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Schemes

1) Pradhan Mantri Krishi Sinchai Yojana

Background

- Substantial dependence on rainfall makes cultivation in unirrigated areas a high risk, less productive profession. Empirical evidence suggests that assured or protective irrigation encourages farmers to invest more in farming technology and inputs leading to productivity enhancement and increased farm income.

About the scheme

- The vision of Pradhan Mantri Krishi Sinchayee Yojana (PMKSY) is to ensure **access to some means of protective irrigation to all agricultural farms** in the country, to produce **'per drop more crop'**, thus bringing much desired rural prosperity.
- Launched in 2015 by the **Ministry of Agriculture & Farmers Welfare**, PMKSY has **been conceived amalgamating ongoing schemes** viz. Accelerated Irrigation Benefit Programme (AIBP), Integrated Watershed Management Programme (IWMP) and the On Farm Water Management (OFWM).

Broad objectives of PMKSY

- Achieve **convergence of investments in irrigation** at the field level (preparation of district level and, if required, sub district level water use plans).
- **Enhance the physical access of water** on the farm and expand cultivable area under assured irrigation (Har Khet ko pani),
- Integration of water source, distribution and its efficient use, to make best use of water through appropriate technologies and practices.
- **Improve on-farm water use efficiency** to reduce wastage and

increase availability both in duration and extent.

- Enhance the adoption of **precision-irrigation and other water saving technologies (More crop per drop)**.
- Enhance recharge of aquifers and introduce sustainable water conservation practices.

Four components of PMKSY:

1) Accelerated Irrigation Benefits Programme (AIBP)

- To focus on faster completion of ongoing Major and Medium Irrigation including National Projects.

2) Har Khet Ko Pani ('all fields will get water')

- Activities including Creation of new water sources through Minor Irrigation and Creation and rejuvenation of traditional water storage systems like Jal Mandir (Gujarat); Khatri, Kuhl (H.P.); Zabo (Nagaland); Eri, Ooranis (T.N.); Dongs (Assam); Katas, Bandhas (Odisha and M.P.) etc. at feasible locations.

3) Per Drop More Crop

- Promoting efficient water conveyance and precision water application devices like drips, sprinklers, pivots, rain-guns in the farm.

4) Watershed Development

- Effective rainfall management like field bunding, contour bunding/trenching, staggered trenching, land levelling, mulching etc. and Creating Water harvesting structures such as check dams, nala bund, farm ponds, tanks etc.

Implementation

- PMKSY adopts a **'decentralized State level planning and projectized execution'** structure that allows States to draw up their own irrigation development plans based on **District Irrigation Plan (DIP)** and **State Irrigation Plan (SIP)**.
- PMKSY acts as a convergence platform for all water sector activities including

drinking water & sanitation, MGNREGA, application of science & technology etc. through comprehensive plans.

Why in News?

- The Union government has made an annual allotment of Rs. 4000 crore to State Governments under 'Per Drop More Crop' component of Pradhan Mantri Krishi Sinchayee Yojana for the year 2020-21.

2) Vivad se Vishwas

About the scheme

- Vivad se Vishwas scheme was announced in the Budget 2020 to provide a mechanism for the resolution of pending Income Tax disputes.
- As on November 30, 2019, about 4.83 lakh appeals pending at various levels involving tax arrears to the tune of about ₹9.32-lakh crore.
- The Centre hopes the new scheme will bring down the number of pending cases and result in some portion of the locked revenue being realised.
- Under the scheme, a taxpayer would be required to pay only the amount of the disputed taxes and will get complete waiver of interest and penalty provided he pays by 31st March, 2020. Those who avail this scheme after 31st March, 2020 will have to pay some additional amount.
- In order to provide more time to taxpayers to settle disputes, earlier the date for filing declaration and making payment without additional amount was extended from March 31, 2020 to June 30, 2020. This date was again extended to December 31, 2020.

Why in News?

- The government has extended for the third time the deadline for making payment without additional amount under the 'Vivad Se Vishwas' by three months from 31st December 2020 to 31st March 2021.

3) Ayushman Sahakar

What's in the news?

- The **Ministry of Agriculture and Farmers' Welfare** has launched Ayushman Sahakar to **assist cooperatives**

play an important role in creation of healthcare infrastructure in the country.

- The scheme was formulated by the **National Cooperative Development Corporation (NCDC)**.

About the scheme

- There are about 52 hospitals across the country run by cooperatives. Under the scheme, NCDC would extend **term loans to prospective cooperatives to the tune of Rs.10,000 Crore** in the coming years.
- The NCDC fund would give a boost to provision of healthcare services by cooperatives.
- Ayushman Sahakar scheme fund would also assist cooperative hospitals to take up **medical/Ayush education**.
- By virtue of their strong presence in rural areas, cooperatives utilizing the scheme would bring revolution in comprehensive health care services.
- Any Cooperative Society with suitable provision in its byelaws to undertake healthcare related activities would be able to access the NCDC fund.
- The scheme provides **interest subvention of one percent to women majority cooperatives**.

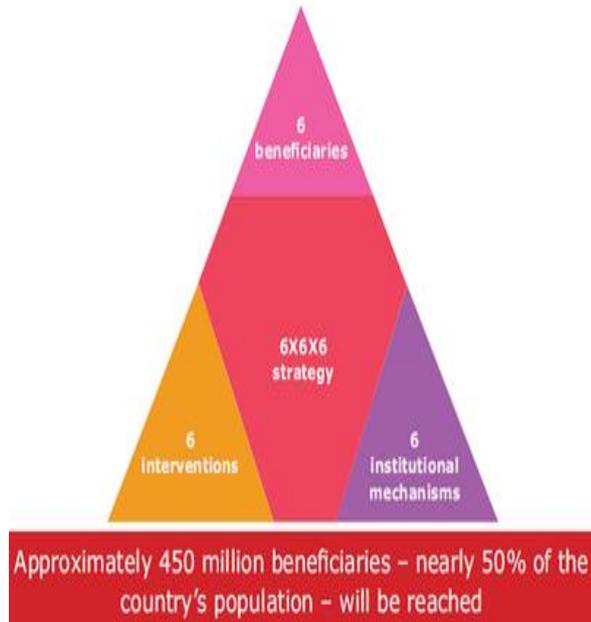
About NCDC

- National Cooperative Development Corporation is an autonomous development finance institution under the **Ministry of Agriculture and Farmers Welfare**.
- NCDC was set up under an Act of Parliament in 1963 for promotion and development of cooperatives.

4) Anaemia 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 Mukt Bharat Unit
- National Centre of Excellence and Advanced Research on Anemia Control
- Convergence with other Ministries
- Strengthening Supply Chain and Logistics
- Anemia Mukt Bharat Dashboard and Digital Portal – One-Stop Shop on Anemia

Why in News?

- In the recently released Anemia Mukt Bharat Index by the Ministry of Health and Family Welfare, **Haryana** secured the top position among 29 states in the country with an AMB Index of 46.7.

5) SERB-POWER

What's in the news?

- The **Ministry for Science and Technology** has launched the SERB-POWER (Promoting Opportunities for Women in Exploratory Research) Scheme.
- The scheme was contemplated by the **Science and Engineering Research Board (SERB)**, a **statutory body** of the Department of Science and Technology (DST).

About the Scheme

- SERB-POWER aims to **mitigate gender disparity in science and engineering research funding** in various S&T programs in Indian academic institutions and R&D laboratories.
- It is specially designed to provide structured effort toward enhanced diversity in research to ensure equal access and weighted opportunities for Indian women scientists engaged in research and development activities.
- SERB-POWER Scheme has two components namely:
 - 1) SERB-POWER Fellowship
 - 2) SERB-POWER Research Grants

SERB-POWER Fellowship

- **Target:** Women researchers in 35-55 years of age. Upto 25 Fellowships per year and not more than 75 at any point in time.
- **Components of support:** Fellowship of Rs. 15,000/- per month in addition to regular income; Research grant of Rs. 10 lakh per annum; and Overhead of Rs. 90,000/- per annum.
- **Duration:** Three years, without the possibility of extension. Once in a career.

SERB- POWER Research Grants

- This will empower women researchers by funding them under the following two categories:
- **Level I** (Applicants from IITs, IISERs, IISc, NITs, Central Universities, and National Labs of Central Government Institutions):

The scale of funding is up to 60 lakhs for three years.

- **Level II** (Applicants from State Universities / Colleges and Private Academic Institutions): The scale of funding is up to 30 lakhs for three years.

6) AMRUT

About AMRUT

- To recast the urban landscape of the country, to make urban areas more livable and inclusive besides driving economic growth, the **Ministry of Housing & Urban Affairs** launched a **centrally sponsored scheme** namely Atal Mission for Rejuvenation and Urban Transformation (AMRUT) in 2015.
- AMRUT seeks to lay a foundation to **enable cities and towns to eventually grow into smart cities.**
- AMRUT adopts a **project approach to ensure basic infrastructure services** relating to water supply, sewerage, septage management, storm water drains, transport and development of green spaces and parks with special provision for meeting the needs of children.

Coverage

- This Mission will be **implemented in 500 cities and towns** each with a **population of one lakh and above**, some cities situated on stems of main rivers, a few

capital cities and important cities located in hilly areas, islands and tourist areas.

Approach

- Implementation of this Mission will be **linked to promotion of urban reforms** such as
 - 1) E-governance,
 - 2) Constitution of professional municipal cadre,
 - 3) Devolving funds and functions to urban local bodies,
 - 4) Review of building bye-laws,
 - 5) Improvement in assessment and collection of municipal taxes,
 - 6) Credit rating of urban local bodies,
 - 7) Energy and water audit and
 - 8) Citizen-centric urban planning.

Funding

- Central assistance will be to the **extent of 50 percent of project cost** for cities and towns with a **population of up to 10 lakh** and **one-third** of the project cost for those with a **population of above 10 lakh.**
- Central assistance will be released in **three instalments in the ratio of 20:40:40** based on achievement of milestones indicated in **State Annual Action Plans.**

Why in News?

- Ministry of Housing and Urban Affairs (MoHUA) conducted a review of the Atal Mission for Rejuvenation and Urban Transformation programme.

Initiatives

1) Meri Saheli

What's in the news?

- The Indian Railways has started the Meri Saheli initiative **for the safety of women passengers**.
- Each Railway Division has formed a team which visits the lady passengers to ensure they are safe and secured.
- They identify the lady passengers and comfort them, especially those travelling alone. They are also informed about **helpline number 182** in case of emergency.

2) STARS Programme

What's in the news?

- The Union Cabinet has approved the STARS programme **partially funded by the World Bank** to carry out a reform agenda in the governance of school education, and improve data and assessment systems at the national level, as well as teaching and learning outcomes in six States.

About STARS Programme

- The STARS programme is an initiative of **India and the World Bank** for **strengthening public school education** and to support the country's goal of providing **'Education for All'**.
- It would be implemented as a new Centrally Sponsored Scheme under the **Ministry of Education**.
- STARS will support India's renewed focus on addressing the 'learning outcome' challenge and help students better prepare for the jobs of the future – through a series of reform initiatives.
- These include:
 - **Focusing more directly on the delivery of education services at the state, district and sub district levels** by providing customized local-level solutions towards school improvement.
 - **Addressing demands from stakeholders, especially parents, for greater accountability and inclusion.**

- **Equipping teachers to manage this transformation** by recognizing that teachers are central to achieving better learning outcomes. The program will support individualized, needs-based training for teachers that will give them an opportunity to have a say in shaping training programs and making them relevant to their teaching needs.
- **Investing more in developing India's human capital needs** by strengthening foundational learning for children in classes 1 to 3 and preparing them with the cognitive, socio-behavioral and language skills to meet future labor market needs.

States Covered

- The project covers **6 States** viz Himachal Pradesh, Rajasthan, Maharashtra, Madhya Pradesh, Kerala and Odisha.

Expected Outcomes

- It is in line with the Sustainable Development Goal for education (**SDG 4: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all**).
- STARS will assist India in participation in the **Programme for International Student Assessment (PISA)**.
- India has successfully achieved **gender parity** in enrolment in primary education. However, for many children, secondary education is the stage when they leave school and enter the workforce. Under STARS, each state is expected to not only stabilize this downward trend but also **improve the completion rate for secondary education**.
- STARS will support the Government of India's vision to provide **greater flexibility to states for school education planning and budgeting**.
- This will help states' implement evidence-based planning to factor in the needs of the most deprived, strengthen accountability at all levels, and thereby adopt a holistic approach to improve education outcomes.

Related Information About PISA

- PISA is a worldwide study by the **Organisation for Economic Co-operation and Development (OECD)** to produce comparable data on education policy and outcomes across countries.
- The study, which began in the year 2000, conducts a test evaluating 15-year-olds in member and non-member countries to **assess the quality and inclusivity of school systems in these countries.**
- India has participated in the PISA test only once before, in 2009. In this round of PISA, where students from Himachal Pradesh and Tamil Nadu sat for the test, India ranked 72nd out of 73 countries. Since then, India has stayed away from the test.

About OECD

- The Organisation for Economic Co-operation and Development is an international, intergovernmental economic organization of more than 30 countries.
- OECD was founded in **1961** to stimulate world trade and economic progress. Its members are committed to Democracy and Market Economy
- Most OECD members are high-income economies with a very high Human Development Index (HDI) and are regarded as developed countries.

- **India is not a member of OECD.**
- Reports and Indices by OECD
 - **International Migration Outlook.**
 - **OECD Better Life Index.**
- **Headquarters:** Paris, France

3) CPGRAMS

About CPGRAMS

- The Centralized Public Grievance Redress and Monitoring System (CPGRAMS), is an online web-enabled system developed by the **National Informatics Centre** in association with the **Department of Administrative Reforms and Public Grievances (DARPG).**
- It has been developed with an objective of speedy redress and effective monitoring of grievances by Ministries/Departments/Organizations of Government of India.
- The CPGRAMS provides the facility to lodge a grievance online **from any geographical location.**
- It enables the citizen to track online the grievance being followed up with Departments concerned and also enables DARPG to monitor the grievance.

The screenshot displays the CPGRAMS website interface. At the top, it shows the Government of India logo and the Department of Administrative Reforms and Public Grievances. The main header includes the CPGRAMS logo and the text 'Centralized Public Grievance Redress And Monitoring System'. Below the header, there is a navigation menu with options like 'View Status', 'Guidelines', 'Nodal PG Officers', 'Redress Process', and 'Grievance'. The central part of the page features a 'REDRESS PROCESS FLOW' diagram with four steps: 01. Citizen Lodges Complaint (Check Grievance Status), 02. COMPLAINT LODGE, 03. ASSESSMENT, and 04. REDRESSED (Redirection of Concern Authority). Below the flow diagram, there are three statistics boxes: 'CPGRAMS On Mobile', 'Receipts 4,61,611 As on 12-04-2020', and 'Disposals 5,03,883 As on 12-04-2020'. At the bottom, there are two red banners: 'Handling Public Grievances pertaining to COVID-19 in Ministries /Departments of GoI' and 'Handling of Public Grievances received in CPGRAMS on COVID-19 in States/UTs'. The footer contains the text: 'This site is designed, developed & hosted by National Informatics Centre, Ministry of Electronics & IT (MeitY), Government of India and Content owned by Department of Administrative Reforms & Public Grievances.'

Why in News?

- The Jammu & Kashmir-Integrated Grievance Redress and Monitoring System (JK-IGRAMS) has been integrated with the offices of district level in the union

territory of Jammu & Kashmir and also with the central CPGRAMS portal.

- With this, Jammu and Kashmir has become the first union territory to integrate district portal with state and thereof with the national portal and this mechanism

can be emulated in other states and union territories.

About NIC

- The National Informatics Centre was established in 1976, as an attached office under the **Ministry of Electronics and Information Technology**.
- The NIC provides infrastructure to help support the delivery of government IT services and the delivery of some of the initiatives of Digital India.

4) DST collaborates with IBM to build STEM

Vigyan Jyoti

- The Vigyan Jyoti programme was launched by the **Department of Science & Technology (DST)** in 2019.
- It aims to **promote Science, Technology, Engineering, and Mathematics (STEM) learning among girl students** and to inspire them towards STEM careers by creating a level-playing field for meritorious girls from grades 9 to 12 to pursue STEM in their higher education, especially from the top colleges in the areas where girls are hugely underrepresented.
- The program provides scholarships, visits to nearby scientific institutions, science camps, lecturers from eminent women scientists, and career counseling.
- The program is currently implemented by **Jawahar Navodaya Vidyalaya (JNV)** in 58 districts, with the participation of about 2900 students.
- It focuses on solving the multidimensional problems associated with **meager representation of women in Engineering and Technology streams in higher education** by building confidence and excitement towards these streams.

Engage with Science

- 'Engage with Science' is an initiative of **Vigyan Prasar** to build interest and create a community of practice with students, teachers, and scientists connecting the high school students to the higher education institutions.
 - *Vigyan Prasar is an autonomous body under the DST to help India's science*

popularization agenda through several strategic initiatives.

- This is an interactive platform that will be built on top of the India Science Over-The-Top (OTT) platform to encourage and inspire high school students to pursue Science & Technology (S&T) for a career.

Why in News?

- The **Department of Science & Technology and IBM India Private Limited** announced collaborations to scale up two DST initiatives--**Vigyan Jyoti** and **Engage with Science**.

Significance

- The partnership with IBM will make these programs of DST and Vigyan Prasar reach the students and teachers in interactive ways on a large scale.
- Scaling up of the interactive learning platform 'Engage with Science' will make learning relevant and foster scientific spirit among the country's youth, it would address the school students directly who need more knowledge outside the classroom and provide insights into an interactive way of learning.

5) Natural gas marketing reforms

What's in the news?

- The Cabinet Committee on Economic Affairs has approved 'natural gas marketing reforms' with an aim to **standardise the procedure to discover the price of gas sold in the market**.

Objectives

- The policy aims to provide **standard procedure for sale of natural gas** in a transparent and competitive manner to discover market price by issuing guidelines for sale by contractor through **e-bidding**.
- This will bring **uniformity in the bidding process** across the various contractual regimes and policies to **avoid ambiguity** and contribute towards **ease of doing business**.
- The policy has also **permitted Affiliate companies to participate in the bidding process** in view of the open, transparent and electronic bidding. This will facilitate and promote more competition in marketing of gas.

- The policy will also grant **marketing freedom to the Field Development Plans (FDPs)** of those Blocks in which Production Sharing Contracts already provide pricing freedom.

Significance

- These reforms will prove very significant for Atmanirbhar Bharat by **encouraging investments in the domestic production of natural gas and reducing import dependence.**
- These reforms will prove to be another milestone in moving towards a **gas based economy** by encouraging investments.
- The increased gas production consumption will help in the **improvement of the environment.**
- These reforms will also help in creating **employment opportunities in the gas consuming sectors including MSMEs.**

- The domestic production will further help in **increasing investment in the downstream industries** such as City Gas Distribution and related industries.

Way Forward

- In India's fuel basket, the share of **natural gas is only around 6%** whereas use of coal is around 50%.
- The dependence on **fossil fuels is around 80-90% for the primary commercial energy** and it needs to be reduced and reoriented towards natural gas.
- **The potential of natural gas is wide** but an extensive exploration is needed. An aggressive and dynamic approach is needed in order to reduce our dependence on coal and move towards achieving **India's goal of increasing the share of natural gas to 15% in the fuel basket by 2030.**

Environment

1) Water conservation: Initiatives and Future Strategies

Context

- In the last few years, numbers of reports and ground level realities have reflected that India right now is going through hard times where **water scarcity and poor sanitation facilities** are a bigger challenge than economic development.
- The **per person disease burden due to unsafe water and sanitation was 40 times higher in India** than in China and 12 times higher than in Sri Lanka in 2016. The disease burden from unsafe water and sanitation was 5 percent of the total in 2016.

Government Initiatives

Jal Jeevan Mission

- Launched in 2019, the chief objective of the Mission is to provide **Functional Household Tap Connection (FHTC) to every rural household by 2024** and thereby **ensuring potable water supply in adequate quantity i.e. @ 55 lpcd (Litres per capita per day)** of prescribed quality on a long-term and regular basis.
- The programme also implements **source sustainability measures** as mandatory elements, such as recharge and reuse through greywater management, water conservation and rainwater harvesting.
- The Jal Jeevan Mission is based on a **community approach** to water and will include **extensive Information, Education and Communication (IEC)** as a key component of the mission. JJM looks to create a **jan andolan for water**, thereby making it everyone's priority.
- **Note:** In the Union Budget 2021-22, the Union government announced the roll out of **Jal Jeevan Mission-Urban** which aims to create universal coverage of water supply in all 4,378

statutory towns as well as sewage management in 500 AMRUT cities.

Jal Shakti Abhiyan

- In 2019, the Ministry of Jal Shakti launched the Jal Shakti Abhiyan in **256 water stressed districts** across the country. This Abhiyan is a mass movement to bring all the stakeholders under one ambit of water conservation drive.
- These districts fell under the **critical or over-exploited groundwater category**, where groundwater was being exploited faster than it could be replenished.
- Under JSA, **five target interventions** to promote water conservation and water resource management, viz. water conservation & rainwater harvesting, renovation of traditional & other water-bodies/tanks, reuse and recharge of bore-wells, watershed development and intensive afforestation etc. are implemented.

Atal Bhujal Yojana

- Atal Bhujal Yojana (Atal Jal) is a Central Sector Scheme with focus on community participation and demand side interventions for sustainable groundwater management in **identified water stressed areas of seven States** in the country viz. Gujarat, Haryana, Karnataka, Madhya Pradesh, Maharashtra, Rajasthan and Uttar Pradesh.
- The scheme, partly funded by the **World Bank**, was launched in 2019 and is being implemented from 1.04.2020 for a period of 5 years.
- ABHY envisages **sustainable groundwater management**, mainly through convergence among various on-going schemes, with emphasis on demand side measures through active involvement of local communities and stakeholders.

- The scheme aims at increasing the capacity of States to manage their ground water resources and for ensuring their long-term sustainability with active participation of the local communities through a mix of top-down and bottom-up approaches.

Composite Water Management Index

- **NITI Aayog** has developed the Composite Water Management Index (CWMI) as an exercise to assess and improve the performance of States/ Union Territories in efficient management of water resources.
- CWMI comprises 9 broad sectors with 28 different key performance indicators covering various aspects of groundwater, restoration of water bodies, irrigation, farm practices, drinking water, policy and governance.
- Index has been quite successful in sensitising the states about the impending water scarcity in the Nation. Since the launch of round I of the Index in 2018, **80 percent of the states have shown improvement with average change in scores being +5.2 points.**

State Government's Initiatives

- Beside these Central Government Interventions, some of the states have initiated state level programmes which have effectively solved the local water problem.
- Some of such schemes are **Jalyukt Shivar** in Maharashtra, **Mukhya Mantri Jal Swavalamban Abhiyan** in Rajasthan, **Neeru Chettu** in Andhra Pradesh, **Mission Kakatiya** in Telangana, **Sujalam Sufalam** in Gujarat, **Integrated Water Resource Management and Artificial Recharge Structures Scheme** in Karnataka.
- Water Resources Department of Government of Andhra Pradesh along with the private partners has developed **Andhra Pradesh Water Resources Information and**

Management System (APWRIMS). It is a Smart Water Solution platform targeting the overarching objective of sustainable water management in the State.

- APWRIMS collects data from 1,254 piezometers on a real time basis across all the 13 districts of the state and correlates the information with all 15,00,000+ bore wells used for agricultural purposes in the state. Since its implementation, **groundwater levels have improved by 2 meter** across the State, despite receiving a 14 percent deficit rainfall.

2) Stockholm Convention

About the Convention

- The Stockholm Convention on Persistent Organic Pollutants is a global treaty to protect human health and the environment from **Persistent Organic Pollutants (POPs)**.
- POPs have the following properties:
 - They **remain intact** in the environment for long periods,
 - Become **widely distributed** geographically,
 - **Accumulate in the fatty tissue of humans and wildlife,** and
 - Have **harmful impacts** on human health or on the environment.
- Exposure to Persistent Organic Pollutants can lead to **serious health effects** including certain cancers, birth defects, dysfunctional immune and reproductive systems, greater susceptibility to disease and damages to the central and peripheral nervous systems.
- The Stockholm Convention, which was adopted in **2001** and entered into force in **2004**, requires its parties to take measures to eliminate or reduce the release of POPs into the environment.
- **Number of Parties:** 184
- **India** had ratified the Stockholm Convention on January 13, 2006.

Annexes under the Convention

- The Stockholm Convention addresses the control of POPs under **three Annexes** that relate to the intended method of controlling their release – **Elimination (Annex A), Restriction (Annex B), or Unintentional Production (Annex C)**.
- Additionally, each Party to the Convention develops and maintains an **Implementation Plan**.

Why in News?

- The Union Cabinet has ratified the **ban on seven Persistent Organic Pollutants** that are hazardous to health and environment listed under the Stockholm Convention.
- These chemicals include **Chlordecone, Hexabromobiphenyl, Hexabromodiphenylether and Heptabromodiphenylether (Commercial octa-BDE), Tetrabromodiphenylether and Pentabromodiphenylether (Commercial penta-BDE), Pentachlorobenzene, Hexabromocyclododecane and Hexachlorobutadiene**.

Delegation of powers

- The Cabinet's decision would enable India to **access the Global Environment Facility (GEF) financial resources**.
- The Cabinet further delegated its powers to ratify chemicals under the Stockholm Convention to **Union Ministers of External Affairs (MEA) and Environment, Forest and Climate Change (MEFCC)** in respect of POPs already regulated under the domestic regulations thereby streamlining the procedure.

Related Information

About GEF

- The Global Environment Facility (GEF) was established during the **1992 Rio Earth Summit** to help tackle our planet's most pressing environmental problems.

- The GEF was jointly established by the **World Bank, the UN Development Program (UNDP) and the UN Environment Program (UNEP)**.
- GEF provides grants to developing countries for projects that benefit the global environment and promote sustainable livelihoods in local communities. GEF projects address **six designated focal areas**: Biodiversity, Climate Change, International Waters, Ozone Depletion, Land Degradation and Persistent Organic Pollutants.
- GEF funds are available to developing countries and countries with economies in transition to meet the objectives of the international environmental conventions and agreements.
- The **World Bank** serves as the GEF Trustee, administering the GEF Trust Fund (contributions by donors).
- The GEF serves as a "**financial mechanism**" to five conventions:
 - 1) The United Nations Convention on Biological Diversity
 - 2) The United Nations Convention to Combat Desertification
 - 3) The United Nations Framework Convention on Climate Change
 - 4) The Minamata Convention on Mercury
 - 5) The Stockholm Convention on Persistent Organic Pollutants

3) Ramsar Convention

About Ramsar Convention

- The Ramsar Convention on Wetlands of International Importance signed in 1971, is an international treaty for the **conservation and sustainable use of wetlands**.
- It is the only global treaty to focus on a single ecosystem (wetlands).
- At present, 171 nations are signatories (including **India**) to the Ramsar Convention. A contracting party agrees to **nominate at least one wetland** in its territory to the List of Wetlands of

International Importance based on enumerated criteria.

- In addition, contracting parties agree to manage all their wetlands based on the concept of **“wise use.”** Wise use means the maintenance of the ecological character of the wetland and allowance of sustainable use for the benefit of people and the environment.

What are Wetlands?

- A wetland is a land area that is saturated with water, either permanently or seasonally, and it takes on the characteristics of a distinct ecosystem
- The Ramsar Convention defines wetlands as "areas of marsh, fen, peatlands or water, whether natural or artificial, permanent or temporary, with water that is static or flowing, fresh, brackish or salt, including areas of marine water, the depth of which at low tide **does not exceed six metres**".
- **Five major wetland types are generally recognized:**
 - 1) Marine (coastal wetlands including coastal lagoons, rocky shores, and coral reefs);
 - 2) Estuarine (including deltas, tidal marshes, and mangrove swamps);
 - 3) Lacustrine (wetlands associated with lakes);
 - 4) Riverine (wetlands along rivers and streams); and
 - 5) Palustrine (meaning “marshy” - marshes, swamps and bogs).
- The definition of wetlands is very broad and includes ponds, water storage areas, low-tide coastal zones and all human-made sites such as fish ponds, rice paddies, reservoirs and salt pans.

About Montreux record

- The Montreux Record is a register of wetland sites on the List of Ramsar wetlands of international importance where **changes in ecological character** have occurred, are occurring, or are likely to occur as a

result of technological developments, pollution or other human interference.

- It is maintained as **part of the Ramsar List.**
- Currently, **Keoladeo National Park** (Rajasthan) and **Loktak Lake** (Manipur) are being kept under the record for taking appropriate steps for ecological restoration.
- **Chilika lake** (Odisha) was placed in the record but was later removed from it.

Why in News?

- **Asan Conservation Reserve** has become **Uttarakhand’s first Ramsar site**, making it a ‘Wetland of International Importance’.

About Asan Conservation Reserve

- The Reserve is located on the banks of **Yamuna River** near Dehradun district in Garhwal region of Uttarakhand.
- Many endangered birds are found here and some even migrate to the Reserve, making it an ecologically important site.
- Strategically located within the **Central Asian Flyways (CAF)**, the reserve homes 330 species of birds, including **critically endangered**-white-rumped vulture (*Gyps bengalensis*), Baer's pochard (*Aythya baeri*); **endangered**- Egyptian vulture (*Neophron percnopterus*), steppe eagle (*Aquila nipalensis*), black-bellied tern (*Sterna acuticauda*), etc.
- It is one of the best-known sites for the congregation of **Ruddy Shelduck** (a migratory species).

4) Blue Flag certification

What is Blue Flag Certification?

- The Blue Flag programme was started in France in 1985 and in areas out of Europe in 2001. The programme **promotes sustainable development in freshwater and marine areas through four main criteria:** water quality, environmental management, environmental education and safety.

- There are **33 environment and tourism-related conditions** for Blue Flag Certification. Few of them include, having proper waste disposal systems, availability of clean water for tourists, disabled friendly etc.
- The certification is awarded by the Denmark-based non-profit **Foundation for Environmental Education (FEE)**, which sets stringent environmental, educational, safety-related and access-related criteria that applicants must meet and maintain.
- Forty-seven countries currently participate in the program, and 4,573 beaches, marinas, and boats have this certification.
- Indian beaches are being developed by the **Society for Integrated Coastal Management (SICOM)** according to the Blue Flag certification standards.
- The beaches selected for the certification are: Kappad (Kerala), Shivrajpur (Gujarat), Ghoghla (Diu), Kasarkod and Padubidri (Karnataka), Rushikonda (Andhra Pradesh), Golden (Odisha) and Radhanagar (Andaman & Nicobar Islands).
- This will boost the tourism benefiting the local industries and people and also will help in creating awareness about sustainability.

Related Information **SICOM**

Why in News?

- SICOM has been established under the aegis of the **Ministry of Environment, Forests and Climate change** with a vision for vibrant, healthy and resilient Coastal and Marine Environment.
- SICOM has conceived an integrated coastal management scheme named **BEAMS (Beach Management Services)** to reduce existing pollutants on beaches and to aspire & achieve such high International Standards in India.

Flora and Fauna

1) Snow leopard habitat conservation

About Snow leopards

- Snow leopards are highly adapted to the cold high mountains. It is a large cat native to the mountain ranges of Central and South Asia.
- Their thick fur patterned with dark rosettes and spots (a pattern that is unique to each individual snow leopard) is the perfect camouflage for their rocky habitat, allowing them to stalk their prey.
- The snow leopard is found in 12 countries — **India, Nepal, Bhutan, China, Mongolia, Russia, Pakistan, Afghanistan, Kyrgyzstan, Kazakhstan, Tajikistan and Uzbekistan**—but their population is dropping.
- In India, it is found in Kashmir, Ladakh, Himachal Pradesh, Uttarakhand, Sikkim and Arunachal Pradesh.
- **Protection Status:** IUCN Red List: **Vulnerable**; CITES: **Appendix I**; Wildlife Protection Act (1972): **Schedule I**.

Conservation efforts of Snow leopard

- The Government of India has identified the snow leopard as a **flagship species** for the high-altitude Himalayas.
- **Project Snow Leopard (PSL):** Launched in 2009 by the Government of India, it aims to safeguard and conserve India's unique natural heritage of high altitude wildlife populations and their habitats by promoting conservation through participatory policies and actions.
- India is also a party to the **Global Snow Leopard and Ecosystem Protection (GSLEP)** Programme since 2013.
 - *GSLEP is a high-level intergovernmental alliance of 12 snow leopard range countries. It majorly focuses on the need for awareness and understanding of the value of Snow Leopard for the ecosystem.*

Why in News?

- International Snow Leopard Day was celebrated on 23rd October to create awareness about the conservation and preservation of Snow Leopards.

2) Himalayan brown bear

About



- A subspecies of the brown bear, the Himalayan brown bear (*Ursus arctos isabellinus*), occupies the **higher reaches of the Himalayas in India, Pakistan, Nepal, China and Bhutan.**
- **Omnivorous** in nature, they are listed under **Schedule 1 of the Indian Wildlife (Protection) Act of 1972.**
- IUCN status: **Least Concern.**

Why in the news?

- A recent study on the Himalayan brown bear by scientists of the **Zoological Survey of India** predicted a significant reduction in suitable habitat and biological corridors of the species in the climate change scenario.
- The study titled '**Adaptive spatial planning of protected area network for conserving the Himalayan brown bear**' predicted a massive decline of about 73% of the bear's habitat by the year 2050.
- The scientists suggest an **adaptive spatial planning** of protected area (PA) networks in the western Himalayas for conserving the species.

What is it?

- Adaptive spatial planning of PAs broadly refers to conserving the existing landscape and augmenting the fragmented areas of the habitat of the species. Under this, the nearby promising areas around the existing Protected Areas in the Himalayas are brought within the PAs.
- It is aimed at **minimising the risks and uncertainty of climate change.**

Related Information

About ZSI

- The Zoological Survey of India (ZSI) is the premier taxonomic research organization in India.

- It was established in **1916** to promote surveys, exploration and research leading to advancement of our knowledge of various aspects of the exceptionally rich animal life of India.
- The ZSI had its genesis as the Zoological Section of the Indian Museum at Calcutta in 1875.
- At present, it is under the aegis of the **Ministry of Environment, Forests and Climate change**.

Agriculture

1) Sustainable crop production

Context

- Sustainable crop production refers to crop production practices that ensure high and stable yield over time, without affecting soil and ecosystem health. Important sustainable crop production practices have been briefly discussed below.

Soil Health Management

- Soil health is crucial for agriculture as a healthy soil acts as a dynamic living system delivering multiple ecosystem services. Although India has diverse types of soil, most of them are **deficient in nitrogen and phosphorus**.
- The **ideal NPK** (nitrogen, phosphorous, potassium) **proportion** for the Indian soil is **4:2:1**, against the actual ratio of 6.10:2.46:1 (as of 2017-18).
- With the increasing availability of low-cost fertilisers, the **importance of organic manure is largely ignored** by farmers. Practices like **intensive cultivation and residue burning** has further reduced the organic carbon content in soil.

Remedial measures

- **Organic amendments** such as farm yard manure, green manure, compost, vermicompost, etc. need to be added to soil regularly to increase the organic matter content of the soil.
- **Growing legumes as green manuring crops or cover crops** (sunhemp, cowpea, sweet clover, lentil, etc.) protects soil from erosion by keeping the soil covered as well as adding organic matter, fixes nitrogen, improves soil structure and other beneficial effects.
- **Use of agro-chemicals should be monitored** to avoid any toxic build up in soil.

Conservation Agriculture

- Conservation Agriculture is a farming system that **promotes minimum soil disturbance (i.e. no tillage), maintenance of a permanent soil cover and diversification of plant species**.
- Conservation agriculture **addresses several challenges** like increasing soil carbon storage and decreasing greenhouse gas emission, promoting sustainable agriculture, preserving environment and natural resources and preserving biodiversity.
- For minimum soil disturbance, farmers follow **zero tillage or controlled tillage** which allows direct planting without ploughing or soil preparation.
- The **benefits of minimum soil disturbance** include: reduced soil emission, reduced greenhouse gases (GHG) emission, improvement in soil fertility, avoids soil compaction and soil surface sealing. It also increases organic matter and sequestration of carbon in soil, as well as improves its structure and water retention capacity.
- Maintaining a soil cover also helps **reduce soil erosion**.
- Another key principle of conservation agriculture is **crop diversification or sensible crop rotation**. As only cereal based crop rotation results in pest build up and reduces soil fertility to a great extent, replacing them with a more sensible system helps minimise the negative impacts.

Crop Residue Management

- Burning of crop residues **removes a huge amount of nutrients** from the soil. In addition to this, it releases **carbon monoxide, carbon dioxide and other toxic gases** which cause air pollution leading to multiple health issues.
- **In situ management of crop residue** can be done through conservation agriculture practice. Instead of burning

crop residues, the crop residues can also be used for alternate beneficial use.

- Such **alternate beneficial uses** of crop residue include compost production, bioenergy production (through gasification or bio-oil production), biochar production, in pulp and paper industry, etc.
- Use of crop residues as compost, soil cover or even biochar can help in improving soil fertility and productivity.

Integrated Nutrient Management

- Integrated Nutrient Management (INM) refers to **maintenance of soil fertility and plant nutrient supply at an optimum level** for sustaining desired productivity through optimization of the benefits from all possible sources of organic, inorganic and biological components in an integrated manner.
- INM helps in **reducing the dependence on synthetic fertilizers**, thus **reducing the cost of cultivation** for farmers. INM may help in the optimized use of all available resources with farmers to **maintain or improve soil fertility**.

Integrated Pest Management

- Integrated Pest management (IPM) is the careful consideration of all available pest control techniques and it **considers all available control options** such as cultural, physical, chemical and biological methods to control pests. It also focuses on prevention, monitoring, forecasting and early diagnosis as tools for pest control.
- As IPM **reduces dependence on chemical pest control**, hence, **risks to human health and environment is reduced**. IPM also helps **delay the risk of pesticide resistance development**.
- In addition to ecological benefits, IPM can also give **economic benefit** as the

cost of pest control is reduced in this approach.

Inclusion of Legumes in Cropping System

- Legumes belong to the family Leguminosae or Fabaceae and are known for their **nitrogen fixing ability**. Legumes add nitrogen to the soil through nitrogen fixation **improves phosphorus availability** through rhizosphere modification and **helps in nutrient cycling** by bringing the subsoil nutrient to the top soil through its deep root system.
- Legumes also **supply a good amount of organic matter to soil, reduce soil erosion and act as weed suppressant**. Legumes also act as **biological plough** and **reduce the subsoil compaction** through its deep root system.
- In addition to these benefits, legumes provide the necessary **dietary diversity**. Pulses are a good source of protein and contain amino acid lysine that most cereals are deficient of.

Climate Smart Agriculture

- Climate Smart Agriculture (CSA) is an approach for developing strategies to secure sustainable food security under changing climatic scenarios.
- According to the Food and Agriculture Organization (FAO), Climate smart agriculture has **three main pillars**:
 1. Sustainably increasing agricultural productivity and income,
 2. Adapting and building resilience to climate change and
 3. Reducing and/or removing greenhouse gas emissions to a safe level.
- Climate change is being considered as a serious threat to the livelihood of Indian farmers with about **82 percent of farmers from small and marginal category** (FAO, 2020).
- To meet the challenge of climate change on sustainability of Indian agriculture, Indian Council of Agricultural Research (ICAR) has

launched **National Innovations on Climate Resilient Agriculture (NICRA)** in 2011 that has been evolving climate resilient agricultural technologies and also demonstrating the best practices that can help farmers to cope with current climate variability.

Resource Conserving Technologies

- Resource conserving technologies (RCTs) can help achieve higher productivity in resource poor areas. RCTs help in **improving input use efficiency and minimise loss of inputs**.
- RCTs like **zero tillage** reduce the cost of tillage, give similar or higher yield, reduce weed infestation in the field etc. **Direct seeded rice** (*Refer Pulse July edition*) holds the promise of saving irrigation water and labor requirements.
- Use of **Hydrogel** (a water absorbing material) in dry land or limited water conditions can improve water use efficiency. Irrigation practices like **drip or sprinkler methods** also show high water use efficiency and can save irrigation water.
- Use of **GIS and GPS** for precise agricultural input management (precision farming) can also be considered as a resource conserving technology.

2) Innovative practices for smart agriculture

Context

- World's population is expecting a one-third increase from now to 2050. At the same time, more people will be living in cities.
- If current income and consumption growth trends continue, the **Food and Agriculture Organisation (FAO)** estimates that **agricultural production will have to increase by 60 percent by 2050 to satisfy the**

expected demands for food and feed.

- Agriculture must therefore transform itself if it is to feed a burgeoning global population and provide the basis for economic growth and poverty reduction.

Innovative Practices for Higher Resource Use Efficiency

Precision in Seed Sowing and Planting

- Effective seeding requires control over two variables: planting seeds at the **correct depth**, and spacing plant at the **appropriate distance apart** to allow for optimal growth.
- Precision seeding equipment is designed to maximise these variables every time. They combine geo mapping and sensor data detailing soil quality, density, and moisture and nutrient levels for the seeding process.

Precision in Nutrient Management

- **Smart Fertilisers:** Smart fertilisers are a new type of fertilisers which are formulated **based on micro-organisms and nano-materials**. Nanotechnology based smart fertilisers are developed with an emphasis on controlled-release and/or carrier/delivery systems will synchronise nutrient availability with the plant demands thereby reducing nutrient losses.
- **Leaf Colour Chart:** Leaf colour is a fairly good indicator of the **nitrogen status of a plant**. Nitrogen use can be optimised by matching its supply to the crop demand as observed through change in the leaf chlorophyll content and leaf colour.
- **SPAD Value:** SPAD (Soil-Plant Analysis Development) is a simple, quick and portable diagnostic tool for **monitoring leaf nitrogen (N) status** and improving the timing of N topdressing in rice.
- **Urea Deep Placement (UDP):** In the UDP technique, urea is made into "briquettes" of **1 to 3 grams that are**

placed at 7 to 10 cm soil depth after the paddy is transplanted. This technique decreases nitrogen losses by 40 percent and increases urea efficiency to 50 percent. It increases yields by 25 percent with an average 25 percent decrease in urea use.

Innovative Practices for Efficient Water Management

- **Automation Irrigation System:** Pressurised irrigation systems like sprinkler, drip and subsurface drip irrigation are already prevalent irrigation methods that allow farmers to control when and how much water their crops receive.
- **On-farm Reservoir (OF):** Rainwater harvesting and efficient water use are inevitable options to sustain rainfed agriculture in future.
- **Deficit Irrigation Supplies:** The adoption of deficit irrigation such as **regulated deficit irrigation and controlled late-season deficit irrigation** are becoming an accepted strategy for water conservation and to reduce the amount of water used for crop Production.

Innovative Practices for Weed and Pest Management

- **New Generation Herbicides:** Recently some post emergence new generation herbicides are available in the market with the assurance of selective effective control of weeds in field crops. These herbicides are required in very low doses and these are very easy in handling and transportation.
- **Herbicide Resistant Crops (HRCs):** Herbicide resistant crops are genetically modified (GM) crops engineered to resist specific broad-spectrum herbicides, which kill the surrounding weeds, but leave the cultivated crop intact. If the Government of India allows growing herbicide resistant GM crops then weed management will be more efficient.

- **Artificial Intelligence and Automation in Weed Management:** Weeds and pests management are the most critical aspects of plant growth and development which can be perfectly managed through autonomous robots. A few prototypes are already being developed to monitor the crops and simultaneously control the weeds.

Innovative Practices for Higher Productivity and Profitability

Crop Diversification

- Crops which are less productive or need more inputs should be substituted with more remunerative, less inputs requiring and which sustain the soil fertility.
- It will not only reduce water requirements but also enhance the system productivity which leads to an increase in farmers' income.

Integrated Farming Systems (IFS)

- IFS is adoption and integration of wide ranges of resource saving package of practices to make the whole system economically sustainable, ecologically renewable, socially acceptable, minimise the negative impacts of intensive farming and preserve as well as improve the environment.
- It is a system which focuses on increasing farm productivity by increasing diversification, resource integration and creating market linkages.
- The approach applied on small land holdings has been successful to **meet household food, fodder, feed, fuel requirements of a family**, and achieve other goals including **reduced production cost, increased profits, nutritional security, more employment opportunity, regular income and environmental safety.**
- Horticultural crops mainly fruits and vegetables and dairy and goat farming are among promising enterprises

which integrate with existing farming systems to enhance income manifold.

Economy

1) Sunset clause

What is a 'sunset' clause?

- Sunset clauses require that certain provisions or laws will **cease to be effective from a predetermined date unless they are reauthorized**.
- Sunset clauses have been frequently used in India in fiscal and tax laws, e.g., tax holidays and exchange control regulations.
- The Constitution itself provides for a 10 year sunset for reservations to Parliament and legislative assembly seats (**Article 334**).
- Such provisions are an admission by the lawmakers that the law is not made for eternity and a recognition that circumstances change over time—whether it is one year or five years.

Why is it needed?

- By allowing specific time periods for the operation of laws, this tool could allow policymakers to push for new ideas to be implemented.
- Having a fixed tenure in effect also ensures certainty of law.

Why in News?

- NITI Aayog Vice-Chairman Rajiv Kumar recently said that any tariff protection to promote local manufacturing in India will come with an in-built sunset clause.
- He emphasised that India's efforts towards self-reliance are not dissimilar to what other nations are doing to insulate themselves from global supply chain shocks and revive the economy. It will not imply in any sense, any form of isolation, closed economy or protectionism.

2) Public debt to GDP ratio

What is Public debt?

- Public debt is the total amount borrowed by the government of a country.

- In the Indian context, public debt includes the **total liabilities of the central and state governments**.
- The **Fiscal Responsibility and Budget Management (FRBM) Review Committee Report** has recommended a debt to GDP ratio of 60% for the general (combined) government by 2023, comprising 40% for the Central Government and 20% for the State Governments.
- At present, the public debt calculated as general government liabilities, which includes the liabilities of Centre and states, is **72.2% of the country's GDP (as of FY20)**.
- As per Reserve Bank of India Act of 1934, the **Reserve Bank manages public debt on behalf of the Central and the State Governments**.

Sources of Public Debt

- These are listed as follows:
 - 1) Dated government securities or G-secs
 - 2) Treasury Bills or T-bills
 - 3) External Assistance
 - 4) Short term borrowings

Public Debt vs. Private Debt

- Public Debt is the money owed by the Union and State governments, while private debt comprises all the loans raised by private companies, corporate sector and individuals such as home loans, auto loans, personal loans.

Why in News?

- The **International Monetary Fund (IMF)** has projected that India's public debt ratio will jump by 17 percentage points to almost 90% of India's GDP because of an increase in public spending due to COVID-19 and the fall in tax revenue and economic activity.
- It remained remarkably stable at about 70% of the GDP since 1991.
- Going forward, it is projected to stabilise in 2021, before slowly declining up to the end of the projection period, in 2025. As per IMF,

the pattern of public debt in India is close to the norm around the world.

3) CPI-IW

About CPI

- Consumer Price Index is an index which measures the weighted average of prices of a basket of consumer goods and services such as transportation, food and medical care.
- It is calculated by measuring price changes for each item in the **predetermined basket of goods and services** and averaging them.

How does the Consumer Price Index help?

- The Reserve Bank of India and other statistical agencies study CPI so as to understand the price change of various commodities and keep a tab on inflation.
- CPI is also a helpful pointer in understanding the real value of wages, salaries and pensions, the purchasing power of a country's currency; and regulating prices.

Who maintains the Consumer Price Index in India?

- In India, different types of consumer price index numbers are released by the government which includes:
 - CPI for Industrial Workers (IW)
 - CPI for Agricultural Labourers (AL)
 - CPI for Rural Labourers (RL)
- The **Ministry of Labour & Employment** collects the data for CPI (IW), CPI (AL) and CPI (RL) and compiles it.
- In addition to these, the **National Statistical Office (NSO), Ministry of Statistics and Programme Implementation** is releasing
 - CPI for Rural
 - CPI for Urban and
 - CPI Combined (computed by combining CPI Rural and CPI Urban)

What is the base year of an Index?

- The CPI is calculated with **reference to a base year**, which is used as a benchmark. The price change pertains to that year.
- In India, the base years of the current series of CPI (IW) is **2001**. The base year of CPI (AL) and CPI (RL) is **1986-87**.
- For CPI Rural, Urban and Combined, the base year is **2011-12**.

Why in News?

- The Ministry of Labour and Employment has **revised the base year** of the Consumer Price Index for Industrial Workers (CPI-IW) from **2001 to 2016** to reflect the changing consumption pattern, giving more weightage to spending on health, education, recreation and other miscellaneous expenses, while reducing the weight of food and beverages.
- Under the new series, the weightage for the food group has gone down to 39.17 per cent from 46.2 per cent in the 2001 series, while weight of miscellaneous items, like education and health has risen to 30.31 per cent from 23.26 per cent. The weight of housing and clothing and footwear have changed to 16.87 per cent from 15.27 per cent and to 6.08 per cent from 6.57 per cent.
- The CPI-IW is used as a benchmark for **calculating dearness allowance (DA)** for government employees, **dearness relief** for pensioners and **wages** for industrial workers in some sectors.
- The government announced that in the future, it would work towards revising the index every five years.

4) Index of Industrial Production

About IIP

- Index of Industrial Production (IIP) details out the growth of various sectors in an economy such as mineral mining, electricity and manufacturing.

- It is compiled and published every month by the **Ministry of Statistics and Programme Implementation**.
- The current base year is **2011-2012**.
- The **Eight Core Industries** (Coal, Crude Oil, Natural Gas, Refinery Products, Fertilizers, Steel, Cement and Electricity) comprise 40.27 per cent of the weight of items included in the IIP.

Why in News?

- India's industrial output fell for the sixth month in a row this August.
- The index of industrial production (IIP) shrank 8% in August on a year-on-year basis, marking a marginally improvement compared with July when output contracted 10.8% as per revised estimates.

5) Foreign Exchange Reserve

What is meant by "Foreign Exchange Reserve"?

- Foreign Exchange Reserve indicates the reserves held by RBI in the form foreign currency assets, gold, SDR and reserve tranche. Components of foreign exchange reserve:
 1. **Foreign Currency Assets-** Currencies of foreign countries are held in foreign exchange reserves. Apart from currency it also includes foreign currency deposits held by RBI with foreign central banks and the Bank for International Settlements (BIS).
 2. **Gold Stock of RBI-** The RBI has gold stock as a backup to issue currency and to meet unexpected Balance of Payments (BOP) problems. (*BOP problem occurs when a nation is unable to pay for essential imports or service its external debt repayments*)
 3. **SDR Holdings-** Special Drawing Rights (also called "*paper gold*") is a reserve created by the **IMF** to help countries that have BOP problems. The member countries have to contribute to this account in proportion to their IMF quota. The SDR basket consists of **five** major currencies of the world - the US

dollar, Euro, British Pound, Chinese Renminbi and Yen (Japan).

4. **Reserve Tranche-** The reserve tranche is a portion of the required quota of currency that each **IMF** member country must provide to the IMF. It can be accessed by the member country at any time for its own purposes without a service fee.

Why in News?

- India's foreign exchange reserves have recorded a rise of 3.618 billion dollars to touch a new high of 545.638 billion dollars in the week ended 2nd October.
- **Foreign currency assets**, a major part of the overall reserves, increased by 3.104 billion dollars to 503.046 billion dollars.
- The **gold reserves** rose by 486 million dollars in the reporting week to reach 36.486 billion dollars. The country's **special drawing rights** with the International Monetary Fund rose marginally by 4 million dollars to 1.476 billion dollars, while **reserve position** with the IMF also went up by 23 million dollars to 4.631 billion dollars.

6) GIFT City

About IFSC

- An International Financial Services Centre (IFSC) is a jurisdiction that provides **world class financial services to non-residents and residents**, to the extent permissible under the current regulations, in a currency other than the domestic currency (Indian Rupee) of the location where the IFSC is located.
- **Services provided by an IFSC:**
 - Fund-raising services for individuals, corporations and governments
 - Asset management and global portfolio diversification undertaken by pension funds, insurance companies and mutual funds

- Wealth management
- Merger and acquisition activities among trans-national corporations, etc.

GIFT City

- India's 1st IFSC was set up at the **Gujarat International Finance Tec-City** (GIFT City) in Gandhinagar in 2011.
- It is intended to provide Indian corporates with easier access to global financial markets, and to complement and promote the further development of financial markets in India.

Why in News?

- The U.K. has entered into a strategic partnership to develop the international financial services centre GIFT City.
- India and U.K. also signed off on a new infrastructure finance and policy partnership to help India execute its **National Infrastructure Pipeline** that envisages investments worth \$1.4 trillion.
- To mobilise private capital for green investment, a new **U.K.-India Sustainable Finance Forum** is also being established.

About National Infrastructure Pipeline

- To achieve the **GDP of \$5 trillion by 2024-25**, India needs to spend about **\$1.4 trillion (100 lakh crore)** over these years on infrastructure. To implement an infrastructure program of this scale, the government has envisaged the National Infrastructure Pipeline (NIP).
- NIP, launched in 2019, envisages an investment of **Rs 111 lakh crore** on infrastructure projects by the year 2024-25.
- The NIP—jointly funded by the **central government (39%)**, **state government (40%)** and the **private sector (21%)**—aims to invest in projects spanning across sectors such as energy, social and commercial

infrastructure, communication, water and sanitation.

7) Co-operative banks

About Co-operative banks

- Co-operative banks are financial entities established on a co-operative basis and belonging to their members. This means that the customers of a co-operative bank are also its owners.
- These banks provide a wide range of regular banking and financial services.

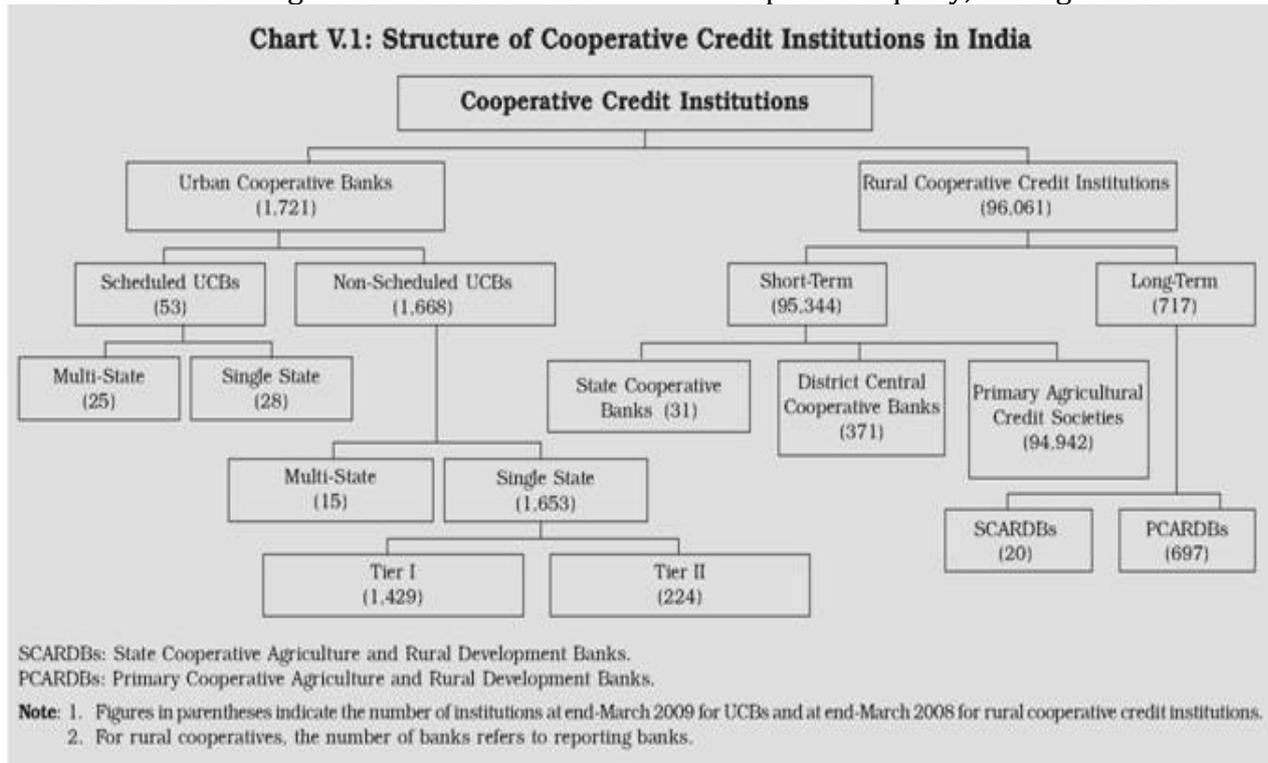
Structure of co-operative banks in India

- Broadly, co-operative banks in India are divided into two categories - **urban and rural**.
- Rural cooperative credit institutions could either be short-term or long-term in nature. Further, **short-term** cooperative credit institutions are further sub-divided into State Co-operative Banks, District Central Co-operative Banks, and Primary Agricultural Credit Societies.
- Meanwhile, the **long-term** institutions are either State Cooperative Agriculture or Rural Development Banks (SCARDBs) or Primary Cooperative Agriculture and Rural Development Banks (PCARDBs).
- On the other hand, Urban Co-operative Banks (UBBs) are either **scheduled or non-scheduled**. Scheduled and non-scheduled UCBs are again of two kinds- **multi-state** and those operating in a **single state**.

Who oversees these banks?

- In India, co-operative banks are registered under the **States Cooperative Societies Act**.
- Cooperative banks are currently under the **dual control** of the Registrar of Cooperative Societies and RBI.
- While the role of registrar of cooperative societies includes incorporation, registration, management, audit, supersession of board and liquidation, RBI is responsible for regulatory functions

such maintaining cash reserve and capital adequacy, among others.



Direct RBI supervision

- In 2020, the Parliament passed a law to bring **all urban and multi-State cooperative banks** under the **direct supervision of the RBI**.
- Previously, these banks came under dual regulation of the RBI and the Registrar of Co-operative Societies.
- The move was aimed at strengthening lenders' oversight, boosting depositors' confidence, and preventing instances of fraud and financial irregularities.

Why in News?

- In an affidavit filed in the Madras High Court, the Reserve Bank of India has said that there is no violation of any

law in bringing the cooperative banks under its supervisory control.

- It submitted that the RBI is empowered to regulate any banking activity including those by the cooperative bodies.
- The RBI further mentioned that 430 urban cooperative banks in the country have lost their banking licenses due to very poor financial positions.
- The affidavit is response to petitions filed by two cooperative banks in Tamil Nadu against the Central Government ordinance bringing them under the RBI control. The ordinance has since been replaced by a law.

Organisations

1) OPEC

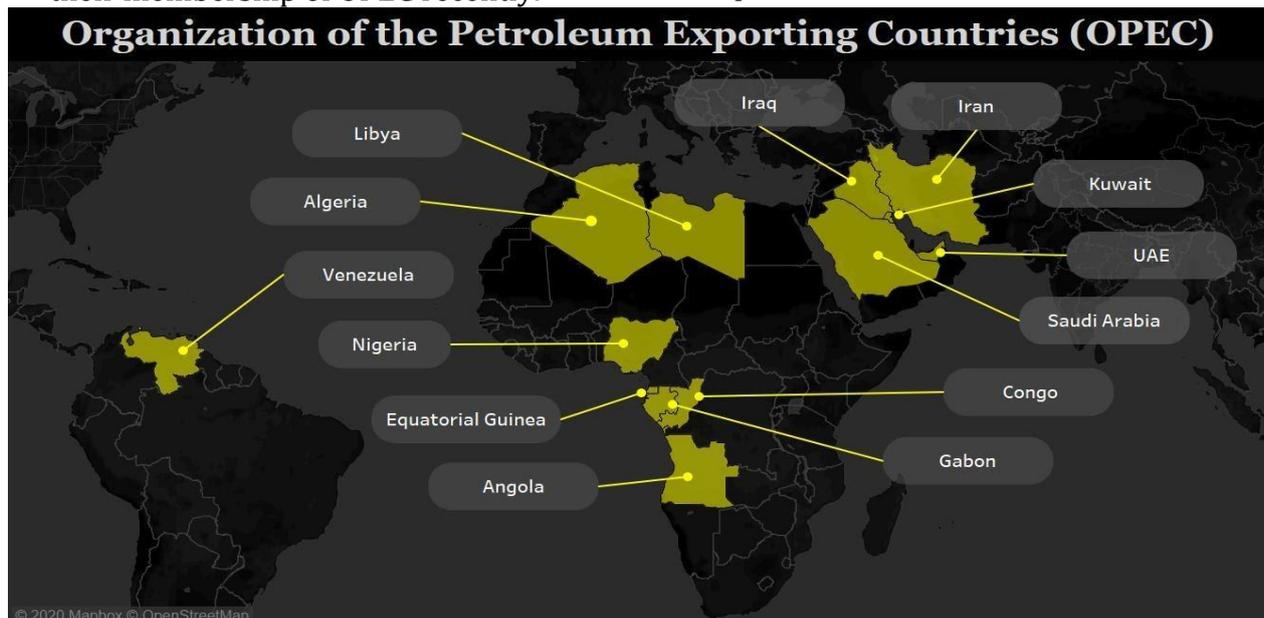
About OPEC arrangement

- The Organization of the Petroleum Exporting Countries (OPEC) is a group consisting of **13 of the world's major oil-exporting nations**.
- Countries that belong to OPEC include **Iran, Iraq, Kuwait, Saudi Arabia, and Venezuela** (the five founders), plus the **United Arab Emirates, Libya, Algeria, Nigeria, Angola, Congo, Equatorial Guinea and Gabon**.
- OPEC was founded in 1960 to coordinate the petroleum policies of its members and to provide member states with technical and economic aid.
- **Note:** Ecuador and Qatar terminated their membership of OPEC recently.

- OPEC is used to work as a cartel and fix prices in a favourable band. It could bring down prices by increasing oil production and raise prices by cutting production.

OPEC Plus

- The 2014 oil crisis, which was accentuated by oversupply of crude, brought down prices below \$30 a barrel. Since then, OPEC has been working with **non-OPEC countries** like Russia, Azerbaijan, Bahrain, Brunei, Kazakhstan, Malaysia, Mexico, Oman, Sudan and South Sudan to fix the global prices and supply.
- Known as the **“OPEC Plus” arrangement**, this alliance kept production lower and pumped up the prices.



Why in News?

- The Organisation of Petroleum Exporting Countries recently forecasted that lockdowns and curfews in some countries in the event of a second or third wave of COVID-19 infections will not dent global energy demand as much as in the second quarter of this year when the world was virtually in lockdown mode.

2) European Union

About EU

- The European Union (EU) is a unique **economic and political union** between 27 European countries.
- The **United Kingdom**, which had been a founding member of the EU, left the organization in 2020.
- The EU was created by the **Maastricht Treaty**, which entered into force on November 1, 1993. The treaty was

designed to enhance European political and economic integration by creating a single currency (the euro), a unified foreign and security policy, and common citizenship rights and by advancing cooperation in the areas of immigration, asylum, and judicial affairs.

- Additionally, the **Treaty of Lisbon**, enacted in 2009, gave the EU more broad powers that included being authorized to sign international treaties, increase border patrol, and other security and enforcement provisions.
- EU's headquarters is currently located in Brussels, Belgium.
- Currently, the euro is the official currency of 19 out of 27 EU member countries which together constitute the **Eurozone**, officially called the **euro area**.



Why in News?

- The European Union has imposed sanctions on six Russian officials and one organisation over the poisoning of Russian opposition leader Alexei Navalny with a Soviet-era nerve agent- **Novichok**.
- The tests conducted at labs designated by the **Organisation for the**

Prohibition of Chemical Weapons confirmed that Navalny was poisoned by a Novichok nerve agent.

Related information

About Chemical Weapons Convention

- The Chemical Weapons Convention (CWC) is a universal, non-discriminatory, multi-lateral, disarmament treaty which prohibits the development, production, stockpiling 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**.

About OPCW

- The Organisation for the Prohibition of Chemical Weapons (OPCW) is the **implementing body for the Chemical Weapons Convention**.
- The OPCW, with its 193 Member States (including **India**), oversees the global endeavour to permanently and verifiably eliminate chemical weapons.

3) NAM Summit

About the NAM

- The Non-Aligned Movement was formed during the Cold War as an organization of States that did not seek to formally align themselves with either the United States or the Soviet Union, but sought to remain independent or neutral.
- NAM was officially founded in 1961, at the **Belgrade Summit**, drawing on the principles (also known as **Bandung Principles**) agreed at the Afro-Asian Conference held in Bandung, Indonesia in 1955.
- Such principles were adopted later as the main goals and objectives of the

policy of non-alignment. The fulfillment of those principles became the essential criterion for Non-Aligned Movement membership.

- The ten principles of Bandung are followings:
 - 1) Respect of fundamental human rights and of the objectives and principles of the Charter of the United Nations.
 - 2) Respect for the sovereignty and territorial integrity of all nations.
 - 3) Recognition of the equality among all races and of the equality among all nations, both large and small.
 - 4) Non-intervention or non-interference into the internal affairs of another - country.
 - 5) Respect the right of every nation to defend itself, either individually or collectively, in conformity with the Charter of the United Nations.
 - 6) Non-use of collective defense pacts to benefit the specific interests of any of the great powers. Non-use of pressures by any country against other countries.
 - 7) Refraining from carrying out or threatening to carry out aggression, or from using force against the territorial integrity or political independence of any country.
 - 8) Peaceful solution of all international conflicts in conformity with the Charter of the United Nations.
 - 9) Promotion of mutual interests and of cooperation.
 - 10) Respect of justice and of international obligations.
- India is one of the **founding members** of the NAM.
- The following are considered to be the founding fathers and historic leaders of the Movement: **Joseph Broz Tito** (President of Yugoslavia), **Gamal Abdel Nasser** (President of Egypt), **Jawaharlal Nehru** (Prime Minister of India), **Sukarno** (President of Indonesia), and **Kwame Nkrumah** (President of Ghana).

Why in News?

- Minister of State for External Affairs V Muraleedharan recently participated in the virtual Ministerial Meeting of the Non-Aligned Movement.

4) COVAX facility

What is it?

- The COVAX facility seeks to accelerate the development and production of coronavirus vaccines through pooling in resources from the member countries, and then ensure that it is equitably distributed amongst them.
- COVAX is led by the **World Health Organization (WHO)**, the **Coalition for Epidemic Preparedness Innovations (CEPI)** and **GAVI**, the Vaccine Alliance.
- COVAX supports research and development of new vaccines by investing in them and negotiating prices with pharmaceutical companies.
- The goal of COVAX is to have 2 billion doses to distribute by the end of 2021, which should be enough to help countries vaccinate 20% of their populations and end the acute phase of the pandemic.

Why in News?

- India is among the 92 countries that are eligible to access COVID-19 vaccines through COVAX Advance Market Commitment (AMC), a donor-supported mechanism that will help cover part of the cost of vaccines to ensure that all countries can access them.

Related information

About CEPI

- The Coalition for Epidemic Preparedness Innovations (CEPI) is a global partnership between public, private, philanthropic, and civil society organisations to **develop vaccines to stop future epidemics**.
- It was launched in Davos in 2017.

About GAVI Alliance

- Created in 2000, the GAVI Alliance (formerly the Global Alliance for

Vaccines and Immunisation) is a global health partnership of public and private sector organizations dedicated towards creating **equal access to new and underused vaccines for children living in the world's poorest countries.**

- It's core partners, the World Health Organization, UNICEF, the World Bank and the Bill & Melinda Gates Foundation,
- GAVI's strategy supports its mission to save children's lives and protect people's health by increasing access to immunisation in poor countries.

Science and Technology

1) First room-temperature superconductor

Superconductors

- A superconductor is a substance that **conducts electricity without resistance when it becomes colder than a "critical temperature."** At this temperature, electrons can move freely through the material.
- The critical temperature for superconductors is the temperature at which the **electrical resistivity of a metal drops to zero.**
- When a superconductor is cooled under the critical temperature, then it doesn't permit the magnetic field to go through in it. This property of superconductors is known as the **Meissner effect.**

Applications of Superconductors

- **Maglev (magnetic levitation) trains** use the principle of superconductivity. A superconductor repels a magnetic field so a magnet will float above a superconductor - this virtually eliminates the friction between the train and the track.
- The **Large Hadron Collider (LHC)** is one of the biggest applications of superconductivity, with 23 kilometres of superconducting magnets around its 27-kilometre circumference. LHC is the world's largest and most powerful particle accelerator. It was built by the **European Organization for Nuclear Research (CERN).**
- **SQUIDS** (Superconducting QUantum Interference Devices) are used to detect even the weakest magnetic field. They are used in mine detection equipment to help in the removal of landmines.
- Superconductors also make **electricity transmission** more efficient.
- Superconducting magnets are also used in **Magnetic Resonance Imaging (MRI) machines.**

- Superconductors are also being used for the development of high-intensity **Electro Magnetic Impulse (EMP).** They are used to paralyze all the electronic equipment within the range.

Why in News?

- A group of researchers in the U.S. have created a material **composed of carbon, hydrogen and sulphur that is superconducting at 15 degrees Celsius.** That is, it shows zero resistance to the flow of electricity through it.
- That's a new record for superconductivity, a phenomenon **usually associated with very cold temperatures.**
- Common superconductors work at atmospheric pressures, but only if they are kept very cold. Even the most sophisticated ones — copper oxide-based ceramic materials — work only below 133 kelvin (-140 °C).
- Superconductors that work at room temperature could have a big technological impact, for example in electronics that run faster without overheating.
- The only limitation is that it needs ultrahigh pressure of about 2 million atmospheres to achieve this transition, putting off any thoughts of application to the future.

2) Asteroid Bennu

What is an Asteroid?

- Asteroids are small, rocky objects that orbit the Sun. Although asteroids orbit the Sun like planets, they are much smaller than planets. They are also called minor planets.

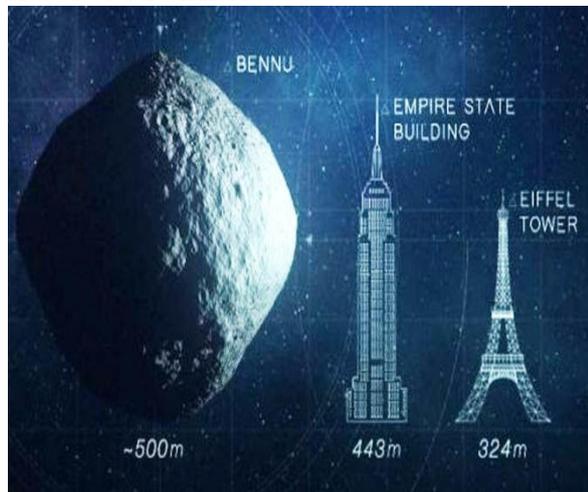
3 types of Asteroids

- There are three types of Asteroids. First are the kind which are found in the **main asteroid belt between Mars and Jupiter**, which is estimated to

contain somewhere between 1.1-1.9 million asteroids.

- Second are called the **trojans**, which are asteroids that **share an orbit with a larger planet**. NASA reports the presence of Jupiter, Neptune and Mars trojans. In 2011, they reported an Earth trojan as well.
- Third are **Near-Earth Asteroids (NEA)**, which **have orbits that pass close by the Earth**. Those that cross the Earth's orbit are called **Earth-crossers**. More than 10,000 such asteroids are known, out of which over 1,400 are classified as **potentially hazardous asteroids (PHAs)**.

Asteroid Bennu



- It was discovered in 1999 by **NASA** and has been named after an Egyptian deity.
- It is about 200 million miles away from the Earth.
- This asteroid is a **B-type asteroid**, implying that it contains **significant amounts of carbon** and various other minerals. It reflects only 4% of light which falls on it.

OSIRIS-REx

- It is **NASA's mission to extract material from the Bennu asteroid**.
- The mission is essentially a seven-year-long voyage and will conclude when at least 60 grams of samples are delivered back to the Earth.
- The spacecraft contains **five instruments** meant to explore Bennu

including cameras, a spectrometer and a laser altimeter.

- The mission was launched in **2016**, it reached its target in **2018** and since then, the spacecraft has been trying to match the velocity of the asteroid using small rocket thrusters to get it attached to the asteroid.

Why in News?

- On October 20th 2020, the OSIRIS-REx spacecraft made contact with the Bennu asteroid. It used Touch-And-Go Sample Acquisition Mechanism (TAGSAM) to tag with the asteroid.
- The spacecraft will collect samples, detach with the asteroid in 2021 and will return back to the earth in **2023**.

Why do scientists want to study the Bennu asteroid?

- The study will give information about the **formation and history of planets and the sun** since asteroids were formed at the same time.
- The Bennu asteroid hasn't undergone drastic changes since its formation over billions of years ago and therefore it **contains chemicals and rocks dating back to the birth of the solar system**.
- Tracking these asteroids may also be useful as it **can be hazardous in the future**. There is a slight possibility that Bennu, which is classified as a Near Earth Object (NEO), might strike the Earth in the next century, between the years 2175 and 2199

3) Water on the Moon

Earth's Moon

- The Moon is Earth's only natural satellite and the fifth largest moon in the solar system.
- The Moon's presence **helps stabilize our planet's wobble** (movement side to side), which **helps stabilize our climate**.
- The Moon's distance from Earth is about 240,000 miles (385,000km).

- The Moon has a very thin atmosphere called an exosphere. It is not breathable.
- The Moon's entire surface is cratered and pitted from impacts.
- The Earth and Moon are **tidally-locked**. Their rotations are so in sync we only see one side of the Moon all the time. Humans didn't see the lunar far side until a Soviet spacecraft flew past in 1959.
- So the moon has two sides to it, one the **sunlit surface** and other the **dark surface**.

What is in the news?

- Two separate studies conducted recently predicted that there are potentially huge implications for sustaining humans on the Moon in the future.
- One study reports the **detection of water on the Moon's sunlit surface for the first time**. The other estimates that the Moon's dark, shadowy regions, which potentially contain ice, are more widespread.

Why is the discovery of water important?

- Water is vital for human establishments. Water is not only important for **human sustenance** but also to **generate rocket fuel**.
- NASA's **Artemis programme** plans to send the first woman and the next man to the Moon in 2024, and hopes to establish a "sustainable human presence" there by the end of the decade. If space explorers can use the Moon's resources, it means they need to carry less water from Earth.

How water could have formed on the moon?

- **Space rocks** carrying small amounts of water could have bombarded the Moon.
- Or the Sun's solar wind could have carried hydrogen, which then reacted with minerals in the lunar soil to create

hydroxyl, which later transformed into water.

What was known about water on the Moon?

- It was **Chandrayan I of ISRO** which first detected the water molecules on the moon. But it was not confirmed whether it was H₂O molecules or hydroxyl (OH) molecules.
- Recently, the **SOFIA telescope** with its latest technology confirmed the H₂O molecules in the brighter side.
- Scientists were amazed how the water molecules survive the sunlight and lack of thick atmosphere on the moon. It has been predicted that water might have got trapped into tiny bead-like structures that were created in the soil by impacts from space rocks. Or water might have got hidden in lunar soil.

Way forward

- SOFIA is about to look for water in additional sunlit locations to learn more about how the water is produced, stored, and moved across the Moon.
- Meanwhile, **NASA's Volatiles Investigating Polar Exploration Rover (VIPER)** will carry out a mission to create the first water resource maps of the Moon.

Related Information

SOFIA telescope



- Stratospheric Observatory for Infrared Astronomy, (SOFIA) is a Boeing 747SP aircraft modified to carry a 2.7-meter (106-inch) reflecting telescope.
- It is a joint project of **NASA and the German Aerospace Center** to construct and maintain an airborne observatory.

- It flies at around 45,000 ft to put it above 99 percent of Earth's infrared-blocking atmosphere, allowing astronomers to **study the solar system and beyond in ways that are not possible with ground-based telescopes.**
- It is designed to observe the **infrared universe.**

Chandrayan I

- Chandrayaan-1, **India's first mission to the Moon**, was launched successfully on October 22, 2008 using the Polar Satellite Launch Vehicle (PSLV-C11).
- The **primary science objective** of the mission was to prepare a three dimensional atlas of both near and far side of the Moon and to conduct chemical and mineralogical mapping of the entire lunar surface with high spatial resolution.
- The satellite made more than 3400 orbits around the moon and the mission was concluded when the communication with the spacecraft was lost on **August 29, 2009.**

Significant results

- The inference of subsurface water-ice deposits in the base of craters in permanent sun shadow, detection of possible existence of water molecules in the lunar environment, validation of Lunar Magma Ocean hypothesis, detection of reflection of 20% of solar wind protons, detection of presence of Mg, Al, Si, Ca on the lunar surface and three dimensional conceptualization of many lunar craters of interest are the scientific results from Chandrayaan-1.

VIPER Mission

- NASA's Volatiles Investigating Polar Exploration Rover, or VIPER, is a mobile robot that will go to the **South Pole of the Moon** to get a close-up view of the location and concentration of water ice that could eventually be harvested to sustain human

exploration on the Moon, Mars — and beyond.

- VIPER is planned for delivery to the lunar surface in late 2023 under NASA's Commercial Lunar Payload Services (CLPS) program.

4) India and HIV

HIV & AIDS

- The **human immunodeficiency virus (HIV)** is a virus that targets the immune system and weakens people's defense against many infections and some types of cancer. As the virus destroys and impairs the function of immune cells, infected individuals gradually become immunodeficient.
- The most advanced stage of HIV infection is **acquired immunodeficiency syndrome (AIDS)**, which can take many years to develop if not treated, depending on the individual. AIDS is defined by the development of certain cancers, infections or other severe long term clinical manifestations.
- It is spread by contact with certain **bodily fluids of a person with HIV**, most commonly during unprotected sex, or through **sharing injection drug equipment.**
- HIV can also be transmitted from a **mother to her child** during pregnancy and delivery.

Treatment

- There is **no cure for HIV infection.**
- The most effective treatment for HIV is **antiretroviral therapy (ART)**. This is a combination of several medicines that aims to control the amount of virus in the body. Antiretroviral medicines slow the rate at which the virus grows.

90-90-90 targets

- In 2016, the **United Nations General Assembly's Political Declaration on Ending AIDS** committed countries to the 90-90-90 targets.

- The idea is that by 2020, 90% of people who are HIV infected will be **diagnosed**, 90% of people who are diagnosed will be on **antiretroviral treatment** and 90% of those who receive antiretroviral will be **virally suppressed**.
- Viral suppression is when a person's viral load – or the amount of virus in an HIV-positive person's blood – is reduced to an undetectable level.

Progress

- Globally, there have been remarkable gains across the HIV testing and treatment cascade. At the end of 2019, 81% of people living with HIV knew their HIV status, and more than two thirds (67%) were on antiretroviral therapy, equal to an estimated 25.4 million of the 38.0 million people living with HIV—a number that has more than tripled since 2010.
- As a result of concerted international efforts to respond to HIV, coverage of services has been steadily increasing.
- At the end of 2019, an estimated 81% of people living with HIV knew their status. 67% were receiving antiretroviral therapy (ART) and 59% had achieved suppression of the HIV virus with no risk of infecting others.

Why in News?

- According to the newly released 2019 HIV estimates by the **National AIDS Control Organization (NACO)**, there has been a 66.1% reduction in new HIV infections among children and a 65.3% reduction in AIDS-related deaths in India over a nine-year period (2010-2019).
 - NACO is a division of the **Ministry of Health and Family Welfare** that provides leadership to HIV/AIDS control programmes in India through 35 HIV/AIDS Prevention and Control Societies.
- The number of pregnant women living with HIV has reduced from 31,000 in 2010 to 20,000 in 2019.

- Overall, antenatal coverage has expanded, and HIV testing has increased over time and within target range. Treatment coverage has also expanded.

Major Reasons

- These progress were achieved through education and communication programmes; increased access to HIV services with innovative delivery mechanisms for HIV testing (community-based testing, partner testing or index testing); counselling and care; and treatment and follow-ups.

5) Thalassemia Bal Sewa Yojna

What is Thalassemia?

- Thalassemia is an **inherited** (i.e., passed from parents to children through genes) **blood disorder** caused when the **body doesn't make enough of a protein called hemoglobin**, an important part of red blood cells.
- When there isn't enough hemoglobin, the body's red blood cells don't function properly and they last shorter periods of time, so there are fewer healthy red blood cells traveling in the bloodstream.
- Red blood cells carry oxygen to all the cells of the body. When there are not enough healthy red blood cells, there is also not enough oxygen delivered to all the other cells of the body, which may cause a person to feel tired, weak or short of breath. This is a condition called **anemia**.
- People with thalassemia may have mild or severe anemia. Severe anemia can damage organs and lead to death.

Why in News?

- **Union Ministry of Health and Family Welfare** has launched the second phase of "Thalassemia Bal Sewa Yojana" for the underprivileged Thalassemic patients.

About the Yojana

- Launched in 2017, this scheme is a part of **Coal India Corporate Social Responsibility (CSR)** funded Hematopoietic Stem Cell Transplantation (HSCT) program which aims to provide a one-time cure opportunity for Haemoglobinopathies like Thalassaemia and **Sickle Cell Disease** for patients who have a matched family donor.
 - *HSCT refers to the transplantation of stem cells from various sources (bone marrow, growth factor-stimulated peripheral blood, and umbilical cord blood) for the treatment of malignant and nonmalignant hematologic, autoimmune, and genetic diseases.*
- The CSR initiative was targeted to provide financial assistance to a total of 200 patients by providing a package cost not exceeding Rs. 10 lakhs per HSCT.

Related Information

Sickle cell disease

- Sickle cell disease is a group of inherited red blood cell disorders that affects hemoglobin, the protein that carries oxygen through the body. Normally, red blood cells are disc shaped and flexible to move easily through the blood vessels.
- Among patients having sickle cell disease, red blood cells are crescent or “sickle” shaped. These cells do not bend and move easily and can block blood flow to the rest of the body.
- The blocked blood flow through the body can lead to serious problems, including stroke, eye problems, infections and episodes of pain, called pain crises.

About CSR

- Corporate Social Responsibility (CSR) is a management concept through which a company achieves a balance of economic, environmental and social imperatives (“**Triple-Bottom-Line-Approach**”).

- India is the first country in the world to make CSR **mandatory**, following an amendment to The Company Act, 2013 in 2014.
- Any company that has a net worth of at least Rs 500 crore, a turnover of Rs 1,000 crore or a net profit of Rs 5 crore is obliged to spend **2% of its average profits** over the last three years on CSR.
- Businesses can invest their profits in areas such as education, poverty, gender equality, and hunger as part of their CSR compliance, as regulated by the law.

6) Antimicrobial resistance

What is AMR?

- Antimicrobial Resistance (AMR) occurs when **bacteria, viruses, fungi and parasites** change over time and **no longer respond to medicines** making infections harder to treat and increasing the risk of disease spread, severe illness and death.
- As a result of drug resistance, antibiotics and other antimicrobial medicines become ineffective and infections become increasingly difficult or impossible to treat.
- AMR is a global health and development threat. It requires urgent multisectoral action in order to achieve the Sustainable Development Goals (SDGs).
- **WHO** has declared that **AMR is one of the top 10 global public health threats facing humanity**.
- Microorganisms that have antimicrobial resistance are sometimes called “**superbugs**”.

Why is antimicrobial resistance a global concern?

- The emergence and spread of drug-resistant pathogens that have acquired new resistance mechanisms, leading to antimicrobial resistance, continues to **threaten our ability to treat common infections**.

- Especially alarming is the rapid global spread of multi- and pan-resistant bacteria (“superbugs”) that cause infections that are not treatable with existing antimicrobial medicines such as antibiotics.
- The cost of AMR to national economies and their health systems is significant as it affects productivity of patients or their caretakers through prolonged hospital stays and the need for more expensive and intensive care.

What accelerates the emergence and spread of antimicrobial resistance?

- AMR occurs **naturally** over time, usually through genetic changes.
- Antimicrobial resistant organisms are found in people, animals, food, plants and the environment (in water, soil and air). They can **spread from person to person or between people and animals**, including from food of animal origin.

Other causes

- The main drivers of antimicrobial resistance include:
 - Misuse and overuse of antimicrobials;
 - Overuse of antibiotics in livestock and fish farming;
 - Lack of access to clean water, sanitation and hygiene (wash) for both humans and animals;
 - Poor infection and disease prevention and control in health-care facilities and farms;
 - Poor access to quality, affordable medicines, vaccines and diagnostics;
 - Lack of awareness and knowledge; and
 - Lack of enforcement of legislation.

Fight against AMR

Need for coordinated action

- AMR is a complex problem that requires a **united multisectoral approach**.
- The **One Health approach** brings together multiple sectors and

stakeholders engaged in human, terrestrial and aquatic animal and plant health, food and feed production and the environment to communicate and work together in the design and implementation of programmes, policies, legislation and research to attain better public health outcomes.

- **Greater innovation and investment** is required in operational research, and in research and development of new antimicrobial medicines, vaccines, and diagnostic tools.

Global Action Plan on Antimicrobial Resistance (GAP)

- Globally, countries committed to the framework set out in the Global Action Plan (GAP) 2015 on AMR during the 2015 World Health Assembly of WHO and committed to the development and implementation of multisectoral national action plans.

World Antimicrobial Awareness Week (WAAW)

- Held annually since 2015 (18 to 24 November), WAAW is a global campaign that aims to raise awareness of antimicrobial resistance worldwide and encourage best practices among the general public, health workers and policy makers to slow the development and spread of drug-resistant infections.

The Global Antimicrobial Resistance and Use Surveillance System (GLASS)

- **WHO** launched the GLASS in 2015 to foster standardized Antimicrobial resistance surveillance globally. Currently GLASS collects and reports data on Antimicrobial resistance rates aggregated at national level.

AWaRe tool

- In 2019, the WHO launched a new online tool aimed at guiding policy-makers and health workers to use antibiotics safely and more effectively.
- The tool, known as ‘AWaRe’, classifies antibiotics into three groups:

- **Access** — antibiotics used to treat the most common and serious infections
- **Watch** — antibiotics available at all times in the healthcare system
- **Reserve** — antibiotics to be used sparingly or preserved and used only as a last resort

NAP-AMR

- The Government of India adopted the **National Action Plan on AMR (NAP-AMR)** in 2017, with the Ministry of Health and Family Welfare (MoHFW) as the nodal ministry.
- The overarching goal of NAP-AMR is to effectively combat antimicrobial resistance in India, and contribute towards the global efforts to tackle this public health threat.

Red Line Campaign

- The **Union Ministry of Health and Family Welfare** has made it mandatory to display a 5mm-thick red vertical band (line) on packaging of prescription-only drugs (which compulsorily require Doctors' Prescription).
- It aims at sensitising people and making them cautious while buying these Antibiotic medicines that are widely sold without prescriptions.

Why in News?

- Health experts at the All India Institute of Medical Science (AIIMS) warned that the increased use of antibiotics and the widespread use of hand sanitisers and antimicrobial soaps can worsen the situation of antimicrobial resistance.

Reports and Indices

1) World's Women: Trends and Statistics Report

About UN DESA

- The UN Department of Economic and Social Affairs (UN DESA) works closely with governments and stakeholders to help countries around the world meet their economic, social and environmental goals.
- The Department is involved in policy-making bodies, facilitating major UN conferences, projecting trends in demography, publishing top quality economic analysis, or helping countries develop capacity.

Why in News?

- The United Nations economic and social affairs department (DESA) has released World's Women: Trends and Statistics Report 2020.

About the report

- The World's Women: Trends and Statistics Report provides the global status of women 25 years since the world adopted the **Beijing Declaration and Platform for Action**.
- It presented the **global state of gender equality in six critical areas**:
 - Population and families
 - Health
 - Education
 - Economic empowerment and asset ownership
 - Power and decision-making and
 - Violence against women and the girl child as well as the impact of COVID-19.

Highlights of the report

Impact of COVID 19 on women

- The report showed how the **novel coronavirus disease (COVID-19)** pandemic impacted the lives of women and **deepened underlying inequalities** in societies around the world.
- **Loss of access to modern contraception** resulted in an

additional seven million unintended pregnancies

- **Gender-based violence** increased worldwide, including harmful practices like child marriage and female genital mutilation (FGM), sexual exploitation, intimate partner violence and domestic family violence

Gender gap in Labour market

- In India, the ratio of **female-to-male labour force participation rate was 29.80** in 2019 as against the desired ratio of 50 per cent.
- In Southern Asia, Northern Africa and Western Asia, women's participation in the labour market was particularly low — below 30 per cent.

Causes

- **Family responsibilities and unequal distribution of unpaid domestic and care work** were among primary reasons for women not joining the labour force.
- Their participation depended on their liabilities and responsibilities in their household.
- On an average day, women globally spent about three times (4.2 hours) as many hours on unpaid domestic and care work as men (1.7 hours).

Related Information

The Beijing Declaration and the Platform for Action

- The **United Nations** has organized **four world conferences** on women. These took place in Mexico City in 1975, Copenhagen in 1980, Nairobi in 1985 and **Beijing in 1995**.
- The 1995 Fourth World Conference on Women in Beijing marked a significant turning point for the global agenda for gender equality.
- The Beijing Declaration and the Platform for Action, adopted unanimously by **more than 180 countries**, was an agenda for women's empowerment and is now considered

the key **global policy document on gender equality**.

- It set strategic objectives and actions for the advancement of women and the achievement of **gender equality in 12 critical areas** of concern:
 1. Women and poverty
 2. Education and training of women
 3. Women and health
 4. Violence against women
 5. Women and armed conflict
 6. Women and the economy
 7. Women in power and decision-making
 8. Institutional mechanism for the advancement of women
 9. Human rights of women
 10. Women and the media
 11. Women and the environment
 12. The girl-child

2) World Energy Outlook 2020

About the report

- The World Energy Outlook is the flagship publication of **International Energy Agency (IEA)**.
- **Published every year**, the outlook provides critical analysis and insights on trends in energy demand and supply, and what they mean for energy security, environmental protection and economic development.

Why in News?

- The International Energy Agency has released the World Energy Outlook 2020.

Key finding of the report

Impact of COVID-19

- The COVID-19 pandemic has caused more disruption to the energy sector than any other event in recent history. Global energy demand is set to drop by 5% in 2020.

Demand for renewable energy

- Renewables will meet 80 per cent of global electricity demand growth over the next decade, with solar being the main source of growth, followed by onshore and offshore wind.

- Coal's share in the 2040 energy mix falls below 20% for the first time since the Industrial Revolution.

Global emissions

- Global emissions are set to bounce back more slowly than after the financial crisis of 2008-2009, but the world is still a long way from a sustainable recovery.

Related Information

International Energy Agency

- The International Energy Agency is an autonomous intergovernmental organization established in the framework of the **Organisation for Economic Co-operation and Development (OECD)** in 1974.
- Created in 1974, the IEA works to ensure reliable, affordable and clean energy for its member countries and beyond. Its main areas of focus are energy security, economic development, environmental awareness and engagement worldwide.
- The IEA is made up of **30 member countries**. Before becoming a member country of the IEA, a candidate country must meet several criteria.
 - For eg: It must have crude oil or product reserves equivalent to 90 days of the previous year's net imports.
 - It must have in place a demand restraint program to reduce national oil consumption by up to 10 per cent.
- **India became an Associate Member** in 2017.
- IEA is headquartered in Paris, France.

3) Electricity Access & Utility Benchmarking Report

What's in the News?

- **NITI Aayog and Ministry of Power** in partnership with other organisations have launched the 'Electricity Access in India and Benchmarking Distribution Utilities' report.

About the Report

- The report assesses 25 distribution utilities and is based on a primary survey conducted across 10 states.
- The survey represents about **65% of the total rural population of India** and with a sample size of more than 25,000, including households, commercial enterprises and institutions.
- It is aimed at capturing insights from **both the demand** (electricity customers) as well as **supply-side** (electricity distribution utilities).

Key findings of the report

- **92% of customers reported the overall availability of electricity infrastructure within 50 metres of their premises;** however, not all have connections, the primary reason being the distance of households from the nearest pole.
- Overall, **87% of the surveyed customers have access to grid-based electricity.** The remaining **13% either use non-grid sources or don't use any electricity at all.**
- The hours of supply have improved significantly across the customer categories to nearly **17 hours per day.**
- Nearly 85% of customers reported to have a metered electricity connection.
- **Access to electricity is observed in 83% of household customers.**
- A **satisfaction index** was created to assess the overall satisfaction level of customers with utility services. The study suggested that a total of 66% of those surveyed were satisfied with the overall services from their utility.

Related Information

NITI Aayog

- The National Institution for Transforming India, also called NITI Aayog, was formed via a **resolution of the Union Cabinet on January 1, 2015.**
- NITI Aayog is the **premier policy 'Think Tank' of the Government of**

India, providing both directional and policy inputs.

- While designing strategic and long term policies and programmes for the Government of India, NITI Aayog also provides relevant technical advice to the Centre and States.

Objectives

- To **foster cooperative federalism** through structured support initiatives and mechanisms with the States on a continuous basis, recognizing that strong States make a strong nation.
- To develop mechanisms to formulate credible plans at the village level and aggregate these progressively at higher levels of government.
- To ensure, in areas that are specifically referred to it, that the interests of national security are incorporated in economic strategy and policy.
- To pay special attention to the sections of our society that may be at risk of not benefitting adequately from economic progress.
- To provide advice and encourage partnerships between key stakeholders and national and international like-minded Think Tanks, as well as educational and policy research institutions.
- To create a knowledge, innovation and entrepreneurial support system through a collaborative community of national and international experts, practitioners and other partners.

Important reports released by Niti Aayog

- **Healthy States, Progressive India Report**
- **Composite Water Management Index**
- **SDG India Index**

4) The Human Cost of Disasters Report

UN Office for Disaster Risk Reduction

- The UN Office for Disaster Risk Reduction (UNDRR) is the United

Nations system's focal point for disaster risk reduction and the **custodian of the Sendai Framework**.

- Established in 1999, UNDRR brings governments, partners and communities together to reduce disaster risk and losses to ensure a safer, more sustainable future.
- It is headquartered in Geneva, Switzerland.

Why in the news?

- The UNDRR has released a report titled **'The Human Cost of Disasters 2000-2019'**.

Highlights of the Report

- According to the report, 7,348 major disaster events had occurred between 2000 and 2019, claiming 1.23 lives, affecting 4.2 billion people and costing the global economy some \$2.97 trillion. The figure far outstrips the 4,212 major natural disasters recorded between 1980 and 1999.
- The sharp increase was **largely attributable to a rise in climate-related disasters**, including extreme weather events like floods, drought and storms.
- The report **doesn't include** biological hazards and disease-related disasters like the coronavirus pandemic.
- A **rise in climate-related disasters**, including extreme weather events like floods, drought and storms has been seen. **Extreme heat** has become a major cause for deaths.
- There has also been a **rise in geo-physical events** including earthquakes and tsunamis which have killed more people than any of the other natural hazards under review in this report.

Related Information

Sendai Framework for Disaster Risk Reduction 2015-2030

- The Sendai Framework is a **15-year, voluntary, non-binding agreement** which recognizes that the State has the primary role to reduce disaster risk, but that responsibility should be

shared with other stakeholders including local governments, the private sector, the scientific community and NGOs.

- It lists **priority areas for action** such as:
 - 1) Understanding disaster risk,
 - 2) Strengthening disaster risk governance to manage disaster risk,
 - 3) Investing in disaster risk reduction for resilience and
 - 4) Enhancing disaster preparedness for effective response and to "build back better" in recovery, rehabilitation and reconstruction.
- It aims to achieve the substantial reduction of disaster risk and losses in lives, livelihoods and health and in the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries over the next 15 years (2015-2030).
- The Framework was adopted at the **Third UN World Conference on Disaster Risk Reduction** in Sendai, Japan, on March 18, 2015.

5) Poverty and Shared Prosperity Report

About the Report

- It is a **biennial** report released by the **World Bank**.
- It provides a global audience with the latest and most accurate estimates on trends in global poverty and shared prosperity.

Why in News?

- The World Bank has released its Poverty and Shared Prosperity 2020 report.

Highlights of the Report

- Global extreme poverty is expected to rise for the first time in 20 years because of the disruption caused by COVID-19, exacerbating the impact of conflict and climate change, which were already slowing down poverty reduction.

- The pandemic and global recession may cause over **1.4% of the world's population to fall into extreme poverty**.
- Many of the newly poor individuals will be from countries that already have high poverty rates while many in middle income countries (MICs) will slip below the poverty line.
- **Sub-Saharan Africa**, with 27-40 million new poor, and **South Asia**, with 49-57 million new poor, will be badly hit as per the Bank's projections.
- In order to reverse this serious setback to development progress and poverty reduction, countries will need to prepare for a different economy post-COVID, by allowing capital, labour, skills, and innovation to move into new businesses and sectors.

6) Global Hunger index

What is it?

- The Global Hunger Index is an annual score ranking countries of the world on hunger levels.
- The Index is a peer-reviewed report released annually by **Concern Worldwide** (a humanitarian agency) and **NGO Welthungerhilfe**.
- It is based on 4 indicators:
 - **Undernourishment**
 - **Child wasting** - the share of children under the age of five who have low weight for their height, reflecting acute undernutrition
 - **Child stunting** - children under the age of five who have low height for their age, reflecting chronic undernutrition
 - **Child mortality** - the mortality rate of children under the age of five.

Why in News?

- The Global Hunger Index 2020 was released recently.

Highlights of the Report

- Overall, **India ranks 94 out of 107 countries** in the Index, lower than neighbours such as Bangladesh (75)

and Pakistan (88). 2020 scores reflect data from 2015-19.

- According to the report, with a score of 27.2, India has a level of hunger that is "serious". India's rank was 102 out of 117 countries last year.
- India has the **highest prevalence of wasted children under five years in the world**, which reflects acute under nutrition.
- The situation has worsened in the **2015-19 period**, when the prevalence of child wasting was **17.3%**, in comparison to 2010-14, when it was 15.1%.
- Although it is still in the poorest category, however, **child stunting** has actually **improved** significantly, from **54% in 2000 to less than 35% now**.
- Child wasting, on the other hand, has not improved in the last two decades, and is rather worse than it was decades ago.
- India has **improved in both child mortality rates**, which are now at 3.7%, and in terms of **undernourishment**, with about 14% of the total population which gets an insufficient caloric intake.
- In the region of south, east and south-eastern Asia, the only countries which fare worse than India are Timor-Leste, Afghanistan and North Korea.
- **South Asia** has the highest child wasting rate for any region, and **India** is the worst performer.

Pandemic effect

- Globally, nearly 690 million people are undernourished, according to the report, which warns that the COVID-19 pandemic could have affected the progress made on reducing hunger and poverty.
- The report noted that the world is not on track to achieve the **Goal 2 of Sustainable Development Goal** (*to achieve Zero Hunger by 2030*).

Way forward

- India's national policy should call for a **radical transformation** in the delivery of adequate nutrition especially to women and children, and pay adequate attention to achieving **diet diversity through the PDS**.
- **Strengthening the PDS**, with a focus on women's health, would lead to healthier pregnancies, and stronger **supplemental nutrition under the ICDS scheme** would give children a better chance at all-round development.
- Necessary measures to be taken to bring the **true benefits of the National Food Security Act** to the unreached, not merely as hunger mitigation through cereals, but as nourishment through a **diverse diet that includes fat, protein and micronutrients**.
- The Right to Food would be meaningless if it leaves a large section of Indians hungry, stunted and wasted.

7) ASER Survey

What's in the news?

- **Non-Governmental Organization (NGO) Pratham** has released its latest Annual State of Education Report (ASER) survey conducted in September, the sixth month of school closures due to COVID-19 across the country.
- ASER is a **nationwide survey of rural education and learning outcomes** in terms of reading and arithmetic skills that has been conducted by the NGO Pratham for the last 15 years.
- It is the largest citizen-led survey in India.
- This year, the survey was conducted via phone calls, reaching 52,227 rural households with school age children in 30 States and Union Territories.

Who is surveyed?

- Unlike most other large-scale learning assessments, ASER is a **household-**

based rather than school-based survey.

- This design enables all children to be included – those who have never been to school or have dropped out, as well as those who are in government schools, private schools, religious schools or anywhere else.

Highlights of the survey

Shift toward government schools

- The ASER survey provides a glimpse into the levels of learning loss that students in rural India are suffering, with varying levels of access to technology, school and family resources resulting in a digital divide in education.
- ASER 2020 shows that **5.5 per cent children are not currently enrolled for the 2020-21 school year**, up from 4 per cent in 2018. This difference is the sharpest among the youngest children (ages 6 to 10), possibly because they have not yet secured admission to school.
- Enrolment patterns also show a **slight shift toward government schools**, with private schools seeing a drop in enrolment in all age groups.

Smartphone penetration

- Among enrolled children, **more than 60% live in families with at least one smartphone**. This proportion has increased enormously in the last two years, from 36.5% to 61.8% among enrolled children.
- Despite the high smartphone penetration, only about one-third of them reported getting some form of learning material from their teachers in the week preceding the survey.

Family support

- Yet, most children (70.2 per cent) said they did some form of learning activity that week through material shared by tutors or family members themselves.
- Almost 75 per cent of children said they received some form of **learning support from family members**, with

older siblings playing a key role. ASER recommended that schools find ways to build on this home support going forward.

- This kind of support was evident even among children whose neither parent has studied beyond primary school, though children with more educated parents received more support.

Way forward

- **Expanding availability of textbooks:** Expanding availability of textbooks to all, including those who dropped out or are waiting to be formally admitted, will help parents and siblings aid learning.
- **Bridging digital divide:** Bridging the divide on educational aids, now including smartphones, will enable

transmission of learning materials, and personal tutorial sessions.

- **Promote observational learning:** The education system could creatively use opportunities during the current year to broaden learning particularly for lower classes where observational learning creates a strong foundation.
- **Replace traditional methods of learning:** Educational video, which has helped thousands, can advance learning even beyond the pandemic, using talented teacher-communicators.
- For instance, states such as Tamil Nadu and Kerala have already hosted curriculum-based video lessons on the Internet, after beaming them on television.

Polity

1) Right To Education

About RTE

- The **86th Constitution Amendment Act** inserted **Article 21A** in our 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:
 1. Right of children to **free and compulsory education** till completion of elementary education in a neighbourhood school.
 2. 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.
 3. It makes provisions for a non-admitted child to be admitted to an age appropriate class.
 4. 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.
 5. It lays down the norms and standards relating inter alia to **Pupil Teacher Ratios (PTRs), buildings and infrastructure, school-working days, teacher-working hours.**
- 6. 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.
- 7. It provides for appointment of appropriately trained teachers, i.e. teachers with the requisite entry and academic qualifications.
- 8. 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.
- 9. 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.
- 10. 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.**
- 11. 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,
- 12. 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.

Why in News?

- The Delhi Commission for Protection of Child Rights (DCPCR) summoned 45 private schools for allegedly denying books to students of the Economically Weaker Section (EWS) category.

2) Labour Codes

What's in the news?

- President Ram Nath Kovind gave his assent to the three labour law codes passed by Parliament that complete the government's consolidation of 29 labour laws into four codes. The three Bills are the Industrial Relations Code, 2020, the Occupational Safety, Health and Working Conditions Code, 2020 and the Social Security Code, 2020.
- The first of the four codes- Code on Wages Bill was passed in 2019.
- It should be noted the **labour falls under the concurrent list** of the Constitution. Therefore, both Parliament and state legislatures can make laws regulating labour.

Code on Wages

- The Code replaces the following four laws:
 - 1) The Payment of Wages Act, 1936
 - 2) The Minimum Wages Act, 1948
 - 3) The Payment of Bonus Act, 1965
 - 4) The Equal Remuneration Act, 1976
- **Coverage:** The Code will apply to all employees to enforce minimum wage among **both formal and informal sector workers**.
- **Floor wage:** According to the Code, the **central government will fix a floor wage**, taking into account the living standards of workers. Further, it may set different floor wages for different geographical areas.
- The minimum wages decided by the central or state governments **must be higher than the floor wage**. In case the existing minimum wages fixed by the central or state governments are higher than the floor wage, they cannot reduce the minimum wages.

- **Fixing the minimum wage:** The Code prohibits employers from paying wages less than the minimum wages. Minimum wages will be notified by the central or state governments. The minimum wages will be revised and reviewed by the central or state governments at an interval of **not more than five years**.
- **Overtime:** The central or state government may fix the number of hours that constitute a normal working day. In case employees work in excess of a normal working day, they will be entitled to overtime wage, which must be **at least twice the normal rate of wages**.
- **Deductions:** Under the Code, an employee's wages may be deducted on certain grounds including: (i) fines, (ii) absence from duty, (iii) accommodation given by the employer, or (iv) Recovery of advances given to the employee, among others. **These deductions should not exceed 50% of the employee's total wage**.
- **Gender discrimination:** The Code prohibits gender discrimination in matters related to wages and recruitment of employees for the same work or work of similar nature. Work of similar nature is defined as work for which the skill, effort, experience, and responsibility required are the same.
- **Advisory boards:** The central and state governments will constitute advisory boards to advise the respective governments on various issues including: (i) fixation of minimum wages, and (ii) increasing employment opportunities for women.

The Code on Social Security, 2020

- It replaces nine laws related to social security, including the Employees' Provident Fund Act, 1952, the Maternity Benefit Act, 1961, and the Unorganised Workers' Social Security Act, 2008. Social security refers to **measures to ensure access to health**

care and provision of income security to workers.

- **Changes in definitions:** The Code changes the definitions of certain terms. These include: (i) expanding the definition of **'employees'** to include workers employed through contractors, (ii) expanding the definition of **"inter-state migrant workers"** to include self-employed workers from another state, (iii) expanding the definition of **"platform worker"** to additional categories of services or activities as may be notified by the government, (iv) expanding the definition of **audio-visual productions** to include films, web-based serials, talk shows, reality shows and sports shows, and (v) **exempting construction works** from the ambit of "building or other construction work" if the total cost of construction work exceeds Rs 50 lakhs (and if they employ more than a certain notified number of workers).
- The central government will set up a **social security fund for unorganised workers, gig workers and platform workers**. Further, state governments will also set up and administer separate social security funds for unorganised workers.
 - **Gig workers** refer to workers outside of the traditional employer-employee relationship (e.g., freelancers). **Platform workers** are workers who access other organisations or individuals using online platforms and earn money by providing them with specific services. **Unorganised workers** include home-based and self-employed workers.
- The Code makes provisions for **registration of all three categories of workers** - unorganised workers, gig workers and platform workers.
- **National Social Security for gig workers and platform workers:** The

Code provides for the establishment of the **National Social Security Board** and various state-level boards for welfare of unorganised sector workers, gig workers and platform workers and can recommend and monitor schemes for them.

- **Term of eligibility for gratuity:** Gratuity is payable on the termination of employment, if the employee has been in the organisation for **at least five years**. The Code extends gratuity entitlement to **fixed term employees** as well. Such employees would be paid gratuity based on the term of their employment contracts on a pro-rata basis, even if the contract period is less than 5 years.

The Occupational Safety, Health and Working Conditions Code, 2020

- The Code seeks to regulate health and safety conditions of workers in establishments with **20 workers** for premises where the manufacturing process is carried out using power, and **40 workers** for premises where it is carried out without using power.
- **Contract workers:** The Code will apply to establishments or contractors employing **50 or more workers** (on any day in the last one year).
- Establishments covered by the Code are required to register with registering officers, appointed by the central or state governments.
- Welfare facilities, working conditions and work hours for different types of establishments and workers will be prescribed by the central or state governments through rules.
- It subsumes and replaces 13 labour laws relating to safety, health and working conditions. These laws include: Factories Act, 1948; Mines Act, 1952; Dock Workers Act, 1986; Contract Labour Act, 1970; and Inter-State Migrant Workers Act, 1979.
- The Code sets up **occupational safety boards at the national and state**

level to advise the central and state governments on the standards, rules, and regulations to be framed under the Code.

- The Code **bars civil courts from hearing matters under the Code**. Therefore, the only judicial recourse for a person aggrieved under the Code is to file a writ petition before the relevant High Court.
- **Daily work hour limit:** The Code fixes the maximum daily work hours for workers at **eight hours per day**.
- **Benefits for inter-state migrant workers:** The Code provides for certain benefits for inter-state migrant workers. These include: (i) option to avail the benefits of the public distribution system either in the native state or the state of employment, (ii) availability of benefits available under the building and other construction cess fund in the state of employment, and (iii) insurance and provident fund benefits available to other workers in the same establishment.
- **Database for inter-state migrant workers:** The Code requires the central and state governments to maintain or record the details of inter-state migrant workers in a portal.
- **Social Security Fund:** The Code provides for the establishment of a Social Security Fund for the welfare of unorganised workers. The amount collected from certain penalties under the Code will be credited to the Fund.
- The Code **empowers the state government** to exempt any new factory from the provisions of the Code in order to create more economic activity and employment.

The Industrial Relations Code, 2020

- It seeks to replace three labour laws: (i) The Industrial Disputes Act, 1947, (ii) The Trade Unions Act, 1926, and (iii) The Industrial Employment (Standing Orders) Act, 1946.

- It **defines 'workers'** to include, besides all persons employed in a skilled or unskilled, manual, technical, operational and clerical capacity, supervisory staff drawing up to ₹18,000 a month as salary.
- It introduces **'fixed term employment'**, giving employers the flexibility to hire workers based on requirement through a written contract. Fixed term employees should be treated on a par with permanent workers in terms of hours of work, wages, allowances and other benefits, including statutory benefits such as gratuity.
- **Applicability of standing orders:** All industrial establishments with **300 workers or more** must prepare standing orders on the matters listed in a Schedule to the Code. These matters relate to: (i) classification of workers, (ii) manner of informing workers about work hours, holidays, paydays, and wage rates, (iii) termination of employment, and (iv) grievance redressal mechanisms for workers.
- **Closure, lay-off and retrenchment:** An establishment having at least 300 workers was required to seek prior permission of the government before closure, lay-off, or retrenchment.
 - *Lay-off refers to an employer's inability to continue giving employment to a worker in the face of adverse business conditions. Retrenchment refers to the termination of service of a worker for any reason other than disciplinary action.*
- **Negotiating Union and Council:** If there was more than one registered trade union of workers functioning in an establishment, the trade union having **more than 51% of the workers as members** would be recognised as the sole negotiating union.

- In case no trade union is eligible as sole negotiating union, a negotiating council will be formed consisting of representatives of unions that have at least 20% of the workers as members.
- **Prior notice:** The code has expanded to cover **all industrial establishments** for the required notice period and other conditions for a legal strike. It proposes that no person employed in an industrial establishment shall go on strike without a **60-day notice** and during the pendency of proceedings before a Tribunal or a National Industrial Tribunal and sixty days after the conclusion of such proceedings. The Industrial Disputes Act, 1947, had placed such restrictions on announcing strikes only in respect of public utility services. However, the present Code extends it to all establishments.
- **Disputes relating to termination of individual workers:** Any dispute in relation to discharge, dismissal, retrenchment, or otherwise termination of the services of an individual worker to be an industrial dispute. The worker may apply to the **Industrial Tribunal** for adjudication of the dispute.
- It confers on the **'appropriate Government'**, that is the Centre or the State governments, the power to exempt, with or without conditions, any industrial establishment or class of industrial establishments from all or any of the provisions of the Code, if it is satisfied that adequate provisions exist to fulfil its objectives.

3) Appointment of RBI Governor and Deputy Governors

Central Board of Directors

- The RBI's affairs are governed by a central board of directors.
- Section 8(1)(a) of the Reserve Bank of India Act, 1934, provides that **there shall be one Governor and not more**

than four Deputy Governors to be appointed by the **central government** on the central board of RBI.

Appointments

- The RBI governor is appointed by the **Prime Minister's office** on the recommendation of the Union Finance Minister.
- Deputy Governors are appointed on the basis of the **Appointment Committee of Cabinet (ACC)**-approved guidelines, which stipulate that the search committee constituted for the purpose will recommend the person to be appointed as a Deputy Governor.

Appointment Committee of Cabinet

- It is chaired by the **Prime Minister**.
- It decides all higher-level appointments in the Central Secretariat, Public Enterprises, Banks and Financial Institutions.

Why in News?

- The Appointments Committee of the Cabinet has approved the appointment of M. Rajeshwar Rao to the post of Deputy Governor Reserve Bank of India.
- The RBI needs four Deputy Governors: **two from within the ranks, a commercial banker and an economist to head the monetary policy department.**

4) National Commission for Protection of Child Rights

About NCPCR

- The National Commission for Protection of Child Rights (NCPCR) is a **statutory body** established under the Commission for Protection of Child Rights Act, 2005.
- The commission works under the aegis of the **Ministry of Women and Child development.**
- NCPCR is mandated to function for the protection and promotion of child rights. It is also mandated to monitor the implementation of the Protection

of Children from Sexual Offences (POCSO) Act.

- The Commission may inquire into complaints and take *suo motu* notice of matters relating to-
 - 1) Deprivation and violation of child rights;
 - 2) Non-implementation of laws providing for protection and development of children;
 - 3) Non-compliance of policy decisions, guidelines or instructions aimed at mitigating hardships to and ensuring welfare of the children and to provide relief to such children;

Constitution

- The commission consist of the following members namely:-
 - 1) A **chairperson** who, is a person of eminence and has done a outstanding work for promoting the welfare of children; and
 - 2) **Six members**, out of which at least two are women, are appointed by the Central Government from amongst persons of eminence, ability, integrity, standing and experience in Education; Child health, care or related fields.

Why in News?

- The Supreme Court has issued notice to the National Commission for Protection of Child Rights during the course of the *suo motu* case on conditions of children protection homes across the country in wake of the COVID-19 pandemic.

5) Central Information Commission

About RTI Act, 2005

- Under the Right to Information Act, 2005, **Public Authorities** are required to make disclosures on various aspects of their structure and functioning.
- This includes: (i) disclosure on their organisation, functions, and structure, (ii) powers and duties of its officers and employees, and (iii) financial information.

- The intent of such *suo motu* disclosures is that the public should need minimum recourse through the Act to obtain such information. If such information is not made available, citizens have the right to request for it from the Authorities.
- This may include information in the **form of documents, files, or electronic records** under the control of the Public Authority. The intent behind the enactment of the Act is to **promote transparency and accountability** in the working of Public Authorities.

Who is included in the ambit of 'Public Authorities'?

- The RTI Act defines "public authorities" in **Section 2(h)**.
- A "public authority" means any authority or body or institution of self-government established or constituted
 - By or under the Constitution;
 - By any other law made by Parliament;
 - By any other law made by State Legislature;
 - By notification issued or order made by the appropriate Government, and includes any -
 - Body owned, controlled or substantially financed;
 - Non-Government organization substantially financed, directly or indirectly by funds provided by the appropriate Government.

Section 8 of the RTI

- This provides for **exemption from disclosure of information** that are more valid in reasons
 - Which would affect the sovereignty and integrity of India, the security, strategic, scientific or economic interests of the State;
 - Which has been expressly forbidden to be published by any court of law or tribunal;

- Which would cause a breach of privilege of Parliament or the State Legislature;
- Information including commercial confidence, trade secrets or intellectual property;
- Information received in confidence from foreign government;
- Information which would endanger the life or physical safety of any person; etc.

How is the right to information enforced under the Act?

- The Act has established a **three tier structure** for enforcing the right to information guaranteed under the Act.
- The first request for information goes to the **Central/State Assistant Public Information Officer** and **Central/State Public Information Officer**, designated by the Public Authorities. These Officers are required to provide information to an RTI applicant **within 30 days** of the request.
- Appeals from their decisions go to an **Appellate Authority**.
- Appeals against the order of the Appellate Authority go to the **State Information Commission or the Central Information Commission**. These Information Commissions consist of a **Chief Information Commissioner, and up to 10 Information Commissioners**.

Right to Information (Amendment) Act, 2019

- The Act amended Sections 13 and 16 of the RTI Act, 2005.
- Section 13 of the original Act sets the term of the central Chief Information Commissioner and Information Commissioners at **five years** (or until the **age of 65**, whichever is earlier). The amendment changed that the appointment will be for such term as may be **prescribed by the Central Government**.

- According to the amendment act, the salaries, allowances and other terms of service of the Chief Information Commissioner and Information Commissioners **shall be such as may be prescribed by the Central Government**. Previously it was equivalent to that of the Chief Election Commissioner and Election Commissioners respectively.
- The government said that the amendment was required because the election commission is a Constitutional body while the information commission, formed under the Right to Information Act, is a **statutory one**.

Why in News?

- The Government is set to appoint former Indian Foreign Service officer and Information Commissioner Yashvardhan Kumar Sinha as the new Chief Information Commissioner.

How is the Central Information Commission constituted?

- Under the RTI Act 2005, the **Central Government** shall constitute a body to be known as the Central Information Commission.
- The Central Information Commission shall consist of the **Chief Information Commissioner (CIC)** and such number of **Central Information Commissioners (ICs) not exceeding 10** as may be deemed necessary.

Process of appointment of CIC/IC

- The Chief Information Commissioner and Information Commissioners shall be appointed by the **President** on the recommendation of a committee consisting of:-
 - 1) The Prime Minister, who shall be the Chairperson of the committee;
 - 2) The Leader of Opposition in the Lok Sabha; and
 - 3) A Union Cabinet Minister to be nominated by the Prime Minister.
- **Note:** Where the Leader of Opposition in the House of the People has not been recognized as such, the **Leader of the**

single largest group in opposition of the Government in the House of the People shall be deemed to be the Leader of Opposition.

Eligibility criteria

- Section 12(5) of the RTI Act 2005 provides that the Chief Information Commissioner and Information Commissioners shall be persons of eminence in public life with wide knowledge and experience in law, science and technology, social service, management, journalism, mass media or administration and governance.
- Chief Information Commissioner or an Information Commissioner **shall not be a Member of Parliament or Member of the Legislature of any State or Union Territory** as the case may be, or **hold any other office of profit or connected with any political party or carrying on any business or pursuing any profession.**

6) Unlawful Activities (Prevention) Amendment Act, 2019

UAPA Act, 1967

- The Unlawful Activities (Prevention) Act, 1967 was meant to outlaw and penalize unlawful and terrorist activities, which pose a threat to the integrity and sovereignty of India.
- It also provided wide-ranging powers to the **Central Government** to designate organizations as **terrorist organizations** and also prescribes the penalties for taking part in the activities of such organizations.
- Under UAPA, **both Indian and foreign nationals** can be charged. The Act is applicable to the offenders in the same manner, even if crime is committed on a **foreign land**, outside India.

UAPA Act, 2019

- The Unlawful Activities (Prevention) Amendment Act, 2019 was passed by the Parliament in August 2019. It

amended the Unlawful Activities (Prevention) Act, 1967.

- The 2019 Act **empowers the central government to designate an individual a “terrorist”** if they are found committing, preparing for, promoting, or involved in an act of terror.
- The 1967 UAPA law required an investigating officer to take **prior permission** of the Director General of Police of a state for conducting raids, and seizing properties that are suspected to be linked to terrorist activities.
- The amendment act **removes this requirement** if the investigation is conducted by an officer of the **National Investigation Agency (NIA)**. The investigating officer only requires sanction from the Director General of NIA.
- The 1967 law specifies that only officers of the rank of Deputy Superintendent or Assistant Commissioner of Police of the NIA shall have the power to investigate offences under the UAPA law. The new act allows **NIA officers of Inspector rank to carry out investigations.**

Why in News?

- The Ministry of Home Affairs (MHA) has designated 18 individuals, all Pakistan based, as “terrorists” under the UAPA Act, 2019.

Related Information

About NIA

- The National Investigation Agency (NIA) is a **statutory body** constituted under the **National Investigation Agency Act, 2008**.
- It was created in 2008 post Mumbai terror attacks during the same year.
- It is a central agency to investigate and prosecute offences:
 - Affecting the sovereignty, security and integrity of India, security of State, friendly relations with foreign States.

- Against atomic and nuclear facilities.
- Smuggling in High-Quality Counterfeit Indian Currency.
- It implements international treaties, agreements, conventions and resolutions of the United Nations, its agencies and other international organisations.
- It acts as the Central Counter-Terrorism Law Enforcement Agency.

7) Cap on election expenditure

Why are there caps on election expenditure?

- Limits on campaign expenditure are meant to provide a level-playing field for everyone contesting elections. It ensures that a candidate can't win only because she is rich.
- The **255th Report of the Law Commission on electoral reforms** argued that unregulated or under-regulated election financing could lead to "lobbying and capture, where a sort of quid pro quo transpires between big donors and political parties/candidates".

Expenditure limits

- The Election Commission (EC) imposes limits on campaign expenditure incurred by a candidate, **not political parties**.
- Candidates must **mandatorily file a true account of election expenses** with the EC.
- An incorrect account or expenditure beyond the ceiling can attract **disqualification for up to three years** under **Section 10A of The Representation of the People Act, 1951**.

Effectiveness of cap

- It has often been argued that these limits are unrealistic as the actual expenditure incurred by the candidate is much higher.
- However, due to the EC's stipulated cap it is not reflected in the

expenditure statements submitted to it and is instead disguised in various ways or driven through illegal mechanisms.

- An analysis of expenses for the 2014 Lok Sabha elections by the **nonprofit Association for Democratic Reforms (ADR)** found that even though candidates complained that the EC's limits were too low and unrealistic, as many as 176 MPs (33%) had declared election expenses that were less than 50% of the limit in their constituency — indicating that candidates may not be providing true accounts of their poll expenses to the EC.

EC's view on party spends

- The EC had previously asked the government to **amend the Representation of the People Act and Rule 90 of The Conduct of Elections Rules, 1961**, to introduce a ceiling on campaign expenditure by **political parties** in the Lok Sabha and Assembly polls.

Why in News?

- The Law Ministry has increased the ceiling on poll expenditure for Assembly and Lok Sabha elections by 10% by issuing a notification amending the **Conduct of Elections Rules, 1961**.
- The move was based on a recommendation of the Election Commission which suggested a 10% increase in expenditure for all elections to be held during the COVID-19 pandemic, keeping in mind the problems that candidates may face while campaigning under the various COVID protocol laid down by the poll panel.

Revised limits

- The ceiling on poll expenditure **varies across States**, with candidates in Assembly elections in bigger States like Bihar, Uttar Pradesh, and Tamil Nadu now allowed to spend up to ₹30.8 lakhs as against ₹28 lakhs earlier.

- For a candidate contesting a Lok Sabha poll in these States, the revised ceiling on poll expenditure is now ₹77 lakhs instead of the earlier amount of ₹70 lakhs.
- Goa, Arunachal Pradesh, Sikkim and a few Union Territories, based on the size of their constituencies and population, have a lower ceiling on poll expenditure. Here while the enhanced ceiling for a Lok Sabha candidate is now ₹59.4 lakhs those contesting an Assembly can spend up to ₹22 lakhs.
- The last time the expenditure ceiling was enhanced was in **2014** just ahead of the Lok Sabha polls.
- The notification, however, does not mention that the limit has been increased in the wake of the pandemic or if it is only for the COVID-19 period.

8) Citizenship (Amendment) Act, 2019

How is citizenship acquired in India?

- In India, citizenship is regulated by the **Citizenship Act, 1955**.
- The Act specifies that citizenship may be acquired in India through **five methods** – by birth in India, by descent, through registration, by naturalisation (extended residence in India), and by incorporation of territory into India.

Can illegal migrants acquire citizenship?

- An illegal migrant is prohibited from acquiring Indian citizenship.
- An illegal migrant is a foreigner who: (i) enters the country without valid travel documents, like a passport and visa, or (ii) enters with valid documents, but stays beyond the permitted time period.
- Illegal migrants may be imprisoned or deported under the **Foreigners Act, 1946** and the **Passport (Entry into India) Act, 1920**.

How does the 2019 Act seek to change the criteria for determining citizenship?

- The Citizenship (Amendment) Act 2019 makes it clear that immigrants belonging to **Hindu, Sikh, Christian, Buddhist, Jain and Parsi communities** from the Muslim-majority nations (**Pakistan, Bangladesh and Afghanistan**) will not be treated as illegal.
- They will also be eligible to get naturalised citizenship.
- One of the requirements for citizenship by **naturalization** under the 1955 Act is that the applicant must have resided in India during the last 12 months, and for 11 of the previous 14 years.
- The amendment act **relaxes this 11-year requirement to five years** for persons belonging to these six religions from these three countries.
- They will also no longer be deported or jailed under the Foreigners Act of 1946 and the Passport (Entry into India) Act of 1920.
- The cut-off date for citizenship is **December 31, 2014** which means the applicant should have entered India on or before that date.

Rationale of the Law

- The Statement of Objects and Reasons in the amendment Act (SoR) states that India has had historic migration of people from Afghanistan, Pakistan and Bangladesh, and these countries have a state religion, which has resulted in **religious persecution** of minority groups.

Are the provisions of the Act applicable across the country?

- The Act clarifies that the amendments will not apply to certain areas. These are:
 - 1) The tribal areas of Assam, Meghalaya, Mizoram, and Tripura, as included in the **Sixth Schedule to the Constitution**. These tribal areas include Karbi Anglong (in Assam), Garo

Hills (in Meghalaya), Chakma District (in Mizoram), and Tripura Tribal Areas District.

- 2) The **states regulated by the “Inner Line” permit** under the Bengal Eastern Frontier Regulation 1873.

How does the Act change the regulations for Overseas Citizens of India?

- The Act also amends the provisions on registration of **Overseas Citizens of India (OCI)**.
- OCI cardholders are foreigners who are persons of Indian origin.
- The government may cancel a person’s OCI registration on various grounds specified in the 1955 Act.
- The 2019 amendment **adds another ground for cancelling OCI registration** — violation of any law notified by the central government.

Why in News?

- The Ministry of Home Affairs recently said that the process of framing rules for the Citizenship (Amendment) Act is on and the act will be implemented soon.

Related Information

Inner Line Permit

- The Inner Line Permit (ILP) is an official travel document that allows Indian citizens to stay in an area under the ILP system.

- The document is currently required by visitors to **Arunachal Pradesh, Manipur, Nagaland and Mizoram**.
- The ILP is issued by the **concerned state government**. The permits issued are mostly of different kinds, provided separately for tourists, tenants and for other purposes.
- The main objective of the ILP system is to prevent settlement of other Indian nationals in the notified states in order to **protect the indigenous population**. It also offers protection for the locals with regards to lands, jobs and other facilities.

History of ILP

- Under the **Bengal Eastern Frontier Regulation Act, 1873**, the British framed regulations restricting the entry and regulating the stay of outsiders in designated areas.
- This was to protect the Crown’s own commercial interests by preventing “British subjects” (Indians) from trading within these regions.
- In 1950, the Indian government replaced “British subjects” with “Citizen of India”. This was to address local concerns about protecting the interests of the indigenous people from outsiders belonging to other Indian states.

International Relations

1) Nagorno-Karabakh Dispute

Background

- Modern-day Armenia and Azerbaijan became part of the **Soviet Union** when it formed in the 1920s.
- As the Soviet Union saw increasing tensions in its constituent republics in the 1980s, **Nagorno-Karabakh** voted to become part of Armenia, but the Soviets gave control over the area to Azerbaijani authorities. It sparked ethnic clashes that stopped with a ceasefire in 1994.
- Since then, Nagorno-Karabakh has remained **part of Muslim-majority Azerbaijan** but is **controlled by separatist ethnic Armenians** backed by the Christian Armenian government.
- The ceasefire also established the **Nagorno-Karabakh Line of Contact**, separating Armenian and Azerbaijan forces.



Peace talks

- Peace talks have taken place since then, mediated by the **Organization for Security and Co-operation in Europe (OSCE) Minsk Group** - a body set up in 1992 and chaired by France, Russia and the United States.
- However, negotiations have so far failed to produce a permanent peace agreement, and the dispute remains one of post-Soviet Europe's "**frozen conflicts**."

Why in News?

- Russia has brokered a new peace deal between Armenia and Azerbaijan, the two countries that have been in a military conflict for over six weeks over the disputed region of Nagorno-Karabakh in the South Caucasus.
- The recent clashes reignited concern about instability in the **South Caucasus**, a corridor for pipelines transporting oil and gas to world markets.
- The **Caucasus** is a strategically important mountainous region in south-east Europe. For centuries, different powers in the region have vied for control there.

What is the new peace deal?

- As per the new peace deal, both sides will now maintain positions in the areas that they currently hold, which will mean a significant gain for Azerbaijan as it has reclaimed over 15-20 per cent of its lost territory during the recent conflict.
- Further, under this agreement, all military operations are suspended, Russian peacekeepers will be deployed along the line of contact in Nagorno-Karabakh and along the **Lachin corridor** that connects the region to Armenia. These Russian peacekeepers with a force of roughly 2,000 will be deployed in the area for a period of five years.



2) India, Japan finalise pact for cooperation in 5G, AI

What's in the news?

- India and Japan have finalized an ambitious agreement that provides for **cooperation in 5G technologies, artificial intelligence and an array of other critical areas.**
- The agreement promotes cooperation in capacity building, research and development, security and resilience in the areas of Critical Information Infrastructure, 5G, Internet of Things (IoT), Artificial Intelligence (AI), among others.
- Japan also agreed to be the lead partner in the connectivity pillar of the **Indo-Pacific Oceans' Initiative (IPOI).**

About IPOI

- The Indo-Pacific Oceans' Initiative (IPOI) was launched by **Prime Minister Narendra Modi** in 2019 at the **East Asia Summit** held in Bangkok, Thailand.
- The IPOI is aimed at making meaningful efforts to create a **safe and secure maritime domain in the Indo-Pacific**, a region where China has been expanding its military assertiveness triggering global concerns.
- As an open global initiative, the IPOI draws on existing regional cooperation architecture and mechanisms to focus on **seven central pillars** conceived around Maritime Security; Maritime Ecology; Maritime Resources; Capacity Building and Resource Sharing; Disaster Risk Reduction and Management; Science, Technology and Academic Cooperation; and Trade Connectivity and Maritime Transport.

Related Information

EAS

- The East Asia Summit (EAS) is a unique Leaders-led forum of **18 countries of the Asia-Pacific region** formed to

further the objectives of regional peace, security and prosperity.

- It has evolved as a forum for strategic dialogue and cooperation on political, security and economic issues of common regional concern and plays an important role in regional architecture.

Membership

- Established in **2005**, EAS allows the principal players in the Asia-Pacific region to discuss issues of common interest and concern, in an open and transparent manner, at the highest level.
- The membership of EAS consists of **ten ASEAN Member States** (i.e. Brunei Darussalam, Cambodia, Indonesia, Lao PDR, Malaysia, Myanmar, Singapore, Thailand, the Philippines and Vietnam), **Australia, China, India, Japan, New Zealand, Republic of Korea, Russian Federation and the USA.**
- India is a founding member of EAS.
- EAS is an initiative of ASEAN and is based on the premise of the centrality of ASEAN. **EAS can only be chaired by an ASEAN member.**

Priority areas

- There are **six priority areas** of regional cooperation within the framework of the EAS. These are – Environment and Energy, Education, Finance, Global Health Issues and Pandemic Diseases, Natural Disaster Management, and ASEAN Connectivity.
- **India** endorses regional collaboration in all six priority areas.

3) 'One China' policy

China-Taiwan Relations

- Taiwan, officially known as the **Republic of China (ROC)**, is an island off the southern coast of China that has been governed independently from mainland China since 1949.
- China and Taiwan sharply disagree on the island's status. While Taiwan's

government claims it is an independent country, the **People's Republic of China (PRC)** asserts that there is only **"one China"** and that Taiwan is an inalienable part of it.



Background

- The China-Taiwan Relations can be traced back to 1949 and the end of the Chinese civil war.
- The defeated Nationalists, also known as the Kuomintang, retreated to Taiwan and made it their seat of government while the victorious Communists began ruling the mainland as the People's Republic of China.
- The island has since been run as a separate entity from mainland China, though Beijing never gave up its claim over Taiwan.

'One China' policy

- It is the diplomatic acknowledgement of China's position that there is **only one Chinese government**. It acknowledges Taiwan being part of China and the PRC as the sole legitimate government of China.
- Any country that wants diplomatic relations with mainland China **must break official ties with Taiwan**. This has resulted in Taiwan's diplomatic isolation from the international community.
- Taiwan now only has diplomatic relations with 15 countries, almost all small and developing nations like Nauru, Belize and Honduras.

Why in News?

- China has asked India to approach ties with Taiwan prudently and properly in line with the 'One-China principle' and said it would firmly oppose any official exchanges between New Delhi and Taipei.
- The statement came in response to reports that India and Taiwan were considering going forward with talks on a trade deal.
- India and Taiwan in 2018 already signed a bilateral investment agreement. India-Taiwan trade ties have expanded since and Taiwanese firms are prominent investors in India, although **India and Taiwan do not maintain formal diplomatic relations**.

4) India-U.S. 2+2 dialogue

What's in the news?

- India and the U.S. signed the **Basic Exchange and Cooperation Agreement (BECA)** during the third 2+2 dialogue of defence and foreign ministers of the two countries.
- This is the fourth and the last of the foundational agreements that both countries have concluded, starting with **GSOMIA (General Security of Military Information Agreement) in 2002**, **LEMOA (Logistics Exchange Memorandum of Agreement) in 2016**, **COMCASA (Communications Compatibility and Security Agreement) in 2018**, and now BECA.

What are foundational agreements?

- The United States enters into what are called **'foundational or enabling agreements'** with its defence partners. These agreements govern the nature and scope of U.S. defence partnerships. Partners enhance the capabilities of the U.S. military in distant places through sharing information, platforms and logistics.
- The U.S. sells military equipment to other countries with strict control over their deployment and use. The **sale of**

advanced communication and security systems on the aircraft — which are not commercially available — is **made seamless by foundational agreements**.

- The U.S. has signed these foundational agreements with at least 100 countries, which mostly follow a standard text. Country specific changes were made in India's case in all four foundational agreements.

What do these agreements do?

GSOMIA

- The General Security of Military Information Agreement or GSOMIA, and its extension, the **Information Security Annex (ISA)** signed in 2019, allow military technology cooperation for the **sharing of classified information between governments and companies in both countries**.

LEMOA

- The LEMOA **enables logistics support**, say refuelling of planes or ships, supply of spare parts or maintenance to each other. Even in the absence of this agreement, such cooperation can and has taken place between India and the U.S., but the agreement makes it seamless, and the accounting easier.
- This is **purely a logistical agreement**. There will be no basing of the U.S. troops or assets on Indian soil.

COMCASA

- The COMCASA allows Indian forces to **procure advanced, secure communication equipment from the U.S.** Such equipment was earlier denied for U.S. origin platforms such as C-17, C-130, and commercial systems were used in their place. Only after COMCASA was signed were the encrypted systems provided to India.

BECA

- BECA will help India get real-time access to **American geospatial intelligence** that will enhance the accuracy of automated systems and

weapons like missiles and armed drones. Through the sharing of information on maps and satellite images, it will help India access topographical and aeronautical data, and advanced products that will **aid in navigation and targeting**.

- BECA will provide Indian military systems with a **high-quality GPS** to navigate missiles with real-time intelligence to precisely target the adversary.

What is the strategic importance of these agreements?

- Since the **Civil Nuclear Agreement of 2005**, the India-U.S. defence cooperation has been advancing at a rapid pace.
- The U.S. has relaxed restrictions on technology trade in India's favour considerably, and India is designated a **'Major Defence Partner'**.
- Foundational agreements deepen defence cooperation, in trade and operation. India and the U.S. are also part of a broader **shared vision for the Indo-Pacific region**, where both countries, along with Japan and Australia, are increasing their military cooperation.
- U.S.-built platforms used by partner countries can talk to one another and share operational information.

Are there any concerns?

- Critics worry that tying itself too closely with the U.S. **may limit India's choices**.
- The evolution of technology makes it inevitable that all military platforms will be integrated and networked in the future. The U.S. is very particular about the integrity of its networks, and **pressure could mount on India to remain firmly in its camp**.
- The U.S. is particularly irked by India's continuing defence cooperation with Russia. India will be taking delivery of the **Russian S-400 missile defence**

system (*Refer Pulse June edition*) soon, ignoring American objections.

- The U.S. could respond with sanctions. At any rate, it will not be possible to integrate Russian and American platforms, and this could throw up new

challenges of military planning for India.

- The moot question is whether India could ramp up its defense cooperation with the U.S. without ending up as its ally.

Defence

1) Exercise SLINEX-20

About the Exercise

- SLINEX is a series of bilateral maritime exercises between **India and Sri Lanka** which has strengthened mutual cooperation in the maritime domain.
- SLINEX-20 aims to enhance interoperability, improve mutual understanding and exchange best practices and procedures for multi-faceted maritime operations between both navies.

Why in News?

- The Eighth Edition of annual Indian Navy (IN) – Sri Lanka Navy (SLN) bilateral maritime exercise SLINEX-20 was held in Trincomalee, Sri Lanka.
- Interaction between both the countries has grown significantly in recent years, in consonance with India's policy of **'Neighbourhood First'** and the vision of **'Security and Growth for all in the Region (SAGAR)'**.

SAGAR



- Security and Growth for All in the Region (SAGAR) is a **maritime strategy** devised by the Prime Minister Narendra Modi in 2015.
- As per SAGAR, India seeks to deepen economic and security cooperation with its maritime neighbours and assist in building their maritime security capabilities and also work to

ensure a safe, secure and stable Indian Ocean Region.

- For this, India would cooperate on the exchange of information, coastal surveillance, building of infrastructure and strengthening their capabilities.

2) Nag Anti-Tank Missile

About Nag Missile

- It is a third-generation, fire-and-forget, anti-tank guided missile. Nag can be launched from land and air-based platforms.
- It was indigenously developed under the **Integrated Guided Missile Development Programme (IGMDP)**.
- Nag has top attack capabilities that can effectively engage and destroy all known enemy tanks during day and night.
- It has a capability to defeat Main Battle Tanks (MBT) equipped with composite and reactive armour.
- It can be used in **all weather conditions** with a **minimum range of 500 metres and maximum range of 4 km**.

Integrated Guided Missile Development Programme

- IGMDP is an Indian Ministry of Defence programme for the research and **development of the comprehensive range of missiles**.
- The project started in 1982–83 under the **leadership of former President Dr. Abdul Kalam** who oversaw its ending in 2008 after these strategic missiles were successfully developed.
- The 5 missiles developed under this program are:
 1. **Prithvi**: Short range surface to surface ballistic missile.
 2. **Akash**: Medium range surface to air missile.
 3. **Nag**: 3rd generation anti-tank missile.
 4. **Trishul**: Short range low level surface to air missile.

5. **Agni:** Ballistic missiles with different ranges- Agni (1,2,3,4,5)

Why in News?

- The Defence Research and Development Organisation (DRDO) recently executed the final user trial of Nag anti-tank missile.

Nobel Prizes 2020

1) World Food Programme

About WFP

- The World Food Programme (WFP) is the **food-assistance branch of the United Nations** and the world's largest humanitarian organization addressing hunger and promoting food security.
- Assisting almost 100 million people in around 83 countries each year, the WFP responds to emergencies making sure food reaches where it is needed, especially in times of civil strife and natural disasters.
- The organisation has widened its operational remit and is now a leading provider of not just emergency food aid but also an agency engaged in **supporting the nutritional requirements of communities through food assistance programmes**. These vary from supporting school meals projects in different countries, including India, to the provision of cash and vouchers as a complement to in-kind food distributions.
- WFP is **funded entirely by voluntary donations**, most of which comes from governments.
- Established in **1961**, WFP is headquartered in **Rome**, Italy.
- It works closely with the other two Rome-based UN agencies: the **Food and Agriculture Organization (FAO)**, which helps countries draw up policy and change legislation to support sustainable agriculture, and the **International Fund for Agricultural Development (IFAD)**, which finances projects in poor rural areas.

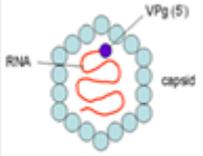
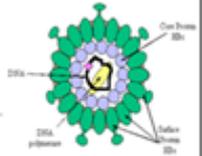
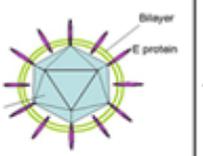
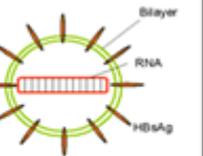
Why in News?

- The 2020 Nobel Peace Prize has been awarded to the United Nations World Food Programme.

2) Nobel Prize in Physiology or Medicine

About Hepatitis

- Hepatitis refers to an inflammatory condition of the liver. Usually caused by a **viral infection**, but there exists **other possible causes** of hepatitis which are autoimmune responses, medications, drugs, toxins, and alcohol.
- There are **5 main hepatitis viruses**, referred to as types **A, B, C, D, and E**.
 - In particular, **types B and C lead to chronic disease** in hundreds of millions of people and, together, are the most common cause of liver cirrhosis and cancer.
 - Hepatitis A and E are typically caused by **ingestion of contaminated food or water**. Hepatitis B, C and D usually occur as a result of **parenteral contact with infected body fluids**. Common modes of transmission for these viruses include receipt of contaminated blood or blood products, invasive medical procedures using contaminated equipment and for hepatitis B transmission from mother to baby at birth, from family member to child, and also by sexual contact.
- Acute infection may occur with limited or no symptoms, or may include symptoms such as jaundice (yellowing of the skin and eyes), dark urine, extreme fatigue, nausea, vomiting and abdominal pain.

					
Name of Virus	Hepatitis A Virus (HAV)	Hepatitis B Virus (HBV)	Hepatitis C Virus (HCV)	Hepatitis D Virus (HDV)	Hepatitis E Virus (HEV)
Classification	Picornavirus	Hepadnavirus	Flavivirus	Deltavirus	Hepevirus
Viral genome	ssRNA	dsDNA	ssRNA	-ssRNA (-ve)	ssRNA
Transmission	Enteric	Parental	Parental	Parental	Enteric
Incubation period	15-45 days	45-160 days	15-150 days	30-60 days	15-60 days
Chronic Hepatitis	No.	Yes. 10% chance	Yes. >50% chance	Yes. <5% of coinfectious >80% of superinfectious	No.
Cure?	No cure. Treatments usually tackle the symptoms.	No cure. Treatments usually tackle the symptoms.	No cure. Treatments usually tackle the symptoms.	No cure. Treatment: Alpha interferon for 12 months.	No cure. Treatments usually tackle the symptoms.

Vaccines

- There are vaccines to prevent **Hepatitis A** and **Hepatitis B**; however, there is **no vaccine for hepatitis C**.
- In India **Hepatitis B vaccine** is provided under the Universal Immunization Programme (UIP). Hepatitis B vaccine also provides protection from **Hepatitis D virus (HDV) infection**.
- A vaccine to prevent **Hepatitis E virus infection** has been developed and is licensed in China, but is not yet available elsewhere.

Why in News?

- Americans Harvey J Alter and Charles M Rice and British scientist Michael Houghton were awarded the Nobel Prize for Medicine or Physiology for the **discovery of the Hepatitis C Virus (HCV)**.
- Prior to their work, the discovery of the Hepatitis A and B viruses had been critical steps forward, but the majority of blood-borne hepatitis cases remained unexplained.

- The discovery of Hepatitis C virus revealed the cause of the remaining cases of chronic hepatitis and made possible blood tests and new medicines that have saved millions of lives.
- Globally, an estimated 71 million people have chronic hepatitis C virus infection.
- Antiviral medicines can cure more than 95% of persons with hepatitis C infection, thereby reducing the risk of death from cirrhosis and liver cancer, but access to diagnosis and treatment is low.

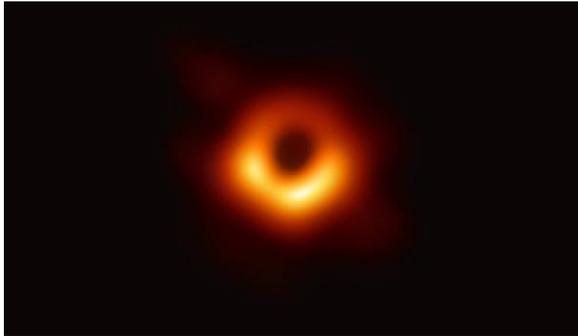
3) Blackhole

What are Black Holes?

- A black hole is a place in space where **gravity pulls so much that even light cannot get out**. The gravity is so strong because matter has been squeezed into a tiny space. This can happen when a star is dying.
- Because no light can get out, people can't see black holes. They are

invisible. Space telescopes with special tools can help find black holes.

- A black hole's "surface," called its **event horizon**, defines the boundary where the velocity needed to escape exceeds the speed of light, which is the speed limit of the cosmos.
- In 2019, astronomers using the **Event Horizon Telescope (EHT)** — an international collaboration that networked eight ground-based radio telescopes into a single Earth-size dish — captured an image of a black hole for the first time.
- It appears as a dark circle silhouetted by an orbiting disk of hot, glowing matter. The supermassive black hole is located at the heart of a galaxy called **M87**, located about 55 million light-years away, and weighs more than 6 billion solar masses.



How big are black holes?

- Black holes can be **big or small**. Scientists think the smallest black holes are as small as just one atom. These black holes are very tiny but have the mass of a large mountain. Mass is the amount of matter, or "stuff," in an object.
- Another kind of black hole is called "**stellar**." Its mass can be up to 20 times more than the mass of the sun. There may be many, many stellar mass black holes in Earth's galaxy. Earth's galaxy is called the Milky Way.
- The largest black holes are called "**supermassive**." These black holes have masses that are more than 1 million suns together. Scientists have found proof that every large galaxy

contains a supermassive black hole at its centre.

- The supermassive black hole at the centre of the Milky Way galaxy is called **Sagittarius A* (aka Sgr A*, pronounced Sagittarius A-star)**. It has a mass equal to about 4 million suns and would fit inside a very large ball that could hold a few million Earths.

How do black holes form?

- Scientists think the smallest black holes **formed when the universe began**.
- Stellar black holes are made when the center of a very big star falls in upon itself, or collapses. When this happens, it causes a **supernova**. A supernova is an exploding star that blasts part of the star into space.
- Scientists think supermassive black holes were made at the same time as the galaxy they are in.

Why in News?

- Three scientists (Sir Roger Penrose, Reinhard Genzel and Andrea Ghez) have been selected for Physics Nobel for their **discoveries about black holes**.

About the discovery

- Roger Penrose received half of this year's prize for the discovery that **black hole formation is a robust prediction of Albert Einstein's general theory of relativity**. Penrose proved mathematically that the formation of black holes was possible, based heavily on the general theory of relativity.
- Reinhard Genzel and Andrea Ghez received the second half of the prize for the discovery of supermassive black hole **Sagittarius A*** at the center of our Milkyway galaxy.
- Ghez is the **fourth woman to be awarded the Nobel Prize for physics**, after Marie Curie in 1903, Maria Goeppert-Mayer in 1963, and Donna Strickland in 2018.

Einstein's theory of relativity

- In 1915, Albert Einstein proposed the general theory of relativity.
- He postulated that gravity as a force was created when objects with mass bent the space-time continuum. The heavier the object, the more it bends space-time around itself, and so more its gravitational pull is felt to be.

4) Gene scissors

What is Gene editing?

- Gene editing (also known as genome editing) is a group of technologies that give scientists the **ability to change an organism's DNA**. These technologies allow genetic material to be added, removed, or altered at particular locations in the **genome**.
 - *A genome is the complete set of genetic information in an organism. It provides all of the information the organism requires to function. In living organisms, the genome is stored in long molecules of DNA called chromosomes.*
- Genome editing is of great interest in the **prevention and treatment of human diseases**. Currently, most research on genome editing is done to understand diseases using cells and animal models.
- Gene editing is being explored in research on a wide variety of diseases, including single-gene disorders such as cystic fibrosis, haemophilia, and sickle cell disease. It also holds promise for the treatment and prevention of more complex diseases, such as cancer, heart disease, mental illness, and human immunodeficiency virus (HIV) infection.

CRISPR-Cas9

- Several approaches to genome editing have been developed. A recent one is known as CRISPR-Cas9, which is short for clustered regularly interspaced

short palindromic repeats and CRISPR-associated protein 9.

- This method of genome editing is **faster, cheaper, more accurate, and more efficient** than other existing methods.
- In essence, the technology works in a simple way — it locates the specific area in the genetic sequence which has been diagnosed to be the cause of the problem, cuts it out, and replaces it with a new and correct sequence that no longer causes the problem.
- The technology **replicates a natural defence mechanism in some bacteria** that uses a similar method to protect itself from virus attacks.

How does it work?

- An **RNA molecule** is programmed to locate the particular problematic sequence on the DNA strand, and a special protein called **Cas9**, which now is often described in popular literature as '**genetic scissor**', is used to break and remove the problematic sequence.
- A DNA strand, when broken, has a natural tendency to repair itself. But the auto-repair mechanism can lead to the re-growth of a problematic sequence. Scientists intervene during this auto-repair process by supplying the desired sequence of genetic codes, which replaces the original sequence.
- It is like cutting a portion of a long zipper somewhere in between, and replacing that portion with a fresh segment.

Concerns

- **Unwanted mutations:** The application of CRISPR-Cas9 in the germline is considered more problematic because of the risk of causing various mutations and side effects and transferring undesirable changes to future generations.
- **Human clinical trials** have not been carried out anywhere in the world to test whether disabling genes

completely prevents diseases and what the side-effects of doing so would be.

- **Unethical practices:** The concept of designer babies may start. A Chinese doctor in 2018 claimed to use CRISPR-Cas9 technology to alter the genes of a human embryo that eventually resulted in the birth of twins.
- Following a global outcry, the **World Health Organization (WHO)** formed a panel of gene-editing experts which called upon WHO to set up a **central registry** of all human genome editing research to create an open and transparent database of ongoing work.
- The idea of a classless society may not exist in future as some may claim **genetic superiority** like Aryan Theory of Hitler.

Why in News?

- Scientists Emmanuelle Charpentier and Jennifer Doudna won the Nobel Chemistry Prize 2020 for discovering the CRISPR/Cas9 genetic scissors.
- It is the first time a Nobel science prize has gone to a women-only team.

5) Auction Theory

What is auction theory?

- Essentially, it is about how auctions lead to the discovery of the price of a commodity. Auction theory studies how auctions are designed, what rules govern them, how bidders behave and what outcomes are achieved.
- They are the most widely used and also the most efficient mechanism to **allocate scarce resources**.

How is it relevant?

- Throughout history, countries have tried to allocate resources in various ways. Some have tried to do it through **political markets**, but this has often led to **biased outcomes**.
- **Lotteries** are another way to allocate resources, but they do not ensure that scarce resources are allocated to people who value it the most.
- Auctions have been the most common tool for thousands of years used by societies to allocate scarce resources. When potential buyers compete to purchase goods in an auction, it **helps sellers discover those buyers who value the goods the most**. Further, selling goods to the highest bidder also **helps the seller maximise his or her revenues**. So, both buyers and sellers benefit from auctions.

What's in the news?

- The Royal Swedish Academy of Sciences awarded this year's Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel (popularly referred to as the Nobel Prize for Economics) to Paul R Milgrom and Robert B Wilson.
- The contributions of Dr. Milgrom and Dr. Wilson have helped governments and private companies design their auctions better. This has, in turn, helped in the better allocation of scarce resources and offered more incentives for sellers to produce complex goods.