes would be required in India's governance structure.
- One proposal by the **Law Commission in 2018** was to introduce the concept of **"constructive vote of no-confidence"** where a government

can only be voted out by a legislature only if the House has confidence in another government that can take its place.

- The law panel document suggested that in case a government fell mid-term, the term of the **new government would be for the remaining period** and not for a fresh five-year term.
- Another proposal involves **either extending or curtailing the lifetimes of state assemblies** in order to make them coincide with the Lok Sabha elections.

Why in News?

- Chief Election Commissioner Sushil Chandra recently said that the Election Commission is ready to hold simultaneous elections on the lines of the government's vision for 'One Nation One Election'.
- He added that it is to be decided in Parliament but the Election Commission is fully prepared and the Election Commission is capable of holding all the elections simultaneously.

International Relations

1) What are the Minsk agreements on the Ukraine conflict?

Context

- The ongoing geopolitical escalations between Russia and Ukraine brought back focus on the Minsk Agreement of 2014 and 2015.
- Signed after the Russian actions in Crimea in 2014, the agreement was aimed at ensuring a ceasefire and enabling prerequisites to work out a permanent peaceful solution between the neighbours.

What's the difference between Minsk I and Minsk II?

- The **first Minsk Protocol** was signed by Ukraine, Russia, the Organization for Security and Co-operation in Europe (OSCE) and the pro-Russia separatist leaders in **September 2014**.
 - *OSCE is an international organization for peace and human rights. Presently, it has 57 countries as its members. Most of the member countries of the OSCE are from Europe, the Caucasus, Central Asia and North America.*
- Ukraine and the separatists agreed to an **immediate 12-point ceasefire deal** including withdrawal of heavy weapons and prisoner exchanges. But the agreement failed to stop the fighting, with frequent violations by both sides.
- Five months later, after Ukraine lost territory to pro-Russia separatists, **Minsk II was signed**. Representatives of Russia and Ukraine, mediated by France and Germany, signed a **13-point agreement in February 2015**.

- The second agreement also **quickly broke down**, with the OSCE reporting around 200 weekly violations in 2016-2020 and more than 1,000 since 2021.
- In addition to the ceasefire, **Minsk II's notable points** include the withdrawal of weapons, monitoring of the ceasefire by the OSCE and the holding of local elections in the self-proclaimed **Donetsk and Luhansk People's Republics** on their future status in Ukraine.

Why has the 2015 agreement failed to end fighting in eastern Ukraine?

- The Minsk II deal set out military and political steps that **remain unimplemented**.
- The major disagreements over Minsk II stem from **differing interpretations of Russia's role in the conflict and how the points should be implemented**.
- A major blockage has been Russia's insistence that it is not a party to the conflict and therefore is not bound by its terms.
- In general, Moscow and Kyiv interpret the pact very differently, leading to what has been dubbed by some observers as the "**Minsk conundrum**".
- Earlier this year, Ukraine's security chief argued that the full realization of the Minsk accord would lead to domestic destabilization that would give Russia the upper hand.

2) What is the International Court of Justice?

Context

- Ukraine has filed an application before the International Court of Justice (ICJ), instituting proceedings against the Russian Federation concerning a dispute relating to the interpretation,

application and fulfilment of the **1948 Convention on the Prevention and Punishment of the Crime of Genocide (the “Genocide Convention”)**.

- Ukraine has accused Russia of falsely claiming that acts of genocide have occurred in the **Luhansk and Donetsk oblasts of Ukraine**, and of using that as a pretext to recognise the independence of these regions and of going to war against Ukraine.

About ICJ

- The ICJ is the **principal judicial organ of the United Nations (UN)**. It was established in 1945 by the Charter of the United Nations and began work in 1946.
- The court is the **successor to the Permanent Court of International Justice (PCIJ)**, which was brought into being through, and by, the League of Nations, and which held its inaugural sitting at the Peace Palace in The Hague, Netherlands, in 1922.
- After World War II, the League of Nations and PCIJ were replaced by the **United Nations and ICJ respectively**. The PCIJ was formally dissolved in 1946, and its last president, Judge José Gustavo Guerrero of El Salvador, became the first president of the ICJ.
- The first case, which was brought by the UK against Albania and concerned incidents in the **Corfu channel** — the narrow strait of the Ionian Sea between the Greek island of Corfu and Albania on the European mainland — was submitted in 1947.

Seat and role

- Like the PCIJ, the ICJ is based at the **Peace Palace in The Hague**. It is the **only one of the six principal organs of the UN that is not**

located in New York City. (The other five organs are the General Assembly, the Security Council, the Economic and Social Council, the Trusteeship Council, and the Secretariat.)

- The ICJ’s role is to settle, in accordance with international law, legal disputes submitted to it by States and to give advisory opinions on legal questions referred to it by authorized United Nations organs and specialized agencies. The court as a whole must represent the main forms of civilization and the principal legal systems of the world.
- **English and French** are the ICJ’s official languages.
- **All members of the UN are automatically parties to the ICJ statute, but this does not automatically give the ICJ jurisdiction over disputes involving them.** The ICJ gets jurisdiction only if **both parties consent to it**.
- The judgment of the ICJ is **final and technically binding** on the parties to a case. There is **no provision of appeal**; it can at the most, be subject to **interpretation** or, upon the discovery of a new fact, **revision**.
- However, the ICJ has **no way to ensure compliance of its orders**, and its authority is derived from the willingness of countries to abide by them.

Judges of the court

- The ICJ has **15 judges who are elected to nine-year terms by the UN General Assembly and Security Council, which vote simultaneously but separately**. To be elected, a candidate must receive a majority of the votes in both bodies, a requirement that

sometimes necessitates multiple rounds of voting.

- A **third of the court is elected every three years**. Judges are **eligible for re-election**.

3) NATO

About NATO

- Formed in **1949** with the signing of the **Washington Treaty**, NATO is a **security alliance of 30 countries from North America and Europe**.
- Established in the Cold War as a bulwark against Soviet aggression, NATO's fundamental goal is to safeguard the Allies' freedom and security by political and military means.
- **Article 5 of the Washington Treaty** states that an attack against one Ally is an attack against all — is at the core of the Alliance, a **promise of collective defence**.
- **Article 4** of the treaty ensures consultations among Allies on security matters of common interest, which have expanded from a narrowly defined Soviet threat to the critical mission in Afghanistan, as well as new threats to security such as cyber attacks, and global threats such as terrorism and piracy that affect the Alliance and its global network of partners.
- A "**NATO decision**" is the expression of the collective will of all 30 member countries since all decisions are taken by **consensus**.
- At present, NATO has **30 members**. In 1949, there were **12 founding members** of the Alliance: Belgium, Canada, Denmark, France, Iceland, Italy, Luxembourg, the Netherlands, Norway, Portugal, the United Kingdom and the United States. The other member countries are: Greece and Turkey (1952), Germany (1955), Spain (1982), the

Czech Republic, Hungary and Poland (1999), Bulgaria, Estonia, Latvia, Lithuania, Romania, Slovakia and Slovenia (2004), Albania and Croatia (2009), Montenegro (2017) and North Macedonia (2020).

- NATO's Headquarters are located in **Brussels, Belgium**.

Why in News?

- Ukraine's president, Volodymyr Zelenskiy has acknowledged that Ukraine will not become a NATO member.
- One of Russian President Vladimir Putin's demands before launching an invasion in Ukraine was that its membership of NATO should be ruled out indefinitely.

4) World Sustainable Development Summit 2022

About the summit

- The World Sustainable Development Summit (WSDS) is the annual flagship event of **The Energy and Resources Institute (TERI)**.
- Started in **2001**, the summit aims to provide long-term solutions for the benefit of the global community by assembling the various stakeholders on a single platform and initiating a step in the direction of achieving constructive action in combating issues pertinent to the future of humanity.
- It provides a platform for global leaders and practitioners to discuss and deliberate over climatic issues of universal importance.
- Previously WSDS was called the **Delhi Sustainable Development Summit (DSDS)**.

Why in News?

- TERI recently organised the 21st edition of its annual flagship event, the World Sustainability Development Summit 2022.

Related Information

The Energy and Resources Institute

- TERI is a **not-for-profit, policy research organization** that conducts research work in the fields of energy, environment and sustainable development.
- It was established in 1974 as **Tata Energy Research Institute** and was renamed The Energy and Resources Institute in 2003.
- It aims to focus on formulating local and national level strategies for shaping global solutions to critical issues.
- Its key focus lies in promoting clean energy, water management, pollution management, sustainable agriculture and climate resilience.

5) Iran nuclear deal

Context

- Diplomats from Iran and world powers reconvened in Vienna to seek a deal reviving the 2015 Iran nuclear deal, signed under President Barack Obama, and dismantled in 2018 by President Donald Trump.

What was the 2015 Iran nuclear deal?

- The deal, formally known as **Joint Comprehensive Plan of Action (JCPOA)**, is a landmark accord signed between **Iran and a coalition of world powers** including **the US, the UK, China, Russia, France, and Germany** (collectively known as **P5+1**).
- Iran agreed to **dismantle much of Iran's nuclear programme, and open its facilities to greater international monitoring**. In return, the world powers agreed to **lift many of the sanctions imposed on the country**, opening its economy to billions of dollars of lost revenue.

- In essence, the agreement focused on **eliminating Iran's stockpiles of enriched uranium and plutonium** (needed to produce a nuclear weapon), and on **limiting the number and type of centrifuges Iran could operate**.
- Iran's economy, after suffering years of recessions, currency depreciation, and inflation, stabilised significantly after the deal took effect, and its exports skyrocketed.

Criticism

- **Israel**, America's closest ally in the Middle East, strongly rejected the deal, and other countries like Iran's great regional rival **Saudi Arabia**, complained that they were not involved in the negotiations even though Iran's nuclear programme posed security risks for every country in the region.
- Critics also point out that since 2015, Iran has increased its **support for regional proxies**, and the Islamic Revolutionary Guard Corps (IRGC), which the US has designated a terrorist organisation, has expanded its activities.
- However, backers of the deal believe that it succeeded in its main objective, which was to contain Iran's nuclear capabilities.

What happened after the US pulled out of the deal?

- In 2020, under Trump's presidency, the US announced its intention to abandon the deal and reinstate sanctions. However, the other partners objected to the move, stating that since the US was no longer part of the deal, it could not unilaterally reimpose sanctions.
- The other powers, in an attempt to keep the deal alive, launched a barter system known as **INSTEX** to **facilitate transactions with Iran outside the US banking system**.

- Despite the efforts of the US's allies, the deal was **essentially dead** — and Tehran accused the US of reneging on its commitments, and blamed Europe for capitulating to US unilateralism.
- After Trump abandoned the deal and reinstated sanctions, **Iran ramped up its nuclear programme** in earnest, returning to approximately 97 per cent of its pre-2015 nuclear capabilities.
- Still, the new US sanctions hit the Iranian economy hard, leading to a wave of protests across the country.
- Current U.S. President Joe Biden has announced that the country would return to the deal if Iran starts complying with its terms.

Defence

1) MILAN 2022

About MILAN

- MILAN is a **biennial multilateral naval exercise** incepted by the **Indian Navy** in 1995 at Andaman and Nicobar Command.
- Starting with the participation of only four countries, **Indonesia, Singapore, Sri Lanka, and Thailand**, in the 1995 edition, the exercise has since **transitioned leaps and bounds in terms of the number of participants and complexity of exercises**.
- Originally conceived in consonance with **India's Look East Policy**, MILAN expanded in ensuing years with the **Centre's Act East policy** and **Security And Growth for All in the Region (SAGAR) initiative**, to include participation from island nations in the Western Indian Ocean Region (IOR) as also IOR littorals.
- The aim of the exercise is to hone operational skills, imbibe best practices and procedures, and enable doctrinal learning in the maritime domain, through professional interaction between friendly navies.

What's in the news?

- The latest edition of the Indian Navy's multilateral exercise MILAN 2022 was concluded recently in Visakhapatnam.
- MILAN 22 witnessed its **largest-ever participation with more than 40 countries** sending their warships or high-level delegations.
- The theme of the MILAN 2022 exercise is **Camaraderie - Cohesion - Collaboration** which aims to project India as a responsible maritime power to the world at large.

2) Eastern Bridge-VI

What's in the news?

- The **Indian Air Force (IAF)** and the **Royal Air Force of Oman** have conducted their bilateral exercise - **Eastern Bridge VI** - at the Jodhpur air force station.
- The exercise seeks to promote professional interaction, exchange of experiences and enhancement of operational knowledge, besides strengthening bilateral relations between the two countries.
- It also provided avenues of cultural exchanges between the personnel of both countries.