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National Human Rights Commission (NHRC)	**Context** Fifteen years after the Supreme Court issued directions for police reforms, the National Human Rights Commission (NHRC) has asked the Union Home Ministry (MHA) and the State Governments to set up police complaints authorities as per the judgment inPrakash Singh vs Union of India, 2006. **Key recommendations** • The status of compliance should be displayed on the websites of the Ministry and the State Home Departments. • The MHA and the Law Ministry should consider implementing the recommendations of the 113th report of the Law Commission to add Section 114 B to the Indian Evidence Act. • This would ensure that in case a person sustains injuries in police custody, it is presumed that the injuries were inflicted by the police and the burden of proof to explain the injury lies on the authority concerned. • Making the legal framework technology-friendly to speed up the criminal justice system. • The SC's December 2020 order to install CCTV cameras with night vision in all police stations should be "implemented immediately" to ensure accountability.

Five-year terms for CBI and ED chiefs	**Context** The Indian President recently promulgated (brought into effect) two ordinances that would allow the Union Government to extend the tenures of the directors of the Central Bureau of Investigation (CBI) and the Enforcement Directorate (ED) from two years to up to five years.
	The chiefs of the Central agencies currently have a fixed two-year tenure, but can now be given three annual extensions.
	The amended Acts
	• For CBI director: The Delhi Special Police Establishment Act, 1946 was amended
	• The Central Vigilance Commission Act, 2003 was amended with respect to the ED Director's post.
	About Central Bureau of Investigation (CBI)
	• The CBI is the premier investigating agency of India.
	• Ministry: Ministry of Personnel, Public Grievances and Pensions.
	• Role: It was originally set up to investigate bribery and governmental corruption. In 1965, it received expanded jurisdiction to investigate breaches of central laws enforceable by the Government of India, multi-state organised crime, multi-agency or international cases.
	• CBI is exempted from the provisions of the Right to Information Act.
	• CBI is India's officially designated single point of contact for liaison with the Interpol.
	• The CBI headquarter: New Delhi.
	About Enforcement Directorate (ED)
	• Directorate of Enforcement (ED) is a law enforcement agency and economic intelligence agency responsible for enforcing economic laws and fighting economic crime in India.
	• Ministry: Department of Revenue, Ministry of Finance
	• The prime objective is the enforcement of two key Acts:
	  ○ The Foreign Exchange Management Act 1999 (FEMA)
	  ○ The Prevention of Money Laundering Act 2002 (PMLA)
	• Headquarters: New Delhi
	• Five regional offices: Mumbai, Chennai, Chandigarh, Kolkata and Delhi headed by Special Directors of Enforcement.

Vanniyar quota	**Context** The Tamil Nadu Government has filed an appeal in the Supreme Court, challenging the Madras High Court's November 1 order. • The order had declared ultra vires (beyond one's legal power or authority) a law of TN government which provided 10.5% internal reservation for Vanniyars within the overall 20% quota for the Most Backward Classes (MBCs) in government jobs and higher education. • The recommendation for 10.5% reservation to the Vanniyakula Kshatriya was made in commensurate with their population as enumerated in a survey held in 1983 by the Tamil Nadu Second Backward Classes Commission. **What is Vanniyar Movement?** • Vanniyars are one of the largest and most consolidated backward communities in Tamil Nadu. • They had raised massive protests in the mid-1980s demanding 20% reservation in the state, and 2% in central services. • During agitation from September 17 to 23, 1987, many protesters were killed. • Split of OBC quota: In 1989, the OBC quota was split into two: Backward Castes and Most Backward Castes. ○ Vanniyars were categorised among the MBCs with 107 other communities, with 20% reservation. • Three decades later, the state government passed a Bill, and the current government has implemented it with a Government Order ensuring 10.5% reservation for Vanniyars within the 20% MBC quota.

Community kitchens	**Context** The Supreme Court recently questioned the Union Government's commitment to run community kitchens across the country to reduce hunger.
	• It said that the first job of a welfare state was to ensure that people did not starve to death.
	Key takeaways
	• The court observed that the Government's progress was slow in framing a national policy to run community kitchens in consultation with the State Governments.
	• The SC has given the Government three weeks as a last opportunity to hold a meeting and frame a policy.
	Perils of starvation
	• Starvation deaths continue to impinge upon the right to life and dignity of the social fabric.
	• A "radical" new measure like community kitchens needed to be set up across the country to feed the poor and the hungry.
	No statistics for starvation
	• While there are statistics available for malnutrition deaths in children and adults in the country, there is no official data available for death of persons owing to starvation.
	• Food and Agriculture Report 2018 stated that India houses 195.9 million of the 821 million undernourished people in the world which accounts for approximately 24% of the world's hungry.
	• Prevalence of undernourishment in India is 14.8%, higher than both the global and Asian average.
	Community kitchens in various states
	• Tamil Nadu's Amma Unavagam was a huge success by involving peers in self-help groups and employing the poor to serve hygienic food to eradicate the gnawing problem of hunger on the streets.
	• Other examples include -
	  ○ Rajasthan's Annapurna Rasoi
	  ○ Indira Canteen in Karnataka
	  ○ Aam Aadmi Canteen in Delhi

	○ Anna Canteen of Andhra Pradesh ○ Jharkhand Mukhyamantri Dal Bhat in Jharkhand ○ Ahaar Centre in Odisha
Odisha's project 'Samhati' for tribal languages	**Context** The new National Education Policy lays emphasis on imparting teaching in mother tongue in primary classes. • Thus, Odisha has launched Samhati project for imparting its various tribal languages. • The project will help save endangered tribal languages. **About Odisha's Samhati project** • According to the Odisha School Education Programme Authority (OSEPA), more than 302 textbooks and 2,500 supplementary reading materials including story books and pictures charts in 21 tribal languages have been developed. • Under Samhati, all teachers of primary level would be provided functional knowledge of tribal languages. • Implemented by: The Scheduled Castes and Scheduled Tribes Research and Training Institute (SCSTRTI) and the Academy of Tribal Language and Culture (ATLC), Bhubaneswar • Of the 21 languages, Santhali — the only language which has been included in eighth schedule of Constitution — is taught in its own ol chiki script while rest of tribal languages have Odia scripts. **Do you know?** • Odisha is home to 62 different tribal communities including 13 particularly vulnerable tribal groups (PVTGs), making it the State with the most diverse indigenous communities in the country. • Of Odisha's 21 tribal languages, Santhali — the only language which has been included in eighth schedule of Constitution — is taught in its own ol chiki script while rest of tribal languages have Odia scripts.
CCI Market Study on Pharma Sector	Context The Competition Commission of India (CC) in a recent report has recommended the creation of a National Digital Drugs Databank and strict enforcement of drug quality standards to boost price competition among generic drugs in India. **Key takeaways of the report** • The market for generic drugs is driven by brand competition instead of price competition despite such drugs being functionally and chemically identical. • Pharmaceuticals including generic drugs account for about 43.2% of out of pocket healthcare expenditure in India and about 62.7% of the total health spending in India. • The share of online pharmacies stood at 2.8% in 2018, the online pharmacy sector's reach has expanded during the pandemic to 8.8 million households from 3.5 million households prior to the pandemic. **About Competition Commission of India (CCI)** • It is a statutory body established in 2003 and became fully functional in 2009. • It is responsible for enforcing The Competition Act, 2002 throughout India. ○ The Act prohibits anti-competitive agreements, abuse of dominant position by enterprises. ○ The Act regulates combinations (acquisition, acquiring of control and Merger and acquisition), which causes or likely to cause an appreciable adverse effect on competition within India. • CCI consists of a Chairperson and 6 Members appointed by the Central Government. ○ Eligibility: Person should be qualified to be a judge of a High Court, or, has special knowledge of, and professional experience of not less than fifteen years in international trade, economics, commerce, law, finance. • It is the duty of the Commission to: ○ eliminate practices having adverse effect on competition ○ promote and sustain competition.

	○ protect the interests of consumers. ○ ensure freedom of trade in the markets of India.
Farm laws repealed	• The process of repealing the laws — which are currently stayed by the Supreme Court — will take place in the upcoming Winter Session of Parliament. Key takeaways • Repealing a law is one of the ways to nullify a law. • A law is reversed when Parliament thinks there is no longer a need for the law to exist. • Legislation can also have a "sunset" clause, a particular date after which they cease to exist. • For example, the anti-terror legislation Terrorist and Disruptive Activities (Prevention) Act 1987, commonly known as TADA, had a sunset clause, and was allowed to lapse in 1995. • For laws that do not have a sunset clause, Parliament has to pass another legislation to repeal the law. • Article 245: Parliament has the power to make laws for the whole or any part of India, and state legislatures the power to make laws for the state. • A law can be repealed either in its entirety, in part, or even just to the extent that it is in contravention of other laws Laws can be repealed in two ways — either through an ordinance, or through legislation.
Personal Data Protection (PDP) Bill	**Context** At least five of the 30 members of the Joint Parliamentary Committee on the Personal Data Protection (PDP) Bill are expected to move dissent (disagreement with official opinions) notes to the panel's report on the legislation. These notes were mostly directed at the controversial clause that allowed the Union Government to exempt any agency under its purview from the law. **About Personal Data Protection (PDP) Law** • The law is a comprehensive piece of legislation that seeks to give individuals greater control over how their personal data is collected, stored and used. • The Bill also establishes a Data Protection Authority for the same. • Genesis of the Bill • The genesis of this Bill lies in the report prepared by a Committee of Experts headed by Justice B.N. Srikrishna. • The committee was constituted by the government in the course of hearings before the Supreme Court in the right to privacy case (Justice K.S. Puttaswamy v. Union of India). **Contentious section 35** • Section 35, which invokes "sovereignty and integrity of India," "public order", "friendly relations with foreign states" and "security of the state" to give powers to the Central government to suspend all or any of the provisions of this Act for government agencies. • This clause assumes importance against the backdrop of recent revelations in the Pegasus spyware case, where both private and public citizens were allegedly snooped upon by the Government. • The panel reached a middle path on the clause by agreeing that the Government had to record in writing the reasons to give exemption to any agency. • Demands that this clause be suitably amended so as to include the provision to seek approval from Parliament for seeking such exemptions were not accepted by the Government.
National Family Health Survey (NFHS) 5	**Context** National Family Health Survey (NFHS) 5 was recently released. • It has captured population health indicators in 2017-19. **Key findings of the survey** • Institutional births: Births in institutional facilities, such as a hospital, improved by nearly 8 percentage points.

- Stunted growth: Stunted Children or showing signs of wasting only dropped by a maximum of 3 percentage points.
- Total Fertility Rate (TFR): It has reduced to 2.0 from 2.2 (NFHS-4).
    - According to the United Nations Population Division, a TFR of about 2.1 children per woman is called replacement-level fertility.
    - If this fertility is sustained over a sufficiently long period, each generation will exactly replace itself.
- Contraceptives: Use of contraceptives improved from 53.5% to 66.7%
- Sterilisation: An increase in female sterilisation. Continued stagnation in male sterilisation uptake.
    - It shows that the onus of family planning still lies with women.
- Full vaccination: Fully vaccinated Proportion of children (12-23 months) improved from 62%-76%.
- Exclusive breastfeeding: Improvement In Children under six months who were exclusively breastfed from 54.9% to 63.7%.
- Nutritional gains: Minimal improvement in children.
    - Gains in women and men (15-49) with below normal BMI dropped roughly four percentage points.
    - Those with higher BMI than normal increased by around 4 percentage points.
    - Abnormal BMIs are linked to an increase in obesity and other non-communicable diseases (NCD)
- Anaemia: The proportion of anaemic children (6-59 months) increased from 58% to 67%.
    - Anaemic Women (15-49 years) increased from 53% to 57%.
    - Anaemic Men of the same age increased from 29% to 31%.

Hunger watch

The nutritional status of children in India barely improved in 2019-20 from the levels in 2015-16, the National Family Health Survey-5 data show

(IN %)

Indicator	2019-20	2015-16	2005-06
Children aged six to 59 months who are anaemic	67.1	58.6	69.4
Children under five who are stunted	35.5	38.4	48
Children under five who are wasted	19.3	21	19.8
Children under five who are severely wasted	7.7	7.5	6.4
Children under five who are underweight	32.1	35.8	42.5
Children aged six to 23 months receiving an adequate diet	11.3	9.6	-
Institutional births	88.6	78.9	38.7

Govt. to revisit income criterion for EWS quota

Context The Union Government has decided to revisit the criteria for determining the economically weaker sections (EWS) in terms of the provisions of the Explanation to Article 15 of the Constitution inserted by the Constitution (103rd Amendment) Act 2019.

- The committee would be set up to review the criteria and would take four weeks for the exercise.

Background

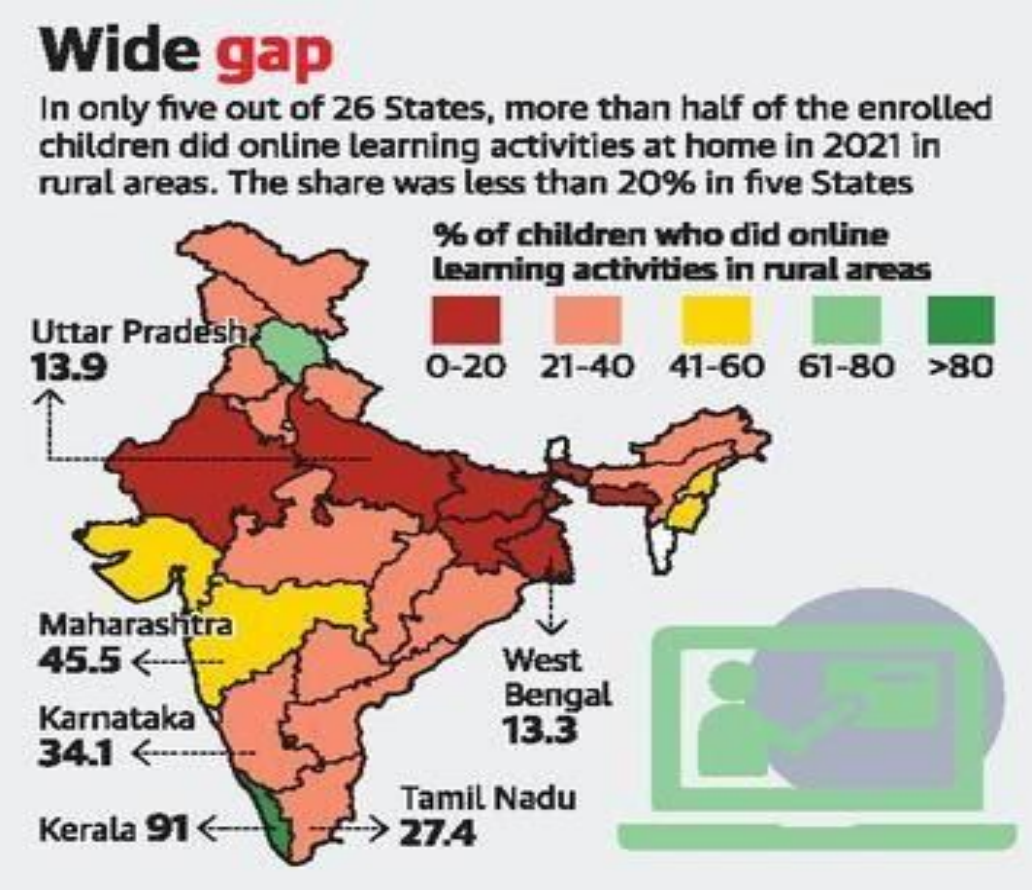
- NEET aspirants had filed a case challenging a notification announcing 27% quota to OBCs and 10% reservation to the EWS in the All India Quota (AIQ) category.

	What is EWS quota? • The EWS quota was meant for persons belonged to the Economy Based Un-Reserved Category having an annual family income less than ₹8 lakh and who do not belong to any other category such as SC/ST/OBC
National Courts of Appeal	**Context** Attorney General of India (AGI) K.K. Venugopal argued on the Constitution Day, for the revival of a 11-year-old proposal to set up National Courts of Appeal in four regions of the country. **Key Takeaways from AGI Statements** • **Intermediate appellate Courts:** Attorney General said four 'Courts of Appeal' with 15 judges each could act as intermediate appellate courts between the State High Courts and the Supreme Court. • **Utility of such Courts:** They would absorb matrimonial disputes, rent control cases and such like which burden the Supreme Court, adding to pendency. The judgments of these courts of appeal would be final. • **Increase in Judges Strength:** These courts would also mean we are adding 60 judges who would be taking over these cases. Pendency would be cut down to a very great extent. • **Unburden Supreme Court:** Such intermediate court of appeals would unburden the Supreme Court, which could focus on interpreting constitutional questions of law, references, death sentence cases. • **Better Jurisprudence:** Supreme Court judges could hear cases leisurely, read and write better judgments with time on their hands when their work load is decreased. • **Chances of Rationalising SC Strength:** In fact, the Supreme Court would not need 34 judges. Just 15 would be ample. These judges of the Supreme Court could sit in three Constitution Benches. • **Enhanced Access to Justice**: It is noted that cases remain pending in the Supreme Court for 10 years. It would have reached the Supreme Court after spending a decade each at the trial and high court levels.
Suspension of MPs	**Context**: In the ongoing Winter Session of Parliament, Minister for Parliamentary Affairs has sought the approval of the House for suspending 12 Rajya Sabha MPs for the remainder of the session. **Why has the minister asked for suspension of MPs?** • The reason for their suspension was "their unprecedented acts of misconduct, contemptuous, unruly and violent behaviour and intentional attacks on security personnel" on the last day of the Monsoon Session. • MPs are required to adhere to certain rules of parliamentary etiquette. **What is the procedure for suspension of MPs?** • The **presiding officer of each House can direct an MP** to withdraw from the legislative chamber for grossly disorderly conduct. The MP then has to remain absent from the proceedings of the House for the remainder of the day. • The presiding officers can also "name" an MP for "persistently and wilfully obstructing the business" of the House. In such a case, usually, the Parliamentary **Affairs Minister moves a motion for suspending the offending MP** from the service of the House. The suspension can last until the end of the session. • In 2001, the Lok Sabha rule was amended to give the Speaker one additional power. A new rule, 374A, **empowers the Speaker to automatically suspend an MP** for a maximum of five days for disrupting the business of the House.

	○ In 2015, Speaker Sumitra Mahajan used this rule for suspending 25 Congress MPs.
Out-Of-Pocket Expenditure (OOPE)	**In News:** As a share of total health expenditure, the OOPE has come down to 48.8% in 2017-18 from 64.2% in 2013-14. Even in the case of per capita OOPE, there has been a decline from ₹2,336 to ₹2,097 between 2013-14 and 2017-18. • One of the factors attributing to this decline is the increase in utilisation and reduction in cost of services in Government health facilities. • If we compare National Health Accounts (NHA) 2014-15 and 2017-18, there has been a decline in OOPE for Government hospitals to the tune of 50%. **Did government measures help in reduction of OOPE?** • The NHA estimates for 2017-18 clearly showed that there had been an increase in the share of Government health expenditure in the total GDP of the country. • It has increased from 1.15% in 2013-14 to 1.35% in 2017-18. Additionally, the share of Government Health Expenditure in total health expenditure has also increased over time. • In 2017-18, the share of Government expenditure was 40.8%, which is much higher than 28.6% in 2013-14. • The report further indicates that in per capita terms, the Government health expenditure has increased from ₹1,042 to ₹1,753 between 2013-14 to 2017-18.
NIPUN Bharat Scheme	**In News**: Detailed guidelines for the NIPUN Bharat Scheme have been developed which includes the codification of development goals and learning outcomes for age 3 to 9 years and Lakshya or Targets for Foundational Literacy and Numeracy starting from Balvatikato Grade III. • The Department of School Education and Literacy launched the National Mission on Foundational Literacy and Numeracy called National Initiative for Proficiency in Reading with Understanding and Numeracy (NIPUN Bharat) under the aegis of Centrally Sponsored Scheme of Samagra Shiksha. • The mission aims to achieve **universal foundational literacy and numeracy** in **primary** classes. • The Mission Guidelines lays down priorities and actionable agendas for States and UTs to achieve the goal of proficiency in foundational literacy and numeracy for every child by **grade 3**. *As per the NIPUN Bharat implementation guidelines, assessment during the foundational learning can be broadly categorized into two major areas, namely:* • **School Based Assessment (SBA)** through qualitative observation based on performance of the child in a multitude of experiences and activities. Various tools and techniques like anecdotal records, checklist, portfolio, and interactions (through a holistic 360-degree assessment with teacher, peers, family and friends) have been recommended to be used for assessment. Thus, the teachers at the foundational stage need to observe children as they play, work on their task, perform or interact among themselves, to assess children's interests and learning. • **Large-scale standardised assessment** for assessment of the processes and functioning of the educational systems (such as NAS, SAS, and Third-Party Assessments). The assessment tools commonly used in conducting large scale assessment studies are multiple choice questions (MCQ) and constructed responses are usually avoided to bring in objectivity in the process. These assessments are a mechanism to gauge how well learning is happening in their state, districts, and blocks. In this regard, the National Achievement Survey (NAS) 2021 has been carried out for assessing learning outcome of children in Grade III. • A specialized **National Initiative for School Heads' and Teachers' Holistic Advancement (NISHTHA 3.0)** for the foundational literacy and numeracy covering

	about 25 lakh teachers at the primary level across all states and UTs has been launched in September, 2021.
Online Dispute Resolution (ODR)	**In News:** NITI Aayog released the report 'Designing the Future of Dispute Resolution: The ODR Policy Plan for India', to scale dispute avoidance, containment and resolution online. The roll out of the stated recommendations in the report can help make India a world leader in using technology and innovation through Online Dispute Resolution (ODR) for effective access to justice for every individual. • Chaired by Supreme Court Justice (Retd) AK Sikri *Recommends measures at three levels to tackle challenges in adopting ODR framework in India* • At the structural level, it suggests actions to increase digital literacy, improve access to digital infrastructure and train professionals as neutrals to deliver ODR services. • At the behavioural level, the report recommends adoption of ODR to address disputes involving Government departments and ministries. • At the regulatory level, the report recommends a soft-touch approach to regulate ODR platforms and services. This involves laying down design and ethical principles to guide ODR service providers to self-regulate while fostering growth and innovations in the ecosystem. • The report also stresses on strengthening the existing legislative framework for ODR by introducing necessary amendments to statutes. The report offers a phased implementation framework for ODR in India. **What is ODR?** ODR is the resolution of disputes, particularly small- and medium-value cases, using digital technology and techniques of ADR, such as arbitration, conciliation and mediation. • It refers to the process of using technology for dispute avoidance, containment and resolution outside the traditional court system. • As a dispute resolution avenue it can be provided both as an extension of the public court system and outside of it. • Increasingly, ODR has received impetus across Government, businesses and even the judicial processes to tide over the constraints due to Covid-19. **Why Do We Need ODR?** The Covid-19 pandemic resulted in a large section of society unable to receive timely access to justice. The pandemic also led to a deluge of disputes further burdening the already lengthy court processes. • ODR has the potential to help reduce the burden on the court and efficiently resolve several categories of cases. • It may also be integrated to support the judiciary through technology integration in court-annexed Alternate Dispute Resolution (ADR) centres, via e-lok adalats and also be introduced within Government departments for internal disputes.
Members of Parliament Local Area Development Scheme (MPLADS)	**Context** The Union Cabinet has restored the Members of Parliament Local Area Development Scheme (MPLADS) that was suspended in April 2020 during the remaining part of Financial Year 2021-22 and to continue MPLADS up to 2025-26, co-terminus with the period of 15th Finance Commission. • Currently, It is a partial rollback. The MPs will get Rs. 2 crore instead of the annual approved Rs. 5 crore. • **Criticism of suspension:** Opposition leaders had pointed out that the Government so far has not given a record of how it spent the savings from suspending the scheme for a year. ***Impact*** • Will restart the community developmental projects / works in the field which are halted / stopped due to lack of funds under MPLADS.

	• Will restart fulfilling the aspirations and developmental requirements of the local community and creation of durable assets, which is the primary objective of the MPLADS. • Help in reviving the local economy. **What is MPLADS (Members of Parliament Local Area Development Scheme) Scheme or Sansad Nidhi Yojana?** • It is a central sector scheme for MPs to recommend works of developmental nature in their constituencies • It was launched in December, 1993 • The emphasis is on creating durable community assets based on locally felt needs. • **Parent Body/Ministry**: Ministry of Statistics and Programme Implementation (MOSPI) • The funds – Rs. 5 crore/annum/MP – under the scheme are non-lapsable. • Funds are released in the form of grants in-aid directly to the district authorities. • MPs have only recommendatory role and the district authority is empowered to examine the eligibility of works, select the implementing agencies and monitor it.
Annual Status of Education Report (ASER) 2021	**Context** Annual Status of Education Report (ASER) 2021 was recently released. • The ASER survey was facilitated by the NGO, Pratham. **Key findings of the report** • Pandemic effect: The percentage of rural children who were not enrolled in school doubled during the pandemic. • Increase in enrolment: Government schools saw an increase in enrolment at the expense of private schools. ○ Government school enrolment spiked significantly from 64.3% in 2018 to 70.3% in 2021, while private school enrolment dropped from 32.5% to 24.4% over the same period. • Reasons for enrolment shift: Financial distress, the closure of affordable private schools and the movement of migrants to rural areas • Never attended school: Over a third of children enrolled in Classes 1 and 2 have never attended school in person. • Lack of learning resources: While 92% of children had textbooks for their grade, only one third of them had access to any other learning resources or support. • Limited smartphone availability: With smartphone availability and access limited, online learning was restricted to a quarter of students. • Varied experiences: 91% of students from Kerala and almost 80% from Himachal Pradesh had online education, but only 10% from Bihar and 13% from West Bengal. • Private tuition: 40% of the school children are now opting for private tuition classes compared to 30% in 2018. This proportion has increased across both sexes and all grades and school types. The incidence of tuition has increased across all States except Kerala. **Suggestions** • Government schools and teachers are equipped and given the necessary resources for this surge in enrolment.



The Global State of Democracy Report, 2021	**Context** The Global State of Democracy Report, 2021 was released. • Released by: International Institute for Democracy and Electoral Assistance Key findings of the report • The number of countries moving towards authoritarianism in 2020 was higher than that of countries going towards democracy. • Democratically elected Governments are increasingly adopting authoritarian tactics. • Brazil and India were highlighted as "some of the most worrying examples of backsliding". ○ India remained in the category of a mid-level performing democracy. • The pandemic has thus had a particularly damaging effect on non-democratic countries.

Andhra Pradesh Decentralisation and Inclusive Development of All Regions Act	**Context** The Andhra Pradesh government passed a Bill to repeal (cancel) the Andhra Pradesh Decentralisation and Inclusive Development of All Regions Act, and the Capital Region Development Authority (CRDA) Repeal Act of 2020.
	Key takeaways
	• More comprehensive legislation will be brought in now.
	• No timeframe has been laid out for the exercise.
	• The repeal was intended to undertake further study and consultations to impart more clarity to the policy of decentralisation.
	Three- capitals
	• Andhra Pradesh had notified the AP Decentralisation and Inclusive Development of All Regions Act, 2020, and the AP Capital Region Development Authority (Repeal) Act, 2020 in July.
	• This law paves the way for three capitals for the state.
	  ○ Amaravati– legislative capital.
	  ○ Visakhapatnam– executive capital.
	  ○ Kurnool– judicial capital.

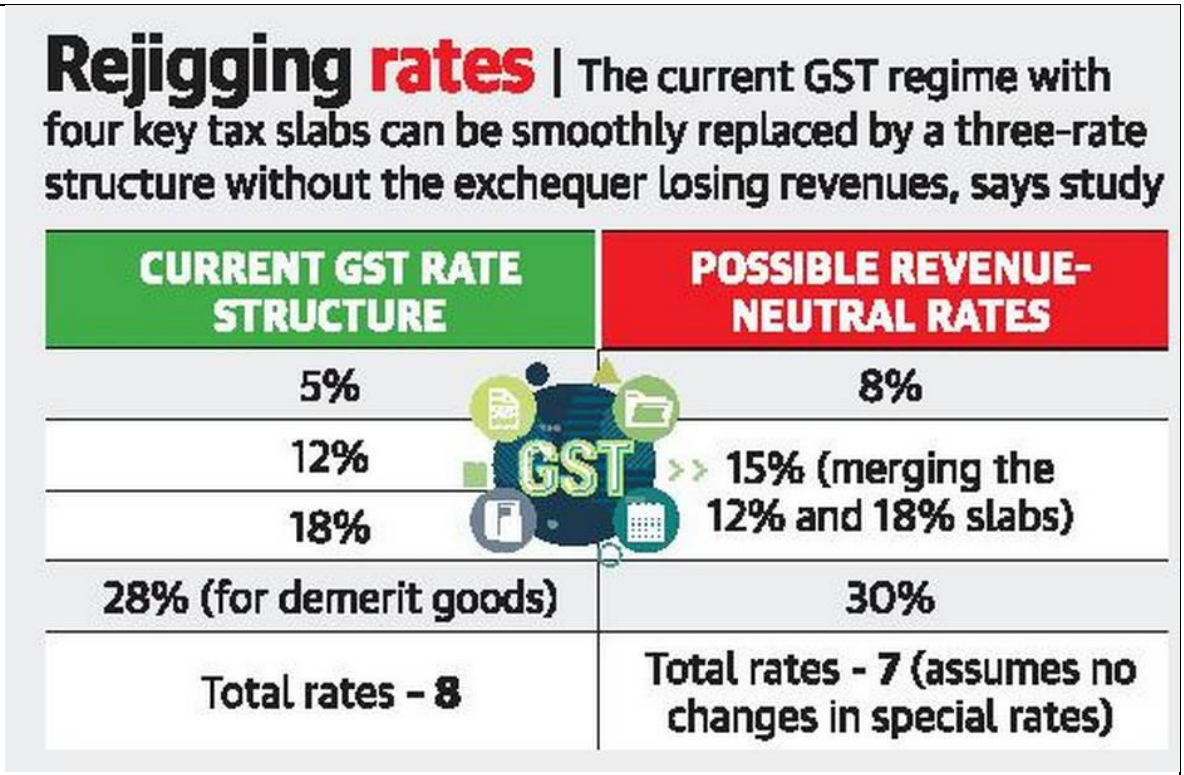
Shrinking of Informal sector in 2020-21	**Context** According to the SBI in a research report, there has been a greater shift towards formalisation of the economy. • The share of the informal sector in overall economic activity has reduced sharply in 2020-21 even as informal workers continue to bear the brunt of the pandemic's adverse effects. • The informal sector consists of "own-account" or unorganised enterprises employing hired workers, with the highest share of such unorganised activity being in agriculture where holdings are small and fragmented. **Key takeaways** • The share of the informal economy may have shrunk to about 20% of the economic output from about 52% in 2017-18. • It has been termed as positive development amid the pandemic. • Besides, an IMF policy paper earlier this year estimated that the share of India's informal economy in the Gross Value Added (GVA) was at 53.9% in 2011-12 and improved only marginally to 52.4% in 2017-18. • As per a National Sample Survey (NSS) of 2014, around 93% of the workforce earned their livelihoods as informal workers.
Amendment to Energy Conservation Act, 2001	**Context**: Amidst the growing energy needs and changing global climate landscape, the Government has identified new areas to achieve higher levels of penetration of Renewable energy by proposing certain Amendments to Energy Conservation Act, 2001. **Objective:** Enhance demand for renewable energy at the end- use sectors such as Industry, buildings, transport etc. **The proposal includes** • Defining minimum share of renewable energy in the overall consumption by the industrial units or any establishment. • There will be provision to incentivise efforts on using clean energy sources by means of carbon saving certificate. The proposed amendments would facilitate development of Carbon market in India and prescribe minimum consumption of renewable energy either as direct consumption or indirect use through grid. This will help in reduction of fossil fuel based energy consumption and carbon emission to the atmosphere. **Background:** • India stands at the forefront of addressing the climate change and has committed to an ambitious Nationally Determined Contributions (NDCs) of reducing emission intensity by 33-35% in 2030 against the levels of 2005. • India is committed to achieve more than 40 percent cumulative electric power installed capacity from non-fossil-fuel energy resources by 2030. • By adopting energy efficiency measures, India holds a potential to reduce about 550 MtCO2 by 2030. • The proposed changes to the EC Act will boost the adoption of clean technologies in various sectors of economy. The provisions would facilitate promotion of green Hydrogen as an alternate to the existing fossil fuels used by the Industries. • The additional incentives in the form of Carbon credits against deployment of clean technologies will result in private sector involvement in climate actions. • The proposal also includes expanding the scope of Act to include larger Residential buildings, with an aim to promote Sustainable Habitat.
RBI issues revised PCA framework for banks	**Context** The RBI has issued a revised Prompt Corrective Action (PCA) framework for banks to enable supervisory intervention and act as a tool for effective market discipline. **About the revised framework:** • The revised PCA framework will be effective from January 1, 2022.

	• Earlier three parameters for monitoring were Capital (Capital Adequacy Ratio), Asset Quality (NPA) and Return on Assets (profit). \Now the three parameters are Capital (Capital Adequacy Ratio), Asset Quality (NPA) and Leverage (equity capital/total assets of bank). • Earlier PCA framework was applicable on all Scheduled Commercial Banks except Regional Rural Banks. Now it is applicable on all Scheduled Commercial Banks except Regional Rural Banks, Payment Banks and Small Finance Banks. **What is Prompt Corrective Action (PCA)?** • Prompt Corrective Action (PCA) is a supervisory framework of RBI where it uses various measures/tools to maintain sound financial health of banks. • Once these parameters cross a certain level RBI puts the bank under PCA. And then it can take discretionary actions against the bank. • Once a bank comes under PCA framework, what actions RBI can take on the bank? • RBI can put restrictions on Branch expansion, distributing dividends, capping compensation and fees of management and directors. • In extreme cases, banks may be stopped from lending and there can be a cap on lending to specific sectors/entities. • May increase the provisioning requirement for banks • Steps can be taken to bring in new management/Board, appoint consultants for organizational structuring, change of ownership, merger of the bank.
RBI panel on ARCs	**Part of:** Prelims and GS-III – Economy Context To streamline the functioning of asset reconstruction companies (ARCs), the Reserve Bank panel has come out with a host of suggestions. **Background:** The RBI had set up a committee headed by Sudarshan Sen to undertake a comprehensive review of the working of asset reconstruction companies (ARCs) in the financial sector ecosystem and recommend suitable measures for enabling them to meet the growing requirements. **Suggestions:** • Create an online platform for the sale of stressed assets. • Allow ARCs to act as resolution applicants during the IBC process. • The scope of Section 5 of the SARFAESI Act be expanded to permit ARCs to acquire financial assets from all regulated entities. • For accounts above ₹500 crore, two bank-approved external valuers should carry out a valuation to determine liquidation value and fair market value. • Also, the final approval of the reserve price should be given by a high-level committee that has the power to approve the corresponding write-off of the loan. **What is an Asset Reconstruction Company (ARC)?** • It is a specialized financial institution that buys the Non Performing Assets (NPAs) from banks and financial institutions so that they can clean up their balance sheets. • Banks rather than going after the defaulters by wasting their time and effort, can sell the bad assets to the ARCs at a mutually agreed value. • This helps banks to concentrate on normal banking activities. • The ARCs are registered under the RBI.
Srinagar declared a 'major airport'	**Context** The Union Ministry of Civil Aviation declared the Srinagar airport a "major airport" under the Airports Economic Authority Act, 2008 (AERA). **Key takeaways** • In exercise of the powers conferred by the Airports Economic Authority Act, 2008, the Central Government has declared the airport of Srinagar as major airport. • The move will allow the AERA to determine the tariff, including the development fee and passenger service fee, for aeronautical services at the Srinagar airport. The Centre

	designates an airport as a major airport if it crosses a particular volume of annual passenger traffic. • Previously, the Airports Authority of India, a body under the Ministry of Civil Aviation, used to determine the tariff for the Srinagar airport. **About Airports Economic Regulatory Authority Act** • The AERA regulates tariffs and other charges for aeronautical services provided at civilian airports with annual traffic above 15 lakh passengers. • It also monitors the performance standard of services across these airports. • Definition of major airports: The Act defines a major airport as one with annual passenger traffic over 15 lakh, or any other airports as notified by the central government. The Bill increases the threshold of annual passenger traffic for major airports to over 35 lakh. • The AERA amendment Bill 2021 also adds that the central government may group airports and notify the group as a major airport. **Tariff determination by AERA: Under the Act, AERA is responsible for determining:** • the tariff for aeronautical services at different airports every five years • the development fees of major airports • the passengers service fee.
FPI and InvITs	**Context** The Reserve Bank on Monday said FPIs had been permitted to invest in debt securities issued by Infrastructure Investment Trusts (InvITs) and Real Estate Investment Trusts (REITs). **Key takeaways** • Necessary amendments to Foreign Exchange Management (Debt Instruments) Regulations, 2019, had been notified in October so that debt financing of InvITs and REITs by Foreign Portfolio Investors (FPIs) could be enabled. • "FPIs can acquire debt securities issued by InvITs and REITs under the Medium-Term Framework (MTF) or the Voluntary Retention Route (VRR) • Such investments shall be reckoned within the limits and shall be subject to the terms and conditions for investments by FPIs in debt securities under the respective regulations. About Foreign Portfolio Investment • Foreign portfolio investment (FPI) consists of securities and other financial assets passively held by foreign investors. • It does not provide the investor with direct ownership of financial assets • Examples: Stocks, bonds, mutual funds, exchange traded funds, American Depositary Receipts (ADRs), and Global Depositary Receipts (GDRs). • FPI and FDI are both important sources of funding for most economies. • FPI is part of a country's capital account and is shown on its Balance of Payments (BOP). • FPI is more liquid and less risky than FDI. **What are Infrastructure Investment Trusts?** • InvITs are instruments that work like mutual funds. • They are designed to pool small sums of money from a number of investors to invest in assets that give cash flow over a period of time. Part of this cash flow would be distributed as dividend back to investors. • InvITs are listed on exchanges just like stocks — through IPOs. The InvITs listed on the stock exchange are IRB InvIT Fund and India Grid Trust. • InvITs are regulated by the Securities and Exchange Board of India (SEBI) (Infrastructure Investment Trusts) Regulations, 2014. • Real Estate Investment Trusts (REITs) are similar to InvITs but they are present only in Real estate sector.
LEADS Report 2021	Context Recently, the Ministry of Commerce and Industry has released the Logistics Ease Across Different States (LEADS) Report (Index) 2021.

	About LEADS Report • The LEADS report is aimed at gauging the logistics performance of states and Union Territories (UT) and identifying areas where they can improve logistics performance. • It was launched in 2018. • States are ranked based on quality and capacity of key infrastructure such as road, rail and warehousing and on operational ease of logistics **Ranking of States** • Top Performers: Gujarat, Haryana and Punjab. This is the third year in a row that Gujarat remained on top of the rankings. • Delhi stands at the top rank among Other UTs. • North Eastern States and Himalayan Region: Jammu and Kashmir followed by Sikkim and Meghalaya.
Duare Ration scheme	**Context** West Bengal Chief Minister recently launched an ambitious "Duare Ration" scheme for providing foodgrains under the public distribution system at the doorstep for the entire population. **Features of the scheme** • The scheme will help 10 crore people of the State. • The commission for ration dealers from Rs 75 to Rs 150 per quintal of food grains. • The government would provide around 21,000 ration dealers with financial assistance of Rs 1 lakh each to purchase vehicles for delivering ration to people • A WhatsApp chatbot was inaugurated for the Food and Supplies Department of the state government and a mobile application, "Khadya Sathi: Amar Ration Mobile App" to help people apply for ration cards and get information about how to do it. • A programme was also inaugurated for portability of ration cards using which people would be able to get ration from any shop anywhere in the state.
Sustainable Urban Services Program for Chennai Metropolitan Area (CMA)	• India is the largest beneficiary of AIIB and the bank has so far approved 29 projects for India worth 6.8 billion USD. • The energy and transport sectors have received the highest amount of AIIB's financing. • About Chennai Metropolitan Area project • The Chennai Metropolitan Area (CMA) is home to around 11 million people and one of the fastest growing metropolitan areas in Asia with its growing economic significance in India. • Aim: Strengthening institutions and financing for improving the quality and sustainability of selected urban services in the CMA. • Services being covered: Core urban services, including water resource management, water supply and sewerage, solid waste management. • Funds: The total project cost is 701 million USD out of which AIIB and World Bank each will provide 150 million USD each. Rest of the cost will be borne by the Govt. of Tamil Nadu.
Pradhan Mantri Awaas Yojana – Gramin	**In News:** Pradhan Mantri Awaas Yojana – Gramin completes 5 years • The Pradhan Mantri Awaas Yojana – Gramin (PMAY-G) is one of the flagship programmes of the Government of India which is driven by the noble objective of providing "Housing for All" by the year 2022. • It is a social welfare program through which the Government provides financial assistance to houseless beneficiaries identified using SECC 2011 data to help them construct a house of respectable quality for their personal living. • The Scheme envisaged constructing 2.95 crore PMAY-G houses with all basic amenities by the year 2021-22. • The scheme envisioned providing other facilities to make it an aspirational home for the beneficiaries through convergence with other schemes like Swachh Bharat Mission, PM Ujjwala Yojana for providing LPG connection and unskilled wage component of 90-95 days under MGNREGS.

Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY)	**Context** The central government has decided to extend the Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY) until March 2022. **What is Pradhan Mantri Garib Kalyan Anna Yojana?** ● Forms a part of Atmanirbhar Bharat to supply free food grains to migrants and the poor. ● 5 kg free wheat/rice per person / month along with 1 kg free whole chana to each family per month. ● Wheat has been allocated to 6 States/UTs, - Punjab, Haryana, Rajasthan, Chandigarh, Delhi and Gujarat. ○ Rice has been provided to the remaining States/UTs. ● This is over and above the regular monthly entitlements under National Food Security Act, 2013 (NFSA). ● Beneficiaries include Antyodaya Anna Yojana (AAY) and Priority Household (PHH) cardholders.
Full-stack 'digital banks'	**Context** NITI Aayog recently proposed setting up of full-stack 'digital banks'. ● Such banks would principally rely on the Internet and other immediate channels to offer their services and not physical branches. ● The proposal was made to mitigate the financial deepening challenges being faced in the country. ● Such Digital banks will issue deposits, make loans and offer the full suite of services that the Banking Regulation Act empowers them to.
Three-rate GST structure	**Context** As per a National Institute of Public Finance and Policy (NIPFP) study, the Government can rationalise the GST rate structure without losing revenues by rearranging the four major GST rates (5%, 12%, 18% and 28%) with a three-rate framework of 8%, 15% and 30%. ● The NIPFP is an autonomous think tank backed by the Finance Ministry. **Significance of the study** ● The GST Council has tasked a Group of Ministers, headed by Karnataka CM to propose a rationalisation of tax rates and a possible merger of different tax slabs by December to shore up revenues. ● The NIPFP paper also notes that raising rates on 'high-value low volume goods' like precious stones and jewellery 'may encourage undisclosed transactions and revenue leakages. **Current rate structure** ● GST is levied at four rates - 5%, 12%, 18% and 28%. ● The list of items that would fall under these multiple slabs are worked out by the GST council. ● Further, the tax on gold is kept at 3%. Rough precious and semi-precious stones are placed at 0.25% under GST. **What is the Goods and Services Tax (GST)?** ● Value-added tax levied on most goods and services sold for domestic consumption. ● It was launched on 1st July 2017. ● It subsumed almost all domestic indirect taxes under one head. ● Paid by consumers, but it is remitted to the government by the businesses selling the goods and services. ● The GST to be levied by the Centre is called **Central GST** (CGST) and that to be levied by the States is called **State GST** (SGST). ● **Integrated Goods & Services Tax (IGST):** Inter-State Import of goods or services ● **GST Council**: Constitutional body (Article 279A) for making recommendations to the Union and State Government on issues related to GST.



Production Linked Incentive (PLI) scheme for the Pharmaceutical Sector

In News: The PLI Scheme for Pharmaceuticals is based on the strategy of "Atmanirbhar Bharat-Strategies for enhancing India's manufacturing capabilities and enhancing exports in ten sectors", which had been approved by the Union Cabinet.

Objectives

- To enhance India's manufacturing capabilities by increasing investment and production in the sector and contributing to product diversification to high value goods in the pharmaceutical sector.
- To create global champions out of India who have the potential to grow in size and scale using cutting edge technology and thereby penetrate the global value chains.

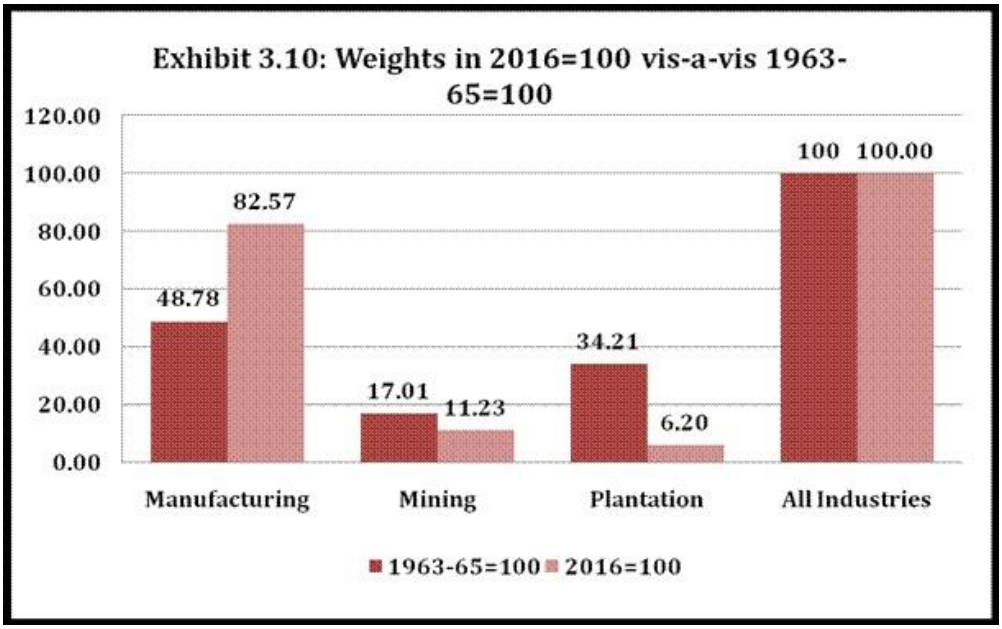
About the Scheme

The Scheme is expected to bring in investment of Rs.15,000 crore in the pharmaceutical sector.

- It will be part of the umbrella scheme for the Development of the Pharmaceutical Industry.
- **Objective:** (1) To enhance India's manufacturing capabilities by increasing investment; (2) Product diversification to include high-value goods.
- **Target Groups**: The manufacturers who are registered in India will be grouped based on their Global Manufacturing Revenue (GMR) to ensure wider applicability of the scheme
- **Quantum of Incentive**: 15,000 crores.
- **Category of Goods covered**:
    1. **Category 1**: Biopharmaceuticals; Complex generic drugs; Patented drugs or drugs nearing patent expiry; Cell-based or gene therapy drugs; Orphan drugs; Other drugs as approved.
    2. **Category 2**: Active Pharmaceutical Ingredients, Key Starting Materials, Drug Intermediates.
    3. **Category 3**: Drugs not covered under Category 1 and 2.

WAGE RATE INDEX (WRI)

Context: As per the recommendations of International Labour Organization (ILO), National Statistical Commission (NSC), Government has recently released the new series of Wage Rate Index (WRI) with base year 2016=100, being **compiled and maintained by Labour Bureau**, an attached office of Ministry of Labour & Employment.



Key Highlights

- New series that replaces the old series (1963-65=100) which is almost six decades old, has increased the scope and coverage in terms of number of industries, sample size, occupations under selected industries, weightage of industries etc.
- A total of 37 industries have been covered in the new WRI basket (2016=100) as against 21 industries in the 1963-65=100 series.
- The selected 37 industries in the new series are categorized as 30 industries from Manufacturing sector, 4 industries from Mining Sector and 3 industries from Plantation Sector as compared to 14 industries from Manufacturing sector, 4 industries from Mining Sector and 3 industries from Plantation Sector in the old series.
- In the new WRI basket, the current wage data has been collected from 2881 units under 37 selected industries as against to 1256 units under 21 industries in the old series of WRI.
- About 700 occupations have been covered under 37 selected industries in new series of WRI (2016=100).
- Sixteen new Manufacturing Industries have been added in the new series of WRI basket, viz. Synthetic Textiles, Textile Garments, Printing and Publishing, Footwear, Petroleum, Chemical & Gases, fertilizers, Drugs & Medicines, Iron & Steel, Electrical Apparatus, Motor Vehicles, Motor Cycles, Tea Processing, Tyres & Tubes, Milk Products and Plastic Articles.
- The new series will play a very critical role in coming out with the **Minimum Wages & National Floor Wages** along with other parameters which will be decided in due course of time by the Expert Group.
- This will serve as a useful reference book for researchers, academicians, scholars and all other stakeholders of WRI.

National Multidimensional Poverty Index

In News: The National MPI Project is aimed at deconstructing the Global MPI and creating a globally aligned and yet customised India MPI for drawing up comprehensive Reform Action Plans with the larger goal of improving India's position in the Global MPI rankings.

- Under the Cabinet Secretary's Global Indices for Reforms and Growth (GIRG) initiative, the country's performance is being monitored across 29 global indices including Human Development Index (HDI), Global Hunger Index (GHI), Global Competitiveness Index (GCI), Human Capital Index (HCI), Global Innovation Index (GII), among others.
- This exercise is aimed at leveraging the monitoring mechanism of important social, economic, and other internationally recognised indices, enabling the utilisation of

	these indices as tools for bringing about reforms to improve outcomes and correspondingly reflect them in India's performance in these indices globally. • NITI Aayog is the nodal Ministry for the Multidimensional Poverty Index (MPI). According to Global MPI 2021, India's rank is 66 out of 109 countries. ***Preliminary observations from the summary data factsheets of NFHS 5 (2019-20) are encouraging.*** • They suggest improvement in access to clean cooking fuel, sanitation, and electricity which translates to reduction in deprivation. • Additionally, the State reports released for 22 States and UTs suggest reduction in deprivation in school attendance, drinking water, bank accounts and housing. • These improvements indicate an overall direction of significant reduction in the incidence of multidimensional poverty in the forthcoming index based on NFHS 5 (2019-20) household micro data.
Development Projects for Civil aviation	• Taken up developmental projects worth around Rs. 25,000 crores over the next five years for expansion and modification of existing terminals, new terminals, expansion or strengthening of existing runways, aprons, air navigation services, control towers, technical blocks etc. • Three Public Private Partnership (PPP) airports at Delhi, Hyderabad and Bengaluru • Around Rs. 36,000 Crores have been planned for investment in the development of new greenfield airports across the country under PPP mode. • GoI has accorded 'in-principle' approval for setting up of 21 greenfield airports across the country. So far, eight greenfield airports namely, Shirdi in Maharashtra, Durgapur in West Bengal, Pakyong in Sikkim, Kannur in Kerala, Orvakal in Andhra Pradesh, Kalaburagi in Karnataka, Sindhudurg in Maharashtra and Kushinagar in Uttar Pradesh have been operationalized. • Under Regional Connectivity Scheme (RCS), also known as the Ude Desh ka Aam Nagrik (UDAN) Scheme, 393 routes have commenced connecting 62 unserved and underserved airports, including 2 water aerodromes and 6 heliports.

Incentives for sugar cane, cotton, jute farmers	**Context** The Cabinet Committee on Economic Affairs (CCEA) has approved a slew of measures that will support farmers growing sugar cane, cotton and jute.
	Key takeaways
	• The CCEA increased the price of ethanol extracted from sugar cane juice for blending in petrol. Ethanol blending with petrol is expected to reach 10% next year and 20% by 2025.
	• The rate for ethanol extracted from C-heavy molasses has also been increased.
	• Oil marketing companies buy ethanol from sugar mills and distilleries at the rate set by the Government.
	• Implication of the hike:. The rate hike is expected to reduce pending arrears of the mills in payment to sugar cane farmers.
	  ○ The ethanol blending programme also reduced the dependence on crude oil imports.
	Price support to CCI
	• The CCEA also approved a committed price support of Rs. 17,408.85 crore to the Cotton Corporation of India (CCI) as reimbursement for its losses in procuring crops from farmers at minimum support prices (MSP) over the past seven years.
	• Function of CCI: The CCI is mandated to procure all Fair Average Quality grade cotton from farmers without any quantitative ceiling, as and when prices follow below the MSP rates set by the Centre, in a bid to protect farmers from distress sales.
	  ○ Over the last two seasons during the pandemic, the CCI procured a third of the country's cotton production, paying 40 lakh farmers more than Rs. 55,000 crore.

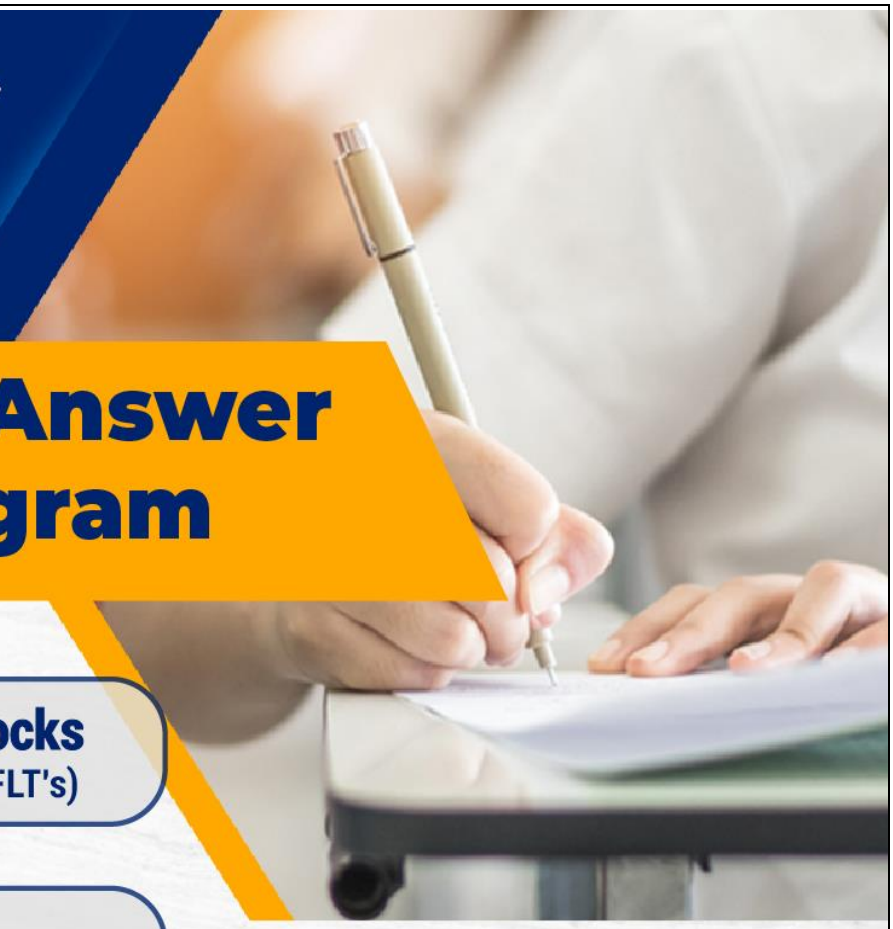
	Reservation norms for Jute in packaging • The CCEA also approved reservation norms for the mandatory use of jute in packaging this year, stipulating that 100% of foodgrains and 20% of sugar must compulsorily be packed in jute bags. • Such reservation consumed two-thirds of the total raw jute production last year. • Support to farmers: As the Centre itself purchases jute sacking bags worth approximately Rs. 8,000 crore a year to pack grains, it also ensures a guaranteed market for the produce of 40 lakh jute farmers, mostly in eastern India, and supports 3.7 lakh jute mill workers, largely in West Bengal.
Nutrition Smart Village	**In News:** Government has launched a Nutrition Smart Village program. Aims to reach out to 75 villages across India through the network of All India Coordinated Research Project on Women in Agriculture (AICRP-WIA) which is in operation at 13 centres in 12 States of India to strengthen the Poshan Abhiyan – Malnutrition free villages • Promoting nutritional awareness, education and behavioural change in rural areas involving farm women and school children, • Harnessing traditional knowledge through the local recipe to overcome malnutrition • Implementing nutrition-sensitive agriculture through homestead agriculture and Nutri-garden • Awareness among the women farmers will also be created about their legal rights in all walks of life.
Chennai-Bengaluru road project	**Context** The Expert Appraisal Committee of the Environment Ministry has recommended phase-III of the eight-lane expressway between Chennai and Bengaluru for environment clearance. **Key takeaways** • Implemented by: National Highways Authority of India (NHAI). • It passes through Chittoor district of Andhra Pradesh and Vellore, Ranipet, Kancheepuram and Tiruvallur districts of Tamil Nadu. **Objective:** The project is meant to improve connectivity between Bengaluru and Chennai It would also act as a link between the major commercial and industrial centres of Karnataka, Andhra Pradesh and Tamil Nadu • One animal underpass has also been proposed on the Forest Department's recommendation **About Expert Appraisal Committee (EAC) of the Environment Ministry** • The EACs' primary role in the environmental clearance (EC) process is to give recommendations to the Ministry of Environment, Forest and Climate Change (MoEFCC) on project proposals after considering the potential impacts of the project. • Based on these recommendations, the MoEFCC either rejects the proposal or grants a clearance with conditions which would mitigate the impacts or compensate for the same.
Monetary disbursement to States to sustain recovery	**Context** The Centre will remit Rs. 95,082 crore to States next week, which is double the funds due to them from the shareable pool of taxes to enable them to deploy more money on capital spending. **Key takeaways** • A meeting was held between the states and the Central government to figure out ways to sustain the economic recovery after the second COVID-19 wave and understand States' concerns and plans • The context of the meeting: After the second wave, India is seeing a robust growth. However, it's also a time where it plans to sustain the growth, take it as close as possible to a double-digit growth for which the Centre and States have to work together. **Suggested methods to achieve growth** • States were urged to help India become the fastest growing economy in coming years.

	• Methods suggested
	  ○ Facilitating investment attractiveness
	  ○ Expediting ease of doing business measures
	  ○ Undertaking power sector reforms.
	  ○ Smoothen land acquisition
	  ○ Create land banks for investors
	  ○ Monetisation of public assets

USOF scheme	**In News:** The Union Cabinet has given its approval for provisioning of mobile services in Uncovered Villages of Aspirational Districts across five States of Andhra Pradesh, Chhattisgarh, Jharkhand, Maharashtra & Odisha. • The Project envisages to provide 4G based mobile services in the 7,287 uncovered villages of 44 Aspirational Districts across five States of Andhra Pradesh, Chhattisgarh, Jharkhand, Maharashtra & Odisha • The project would be funded by Universal Service Obligation Fund (USOF) • The work related to provision of 4G mobile services in identified uncovered villages will be awarded through open competitive bidding process as per extant USOF procedures. **Key benefits:** • Enhance digital connectivity useful for self-reliance, • Facilitate learning, • Dissemination of information and knowledge, • Skill upgradation and development, • Disaster management, • E-Governance initiatives, • Establishment of enterprises & e-commerce facilities, • Provision of adequate support to educational institutes for knowledge sharing • Availability of job opportunity • Fulfilling the vision of Digital India promoting domestic manufacturing • Fulfilling the objectives of Atmanirbhar Bharat

All-India Survey on Domestic Workers	**Context** The first All-India Survey on Domestic Workers was launched recently.
	• Ministry: Labour and Employment Ministry
	• First-of-its-kind survey in India
	Key takeaways
	• The survey would be completed in a year.
	• Carried out by: Labour Bureau
	• Aim:
	  ○ Estimating the number of domestic workers at the national and State levels
	  ○ Those engaged in informal employment
	  ○ Migrant and non-migrant workers
	  ○ Domestic workers staying at their employers' homes and those who do not; their wages
	• Broad parameters to be covered:
	  ○ Household Characteristics such as HH size, Religion, Social Group.
	  ○ Demographic Characteristics such as Name, Age,
	  ○ Age of entry, Social Group, Migrant status, Vocational Training/Education
	  ○ Information on Employer Households

IAS BABA



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Climate Equity Monitor	**Context:** India has officially endorsed a website, Climate Equity Monitor, made by Indian climate experts. • The website lists the historical carbon dioxide emissions of developed countries. • The website was conceptualised and developed by the Climate Change Group at the M.S. Swaminathan Research Foundation, Chennai, and the Natural Sciences and Engineering Department at the National Institute of Advanced Studies, Bengaluru, with other independent researchers. **Key takeaways** • It is aimed at monitoring the performance of Annex-I Parties under the UNFCCC (developed countries) based on the "foundational principles" of the Climate Convention. • It aims to highlight the disparity between the emissions of developed and developing countries. • Countries such as the USA, Canada and Australia and those in Western Europe are shown as having a net carbon debt while developing countries such as India and China have net credit. • It highlights that it is only fair that developed countries must commit to steeper targets towards curbing emissions than developing countries. **Implications:** • Its focus on equity & climate action from a data and evidence-based perspective will encourage vigorous discussion on the crucial issue and engage experts from all nations. • The website shall debunk the narrative provided by many developed countries, and global NGOs that focus attention continually on what developing countries must do, constantly demanding greater commitment and action from them. **Status of India as Carbon emitter** • India is the third largest emitter of carbon emissions annually but the sixth largest when historical emissions are considered. • When accounting for the size of its population it is among the lowest per capita emitters. This underlines India's demands for climate justice being at the heart of negotiations at COP26 and its reluctance to agree to a fixed time frame.
Census of Indus River dolphin	**Context** The census of one of the world's most threatened cetaceans, the Indus river dolphin (Platanista gangetica minor) — is all set to commence as part of the Centre's pan-India project. • Punjab's wildlife preservation wing shall also protect the dolphins and their natural habitat. • The project is to be implemented over five years. Key takeaways • **Engage the community:** Alongside research, importance will be on engaging the riparian (relating to wetlands adjacent to rivers and streams) communities by encouraging community-led biological monitoring. • **Model villages:** Villages around the hot spot sites of dolphin occurrence will be developed as models for community-led conservation. • **'Beas-Dolphin Mitras:** Extension programmes will be held to develop a group of dedicated individuals, called 'Beas-Dolphin Mitras' of the river Beas. • **Dolphin eco tourism:** The project also will embark on dolphin eco tourism. • **Adopting participatory process:** Participatory process shall be adopted to address various water conservation-related issues, including protection of freshwater habitats and species **About Indus dolphin** • It is a freshwater dolphin

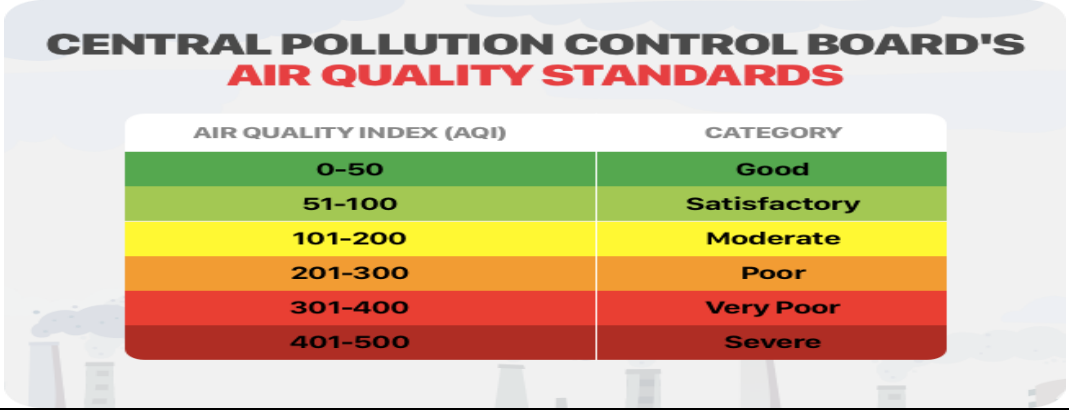
	• IUCN status: Endangered • Until recently, it was believed that these dolphins were endemic to Pakistan. • But in 2007, a remnant but viable population of Indus dolphins was discovered in Punjab's Harike wildlife sanctuary and in the lower Beas river. • Since its discovery, research is being done by Punjab's Department of Forests and Wildlife Preservation in partnership with WWF-India providing an understanding of current distribution, habitat use and population abundance. • Indus river dolphin was declared the **State aquatic animal of Punjab in 2019**.
UNESCO World Heritage Forests	**Context** As per UNESCO's assessment on World Heritage forests, India's Sundarbans National Park is among five sites that have the highest blue carbon stocks globally. **Key findings of the new study** • It is the first ever scientific assessment of the amounts of greenhouse gases emitted from and absorbed by forests in UNESCO World Heritage sites during 2001 and 2020. • The assessment involved the researchers from UNESCO, World Resources Institute (WRI) and the International Union for Conservation of Nature (IUCN). • As a whole, UNESCO World Heritage forests in 257 separate sites, absorbed the equivalent of approximately 190 million tons of CO2 from the atmosphere each year. • However, ten forests released more carbon than they sequestered due to pressure from human activity and climate change, which is alarming. • They also store substantial amounts of carbon. • The study described blue carbon as organic carbon that is mainly obtained from decaying plant leaves, wood, roots and animals and is captured and stored by coastal and marine ecosystems. **Factors responsible for this emission** • According to UNESCO's findings, at some sites the clearance of land for agriculture caused emissions to be greater than sequestration. • The increasing scale and severity of wildfires, often linked to severe periods of drought, was also a predominant factor in several cases. • Other extreme weather phenomena, such as hurricanes contributed at certain sites. • World Heritage forests • As of today, more than 200 World Heritage sites harbor unique forest ecosystems. • World Heritage forests, whose combined area of 69 million hectares is roughly twice the size of Germany, are biodiversity-rich ecosystems.
Climate Equity Monitor	An online dashboard for assessing, at the international level, equity in climate action, inequalities in emissions, energy and resource consumption across the world, goes LIVE. • Its focus on equity and climate action from a data and evidence-based perspective will encourage a vigorous discussion on this crucial issue and engage experts from all countries. • The equitable sharing of the global carbon budget is the fundamental equity principle that will underpin the assessments that will progressively appear on the website. • Aimed at monitoring the performance of Annex-I Parties under the UNFCCC (developed countries) based on the foundational principles of the Climate Convention, namely equity and the principle of common but differentiated responsibilities and respective capabilities (CBDR-RC). The performance and policies of the Non Annex-I Parties (developing countries) will be also provided for comparison. • The website is expected to be a valuable tool for policy makers, public institutions, researchers, academics, students, and the general public from developing countries to keep equity and climate justice considerations clearly in view in their perspective.
India to achieve net zero emissions by 2070	**Context** Indian Prime Minister said at the COP26 summit in Glasgow that India will achieve net zero emissions latest by 2070. **Key takeaways**

	• By 2030, India will ensure 50% of its energy will be sourced from renewable energy sources. • India will reduce its carbon emissions by 2030 by a billion tonnes. • India will also reduce its emissions intensity per unit of GDP by less than 45%. • India also emphasised that in the spirit of climate justice, rich developed countries ought to be providing at least $1 trillion in climate finance to assist developing countries and those most vulnerable. • Climate adaptation must be given importance too. • Criticism: According to several experts, Taking on net zero targets requires a sharp shift to clean energy sources that will impose a steep cost. **What is COP26?** • The Conference of Parties (COP) comes under the United Nations Climate Change Framework Convention (UNFCCC) which was formed in 1994. • 2021 marks the 26th Conference of Parties (thus the name COP26) and will be held in the Scottish Event Campus in Glasgow. • The UNFCCC was established to work towards "stabilisation of greenhouse gas concentrations in the atmosphere." • It laid out a list of responsibilities for the member states which included: • Formulating measures to mitigate climate change • Cooperating in preparing for adaptation to the impact of climate change • Promoting education, training and public awareness related to climate change • India hosted the eighth COP from October 23 to November 1, 2002 in New Delhi. • One of the most important conferences, COP21 took place in 2015, at Paris, France. Member countries agreed to work together to 'limit global warming to well below 2, preferably to 1.5 degrees Celsius, compared to pre-industrial levels.'
Climate vulnerability index released by CEEW	**Context** Environmental think tank Council on Energy, Environment and Water has carried out a first-of-its-kind district-level climate vulnerability assessment, or Climate Vulnerability Index (CVI). • Under this, it has analysed 640 districts in India to assess their vulnerability to extreme weather events such as cyclones, floods, heatwaves, droughts, etc. **Findings of the climate vulnerability index** • Vulnerable to extreme climate events: Assam, Andhra Pradesh, Maharashtra, Karnataka and Bihar are most vulnerable to extreme climate events such as floods, droughts and cyclones in India. • India's most climate vulnerable districts: Dhemaji and Nagaon in Assam, Khammam in Telangana, Gajapati in Odisha, Vizianagaram in Andhra Pradesh, Sangli in Maharashtra, and Chennai in Tamil Nadu • More than 80% Indians live in districts vulnerable to climate risks • North-eastern states are more vulnerable to floods.

PM's Address: 'Action and Solidarity-The Critical Decade' at COP26 Summit	Adaptation does not get as much importance in the Global climate debate as Mitigation. This is an injustice to developing countries, which are more affected by climate change.
	• Climate is a major challenge for **farmers in most developing countries**, including India –
	  ○ The cropping pattern is changing,
	  ○ Crops are being destroyed by untimely rains and floods, or frequent storms
	• From drinking water sources to affordable housing, all of these need to be made resilient against climate change.
	
	Focus on Adaptation: We need to make adaptation a key part of our development policies and projects. Projects like 'Nal se Jal'- Tap water for all, 'Swachh Bharat'- clean India Mission and 'Ujjwala'- clean cooking fuel for all in India, have not only provided adaptation benefits to our needy citizens but have also improved their quality of life.

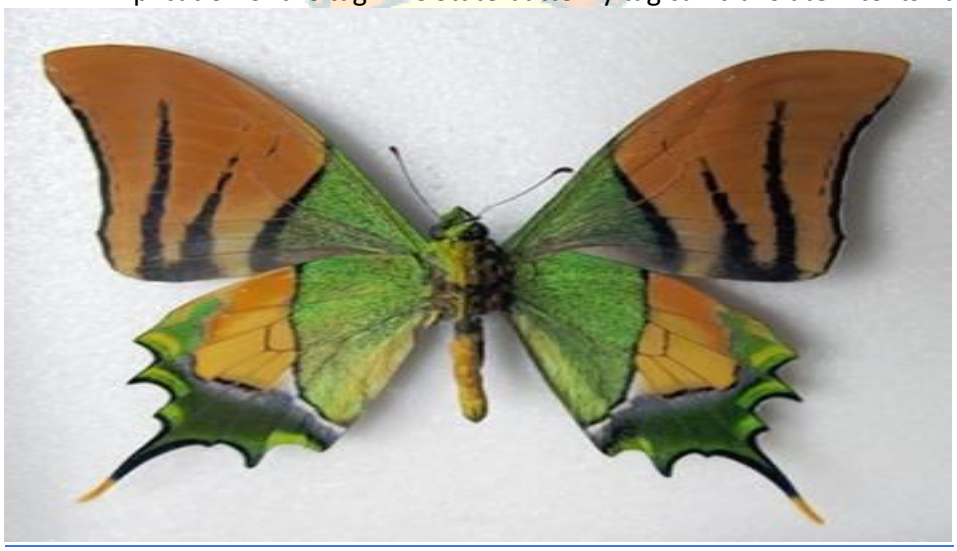
	Living in harmony with nature: Secondly, many traditional communities have adequate knowledge of living in harmony with nature. • These traditional practices must be given due importance in our adaptation policies. • This flow of knowledge must also be included in the **school syllabus** so that it is passed on to the new generation. • Preservation of lifestyles in compliance with the local conditions can also be an important pillar of adaptation. **Method of Adaptation:** The methods of adaptation may be local, but backward countries should get global support for them. With the idea of global support for local adaptation, India had taken the initiative of Coalition for Disaster Resilient Infrastructure CDRI.
COP26	**Context** Leaders at the COP26 global climate conference in Glasgow have pledged to stop deforestation by the end of the decade and slash emissions of the potent greenhouse gas methane to help slow climate change. • Fossil fuels: They have been unable to agree more broadly on rapid reductions in the use of fossil fuels which has upset the poorer, smaller countries likely to suffer its worst effects. • Methane emission: Nearly 90 countries have joined a U.S.-EU-led effort to slash emissions of methane 30% by 2030 from 2020 levels. • Deforestation and land degradation: Over 100 national leaders pledged to halt and reverse deforestation and land degradation by the end of the decade, underpinned by $19 billion in public and private funds to invest in protecting and restoring forests. Hike in climate finance • At the Ministerial meeting of Like-Minded Developing Countries (LMDC), India said that climate finance cannot continue at the levels decided in 2009 • It emphasised that it should be at least $1 trillion to meet the goals of addressing climate change. **What is COP26?** • The Conference of Parties (COP) comes under the United Nations Climate Change Framework Convention (UNFCCC) which was formed in 1994. • 2021 marks the 26th Conference of Parties (thus the name COP26) and will be held in the Scottish Event Campus in Glasgow. • The UNFCCC was established to work towards "stabilisation of greenhouse gas concentrations in the atmosphere." It laid out a list of responsibilities for the member states which included: • Formulating measures to mitigate climate change • Cooperating in preparing for adaptation to the impact of climate change • Promoting education, training and public awareness related to climate change • One of the most important conferences, COP21 took place in 2015, at Paris, France. Member countries agreed to work together to 'limit global warming to well below 2, preferably to 1.5 degrees Celsius, compared to pre-industrial levels.'
Green Grids Initiative: One Sun, One World, One Grid	**Context** Green Grids Initiative As part of One Sun, One World, One Grid initiative was announced by India and the United Kingdom at COP26 to tap solar energy and have it travel seamlessly across borders. • The objective included trading energy from sun, wind and water across borders to deliver more than enough clean energy to meet the needs of everyone on earth. **Key takeaways** • The initiative was endorsed by more than 80 countries. • The ISRO has developed an application that could compute the potential solar energy at any point on earth and help decide if it would be suitable for solar energy installations.

	• A Ministerial Steering Group will work towards accelerating the making of large solar power stations and wind farms in the best locations, linked together by continental-scale grids crossing national borders. • The Ministerial Steering Group includes France, India, the United Kingdom and the United States, and will also have representatives from Africa, the Gulf, Latin America and Southeast Asia.
T.N. Forest and Wildlife Crime Control Bureau	**Context** The Tamil Nadu State Government has issued orders for setting up the Tamil Nadu Forest and Wildlife Crime Control Bureau (TNFWCB) with four zonal offices in Chennai, Coimbatore, Madurai and Ramanathapuram. **Key takeaways** • **Committee formed:** It constituted a committee for formulating a draft policy on ecological restoration of forest areas infested with invasive plant species. • The panel would also identify, demarcate and assess the extent of area infested with invasive alien species and formulate a Standard Operating Procedure for removal, disposal and eco-restoration of infested areas. • **State-wide data:** The TNFWCB shall develop and maintain State-wide data on forest and wildlife offences, forest offenders and wildlife smuggling incidences. • **Use of IT practices:** It would use information technology practices and forest and wildlife crime information in conjunction with various intelligence agencies which will help in better adaptation to changing crime and criminal practices. • **Cadre of well-trained officials:** The Bureau is expected to create a cadre of well-trained officials from among government departments for effective monitoring of illegal trade. **Objectives of the TNFWCB** • Improving investigation quality for better control of illegal wildlife trade • Building informant networks among local communities • Mapping poaching and illegal trade hotspots in the State for better action. **Introduction of exotic tree species** • Most of the exotic tree species like wattle, pine and eucalyptus were introduced in forest areas of Tamil Nadu to satisfy industrial/commercial needs. • However, they have had an adverse impact on the ecology of the area, such as modifying/affecting hydrology, forest/grassland community and wildlife. • The non-native species suppressed native species by disrupting the food web in an ecosystem by restricting or replacing native food sources • The invasion was regarded as one of the major threats to biodiversity
Infrastructure for Resilient Island States	**Context:** Prime Minister launched of 'Infrastructure for Resilient Island States' initiative at COP26 Summit in Glasgow **Infrastructure for Resilient Island States:** mall Island Developing States –SIDS- will mobilize technology, finance, and necessary information rapidly. Promotion of quality infrastructure in Small Island States will benefit both lives and livelihoods there. **Significance:** The biggest threat from climate change is to the 'Small Island Developing States-SIDS'. In such countries, climate change is a major challenge not only for the security of their lives, but also for their economies. Such countries depend a lot on tourism, but due to natural calamities, even tourists are afraid to come there. **Background:** Sensing the threat of Climate Change looming over small island countries, India made special arrangements for cooperation with Pacific islands and CARICOM nations. • Trained their citizens in solar technologies, and contributed continuously to the development of infrastructure there. • India's space agency, ISRO will build a special data window for SIDS. With this, SIDS will continue to receive timely information about cyclones, coral-reef monitoring, coast-line monitoring, etc. through satellite.

	• The IRIS initiative is a part of the Coalition for Disaster Resilient infrastructure that would focus on building capacity, having pilot projects, especially in small island developing states. • The new initiative is the result of cooperation between India, the UK and Australia and included the participation of leaders of small island nations Fiji, Jamaica and Mauritius.
Delhi's poor air quality	**Context** As per Central Pollution Control Board (CPCB) data, Delhi's air quality entered the "severe" category recently for the first time this season after people in the city burst firecrackers on Deepavali night despite a blanket ban. • The Capital registered its worst post-Deepavali air quality in five years. The AQI (air quality index) of Delhi this season is 533. In 2016, it was 445 around the same time. It was 368 in 2019. • According to SAFAR, without any more firecracker emissions the AQI is likely to improve to "very poor" category by Saturday night. **What is System of Air Quality and Weather Forecasting and Research (SAFAR)?** • It was indigenously developed by Indian Institute of Tropical Meteorology, Pune. • It is run by India Meteorological Department (IMD). • The objective is to provide Real-time air quality index on 24×7 basis with colour coding along with 72-hour advance weather forecast. • Another goal is to issue health advisory to prepare citizens well in advance. **What is the National Air Quality Index?** • Launched in 2014 with outline 'One Number – One Color -One Description' for the common man to judge the air quality within his vicinity • The measurement of air quality is based on eight pollutants: Particulate Matter (PM10), PM2.5, Nitrogen Dioxide (NO_2), Sulphur Dioxide (SO_2), Carbon Monoxide (CO), Ozone (O_3), Ammonia (NH_3), and Lead (Pb). • AQI has six categories of air quality: Good, Satisfactory, Moderately Polluted, Poor, Very Poor and Severe. • It has been developed by the CPCB in consultation with IIT-Kanpur and an expert group comprising medical and air-quality professionals. 
Stubble burning	**Context** One of the largest studies of its kind in India, correlating the effect of air pollution on health, was conducted in six villages of Patiala, Punjab in two phases. **Key findings of the study** • Pollution from stubble burning significantly reduced lung function and was particularly harmful to women in rural Punjab • The concentration of PM2.5 was found to increase more than twice between the two phases, hen crop burning peaks. PM2.5 is the category of unburnt carbon particles considered most harmful to respiratory health. • The level of increase is around 10-15 times the prescribed air quality standards prescribed by the WHO though the permissible standards set by India's Central Pollution Control Board (CPCB) are higher.

	• During the crop residue burning period, a two- to three-fold increase was noted in most of the respiratory symptoms, including wheezing, breathlessness on exertion, cough, skin rashes, itchiness of eyes, across all age groups (10-60 years). **What is Stubble Burning?** • Stubble burning is the act of setting fire to crop residue to remove them from the field to sow the next crop • It is a traditional practice in Punjab and Haryana to clean off the rice chaff to prepare the fields for winter sowing • It begins around October and peaks in November, coinciding with the withdrawal of southwest monsoon. • On December 10, 2015, the National Green Tribunal (NGT) had banned crop residue burning in the states of Rajasthan, Uttar Pradesh, Haryana and Punjab
Extinction Risk for leopards in North India	**Context** An international study was conducted that quantifies the threat posed by roads to the survival of animal populations around the world. **Key findings related to India** • The leopard faces an 83% increased risk of extinction in North India due to roadkill. • The leopard population of North India is at highest risk among four animal populations identified as being the most vulnerable to extinction in the next 50 years if observed roadkill levels persist. • Leopard is followed by the maned wolf and the little spotted cat, both of Brazil, and the brown hyena of southern Africa. • At an 83% increased risk, the study estimates the time to the North Indian leopard population's extinction at 33 years. **About Leopard** • Scientific Name- Panthera pardus. • Listed in Schedule I of the Indian Wildlife (Protection) Act, 1972. • Included in Appendix I of CITES. • Listed as vulnerable on the IUCN Red List. • Nine subspecies of the leopard have been recognized, and they are distributed across Africa and Asia.
New climate pledges barely affect global heating: UN	**Context** According to the UN, the number of emissions pledges around the COP26 climate summit will likely do little to slow global warming. • It has urged nations to sharply accelerate their greenhouse gas cuts this decade. **Key takeaways** • Nations have presented a range of new and enhanced commitments in recent weeks as the UN climate summit sets its sights on limiting temperature rises to 1.5 degrees Celsius. India has also vowed to be carbon neutral by 2070. • Nationally determined contributions, or NDCs of countries are very far off from the target which has put Earth on course to warm a "catastrophic" 2.7 degrees Celsius this century. • Besides, a fresh assessment of their new pledges by the UN Environment Programme (UNEP) found the outcome was "very similar", largely because the most ambitious emissions cuts are envisaged after 2030. • The report highlights the challenges facing climate negotiations because of the yawning gap between the emissions cuts needed this decade to keep warming to 1.5 degrees Celsius and the continuing increases in greenhouse gases pumped into the atmosphere. • UNFCCC said that countries' renewed NDCs would see emissions climb 13.7% by 2030 before sharply declining thereafter. • To keep in line with 1.5C, emissions must instead fall 45% by then.
Portable Oxygen Cans	**Context** After oxygen cylinders, it's everyday-use portable oxygen cans that are now witnessing brisk sales across the country, with escalating air pollution levels and increased travel and outdoor activities. It is also being used by those recovering from COVID-19.

	Key takeaways • Sales of these portable oxygen cans have doubled post-Diwali, and are expected to triple in the coming weeks. • Delhi-NCR alone claims to bring in 65% of the sales, while Mumbai, Bengaluru and Pune also are witnessing a steady climb in demand for this product. • **Not recommended:** Medical doctors are not ready to give an all-clear for the product, stating that it can actually delay medical intervention and lead to a false sense of well-being. According to doctors, these cans are not useful and they should not be recommended • **Not a substitute:** Technically, a patient in need of oxygen will require at least 1 litre per minute. While these portable oxygen spray cans can have up to 12 litres of oxygen, they will last for about 10 minutes or even less. They shouldn't be seen as a medical intervention. These oxygen spray cans will hardly help in times of acute respiratory failure. One requires a continuous, high flow of oxygen supply with a proper setting. • **Restricted use:** These spray cans may only be used in areas with severe air pollution, for certain sports activities, high-altitude climbing and expeditions, mountaineering, sky expeditions etc. • **Hazardous:** As oxygen supports combustion, storing these at homes is also hazardous.
Climate financing	**Context** India has demanded a trillion dollars over the next decade from developed countries to adapt to, and mitigate, the challenges arising from global warming. • India has kept this as a condition for delivering on climate commitments made by the Prime Minister recently. **What is Climate financing?** • Climate finance refers to local, national or transnational financing—drawn from public, private and alternative sources of financing. • It seeks to support mitigation and adaptation actions that will address climate change. • Delivering on climate finance is among the stickiest points of contention between developed and developing countries because developed countries, as a group, have failed to provide $100 billion annually by 2020, as promised from a decade ago. **What is India's aim?** • India's five-fold plan aims at reducing the carbon intensity of its economy and eventually achieving net zero by 2070. **What does net zero mean?** • Net zero is when a country's carbon emissions are offset by taking out equivalent carbon from the atmosphere, so that emissions in balance are zero. • However, achieving net zero by a specific date means specifying a year, also called a peaking year, following which emissions will begin to fall. • India's conditional NDCs (Nationally Determined Contribution) • India's NDCs (Nationally Determined Contribution) are conditional, that is, subjected to the availability of $1 trillion amount in climate finance. • NDCs are voluntary targets that countries set for themselves, which describe the quantum and kind of emission cuts they will undertake over a fixed period to contribute to preventing runaway global warming. • India's last NDC was submitted following the Paris Agreement of 2015.
China, U.S. to increase climate cooperation	**Context** The world's top carbon polluters, China and the United States, have agreed to increase their cooperation and speed up action to rein in climate-damaging emissions, signalling a mutual effort on global warming. **Key takeaways** • The two countries would work together to accelerate the emissions reductions required to meet the goals of the 2015 Paris Agreement on climate change. • China also agreed for the first time to crack down on methane leaks. • Both countries have agreed to share technology to reduce emissions.

	• During Paris Agreement also Governments had agreed to jointly cut greenhouse gas emissions enough to keep the global temperature rise "well below" 2 degrees Celsius since pre-industrial times, with a more stringent target of trying to keep warming to 1.5 degrees Celsius preferred.
Kaiser-i-Hind: Arunachal's State butterfly	**Context** A swallowtail butterfly carrying 'India' in its name will become the State butterfly of Arunachal Pradesh. • The butterfly is also known as Kaiser-i-Hind. **Pakke Tiger Reserve 2047 declaration** • The State Cabinet also adopted the Pakke Tiger Reserve 2047 declaration on climate change-resilient and responsive Arunachal Pradesh aimed at lowering emissions and sustainable development. **About Kaiser-i-Hind** • Kaiser-i-Hind (Teinopalpus imperialis) literally means Emperor of India. • This butterfly with a 90-120 mm wingspan is found in six States along the eastern Himalayas at elevations from 6,000-10,000 feet in well-wooded terrain. • Countries: The butterfly also flutters in Nepal, Bhutan, Myanmar, Laos, Vietnam and southern China. • Protection: It is protected under Schedule II of Wildlife (Protection) Act, 1972 • Threats: It is hunted for supply to butterfly collectors. • The species is confined to very few pockets of Arunachal Pradesh and could become extinct if not conserved • Implication of the tag: The State butterfly tag can translate into its habitat conservation  **About Pakke Tiger Reserve** • It is also known as Pakhui Tiger Reserve. • It is located in Arunachal Pradesh • Falls within the Eastern Himalaya Biodiversity Hotspot. • Known for its amazing sightings of four resident hornbill species. • This Tiger Reserve has won India Biodiversity Award 2016 in the category of 'Conservation of threatened species' for its Hornbill Nest Adoption Programme. • It is bounded by Bhareli or Kameng River in the west and north, and by Pakke River in the east. It is surrounded by contiguous forests on most sides.
Mission 500 GW by 2030	**In News:** India takes one more step to reduce carbon emission and reduce the cost of power to consumers. • Ministry of Power and New & Renewable Energy have issued revised guidelines providing for thermal generation companies to set up renewable energy generation capacity either by themselves through developers by open bids and supplying it to the

	consumers under the existing PPAs. This will enable the replacement of fossil fuel based energy by renewable energy under the existing PPAs. • As the cost of renewable energy is less than the cost of Thermal energy, the gains from the bundling of renewable energy with thermal will be shared between the generator and Distribution companies/other procurers on a 50:50 basis. • As the renewable energy will be balanced with thermal energy, therefore, the DISCOMs will now not need to acquire any separate capacity for balancing of renewable energy. This is a very significant step towards achieving the goal of 500 GW of non-fossil fuel capacity by 2030. • The distribution companies will be able to count the renewable energy supplied under the scheme towards their renewable purchase obligation and this will be without the financial burden of separate PPA. This step by the Central Government will lead to a faster energy transition and will be beneficial for both the Generators and the Distribution Companies.
Ocean Services, Modelling, Application, Resources and Technology (O-SMART)	**In News:** Cabinet approves continuation of the umbrella scheme "Ocean Services, Modelling, Application, Resources and Technology (O-SMART)" **By:** Ministry of Earth Sciences **Aim:** Stepping up ocean research and setting up early warning weather systems, with the objectives for providing forecast and services based on the continuous observation of our oceans, development of technologies and exploratory surveys for sustainable harnessing of our oceanic resources (both living and non-living) ***Milestones Achieved*** • India's recognition as Pioneer Investor with International Seabed Authority (ISA) for conducting extensive research on deep sea mining of Poly Metallic Nodules (PMN) and hydrothermal sulphides in the allotted area of the India Ocean. • The technology development for desalination using low temperature thermal desalination installation of such facility in Lakshadweep islands is also a significant achievement. • Moreover, India's ocean related activities are now extended from the Arctic to Antarctic region covering large ocean space which have been monitored by through in-situ and satellite-based observation. • India has taken leadership role in implementing Indian Ocean component of Global Ocean Observing System in Intergovernmental. ***Significance*** • The present decade has been declared as the **Decade of Ocean Science for Sustainable Development** by the United Nations (UN) and continuation of the scheme would strengthen our stand in the global oceanographic research and technology development. • This continuation of the scheme would contribute significantly towards national policy on blue economy for effective and efficient use of the vast ocean resources in a Sustainable way. • Efforts towards achieving United Nations sustainable Development **Goal-14** to conserve and sustainably use the oceans, seas and marine resources are being covered through the coastal research and marine biodiversity activities. • Significant contribution to the national GDP is being made and to be continued through the ocean advisory services and technologies developed benefiting communities and several sectors working in the marine environment, particularly in the coastal states of India.
Atmosphere & Climate Research-Modelling	**In News:** Cabinet approves Continuation of the umbrella scheme "Atmosphere' & Climate Research-Modelling Observing Systems & Services (ACROSS)" from the 14th Finance Commission to the next Finance Commission Cycle (2021-2026). **Implemented by:** Ministry of Earth Sciences (MoES)

Observing Systems & Services (ACROSS)	• **Objective:** To conduct R & D for improving forecast of weather, climate and other hazardous events in real-time for delivery of a reliable weather and climate service. • The entire gamut of weather/climate prediction involves assimilation of meteorological observations, understanding the processes, research and development of dynamical models and providing the forecast services. • Each of these aspects is incorporated as sub-scheme under the umbrella scheme "ACROSS" and is being implemented through India Meteorological Department (IMD), Indian Institute of Tropical Meteorology (IITM), Pune and National Centre for Medium Range Weather Forecasting(NCMRWF).
Launch of River Cities Alliance (RCA)	**What:** A dedicated platform for river cities in India to ideate, discuss and exchange information for sustainable management of urban rivers, here today. • This first of its kind Alliance in the world symbolizes the successful partnership of the two Ministries i.e., Ministry of Jal Shakti and Ministry of Housing and Urban Affairs. • The Alliance will focus on three broad themes- Networking, Capacity Building and Technical Support. *The primary objective of RCA is to* • Provide the member cities with a platform to discuss and exchange information on aspects that are vital for sustainable management of urban rivers such as minimizing their water footprint, reducing impacts on river and water bodies, capitalizing on natural, intangible, architectural heritage and associated services and develop self-sufficient, self-sustainable water resources through recycle, reuse strategy. • The Alliance cities will work towards adopting and localizing national policies and instruments with key river-related directions, prepare their Urban River Management Plans and develop city-specific sectoral strategies that are required for sustainable urban river management. • The Alliance gives opportunities to these cities to strengthen governance aspects for river cities and improves their liveability to attract external economic investments, access state of the art knowledge and frameworks as well as an opportunity to serve as the site for unique demonstration projects which will be implemented by NIUA and NMCG.
IN-FLIGHT WIF	**Context**: Three years after the Department of Telecom permitted WiFi services on commercial flights, it is yet to become a reality for domestic air travellers as airlines grapple with the huge installation costs and the impact of COVID-19 on passenger demand. **Key Takeaways** • Domestic carriers have been slow in offering the service because retrofitting aircraft with the required antenna is an expensive affair that takes nearly 12 hours. • Airlines find it difficult to pass on the costs to the passengers in an extremely competitive market for the cheapest ticket. • However, international airlines such as Lufthansa, Air France and Emirates have started offering the service, though earlier they were switching it off on entering India skies. • The equipment costs ₹3 crore to ₹4 crore for one aircraft, which is the **entry barrier because it is difficult to recover the cost from passengers.** • Those airlines that have started to offer the service are rolling it out only on new aircraft that come equipped with the antenna. Full-service carrier Vistara is the only Indian airline to offer it since September 2020. To understand the Science behind In-flight Wifi, Click here
Yamuna Pollution	**Context** Delhi's Chief Minister has announced a six-point action plan to completely clean the Yamuna by 2025. • Timelines are set for every small aspect of the project and they will be revisited every 15 to 30 days to ensure that it is completed on time.

	Action plan ● **New sewage treatment plants (STP)**: Building new sewage treatment plants (STP), increasing capacity of existing STPs, and technology upgradation ● **In situ treatment** of major drains. ● **Diverting industrial waste**: All industrial waste will be diverted to the common effluent treating plants. There will be a crackdown on industries for not sending its waste to the treatment plants. ● **Proper Sewer network:** JJ clusters will be connected to the larger sewer network to completely stop stormwater drains from being polluted. Every household may also be connected to the sewer network. ● **Desilting:** Complete desilting of entire sewer network **About Yamuna** ● The Yamuna is a major tributary of river Ganges, ● **Origin:** Yamunotri glacier near Bandarpoonch peaks, Uttarkashi, Uttarakhand. It meets the Ganges at the Sangam in Prayagraj, UP ● **Important Tributaries**: Chambal, Sindh, Betwa, Ken, Tons, Hindon. ● **Causes of Pollution in Yamuna** ○ Industrial Pollution ○ Mixing of Drains ○ Effects of Rising Ammonia
CEEW Centre for Energy Finance (CEEW-CEF)	**Context** According to an analysis by climate and energy research firm, CEEW Centre for Energy Finance (CEEW-CEF), in order to meet its goals of net zero by 2070, India will need close to $10 trillion (Rs. 700 lakh crore). • CEEW is the Council for Energy, Environment and Water Research, a think tank in India. Key estimates by the firm • Around $8.4 trillion would be needed to scale up generation from renewable energy and bring together the necessary infrastructure. • Another $1.5 trillion would have to be invested in the industrial sector for setting up green hydrogen production capacity. ○ Green hydrogen is made from renewable energy and can be used for many things, from heating to powering batteries as well as fuelling vehicles. • India would require investment support of $1.4 trillion from developed economies to bridge the gap. **Another study by the firm** • The CEEW had computed earlier that India's total installed solar power capacity would need to increase to 5,630 gigawatts by 2070. • The usage of coal would need to peak by 2040 and drop by 99% between 2040 and 2060. • Crude oil consumption across sectors would need to peak by 2050 and fall substantially by 90% between 2050 and 2070. • Green hydrogen could contribute 19% of the total energy needs of the industrial sector.

North East Monsoon	**Context** The heavy rain that lashed Chennai on Saturday night led to flooding in at least 40 busy residential and commercial neighbourhoods in the city. The overnight rain, which was reportedly the heaviest since 2015, was part of a formation of a low pressure over the Bay of Bengal. **About North East Monsoon** • North-East monsoon– a permanent feature of the Indian subcontinent's climate system – from October to December – rainfall is experienced over Tamil Nadu, Kerala, and Andhra Pradesh, along with some parts of Telangana and Karnataka • Winter monsoon season contributes only 11% to India's annual rainfall. • South-west Summer monsoon season between June-September brings about 75% of India's annual rainfall. • Many other parts of the country, like the Gangetic plains and northern states, also receive some rain in November and December but this is not due to the northeast monsoon. It is caused mainly by the Western Disturbances. • Western Disturbance: It is an eastward-moving rain-bearing wind system that originates beyond Afghanistan and Iran, picking up moisture from as far as the Mediterranean Sea, even the Atlantic Ocean.
Place in news: Kaho village	**Context** Arunachal Pradesh is planning to make a documentary about one of its most "patriotic destinations" — Kaho, a village in Anjaw district on the China border — to mark the 75th year of Independence. **Key takeaways** • One of seven villages in the Kibithoo block bisected by the Lohit river, Kaho had weathered the Chinese attack in 1962. Its people had assisted the Indian soldiers who had been outnumbered. • The village is 580 km east of Itanagar. • Its people belong to the Meyor community. • Anjaw is one of the 11 districts of Arunachal Pradesh that share their border with China. • The documentary is a part of the celebrations of "Azadi Ka Amrut Mahotsav", the nationwide celebrations for the 75th year of Independence. • According to the 2011 census, Kaho has only 65 residents and a literacy rate of 64.15%.
Sudden Change of Glacier course	**Context** Scientists have recently found that Nearly 20,000 years ago, a large Himalayan glacier "abruptly" changed course and over time fused into an adjacent glacier in present-day Pittoragarh, Uttarakhand. • This finding has been recorded in the Himalayas for the first time. • Cause of the change: Change in climate and tectonic movement. • Its accumulated debris caused it to turn from a north-eastern direction to a south-eastern course. • Methods used for the study: Remote sensing and an old survey map • The unnamed glacier lies in an extremely inaccessible region. **Young Himalayan region** • Himalayan region is among the youngest mountain ranges in the world due to which the supporting underlying tectonic plates are not stable and frequently trigger earthquakes and landslides.
Taiwan Strait	**Context** Recently, USA's Arleigh Burke-class guided missile destroyer USS Milius passed through the Taiwan Strait. **About Taiwan strait**

- A strait is a narrow piece of sea that joins two larger seas
- It separates mainland China from the island of Taiwan.
- Also known as the Formosa Strait or the Tai-hai.
- It forms part of the South China Sea. Its northern portion is linked to the East China Sea

Etikoppaka toys	**Context:** A traditional method of making wooden toys using non-toxic paints and natural dyes (dying art) • In Etikoppaka village in Southern India • Are well rounded and made using natural dye colours. This makes them safe, even for kids
Proposal to declare Guru Purab as 'World Pedestrian Day'	**Context** Recently, Punjab Police has proposed that the birth anniversary (Gurpurab) of Sikhism founder Guru Nanak Dev be declared as 'World Pedestrian Day'. **Why was it proposed?** • Guru Nanak Dev as the world's most notable and revered pedestrian • In a period of 24 years (1500-1524), Guru Nanak traveled in all directions to show the path of love, equality, humanity, and selfless service to mankind. • Most of his journeys were made on foot with his companion Bhai Mardana. • Later his travels were documented in texts called 'janamsakhis'. • These sites are now spread across nine nations as per current geographical divisions — India, Pakistan, Iran, Iraq, China (Tibet), Bangladesh, Saudi Arabia, Sri Lanka, and Afghanistan. **Do you know?** • In these journeys, he preached the new concept of God as "Supreme, All powerful and Truthful, Formless (Nirankar), Fearless (Nirbhau), Without hate (Nirvair), the Sole (Ik), the Self-Existent (Saibhang), the Incomprehensible and Everlasting creator of all things (Karta Purakh), and the Eternal and Absolute Truth (Satnam)". • His writings, in the form of 974 spiritual hymns were incorporated in the scripture Guru Granth Sahib by the fifth Guru Arjan Dev ji.
Srinagar chosen as creative city by UNESCO	**Context** The United Nations Educational, Scientific and Cultural Organization (UNESCO) has picked Srinagar among 49 cities as part of the creative city network under the Crafts and Folk Arts category. **Key takeaways** • The inclusion is likely to pave way for the city to represent its handicrafts on the global stage through UNESCO. • The UCC network involves folk art, media, film, literature, design, gastronomy and media arts. • Only Jaipur (Crafts and Folk Arts) in 2015, Varanasi and Chennai (Creative city of Music) in 2015 and 2017 respectively have so far been recognised as members of the UCCN for creative cities. **About UNESCO Creative Cities Network (UCCN)** • The UNESCO Creative Cities Network (UCCN) was created in 2004 to promote cooperation with and among cities that have identified creativity as a strategic factor for sustainable urban development. • The 246 cities which currently make up this network work together towards a common objective: placing creativity and cultural industries at the heart of their development plans at the local level and cooperating actively at the international level.
Adi Shankaracharya	**Context** A 12-foot statue of Adi Shankaracharya has been unveiled at Kedarnath, where the acharya is believed to have attained samadhi at the age of 32 in the ninth century. **About Adi Shankaracharya** • Born in Kaladi village on the bank of the Periyar, the largest river in Kerala • He was a disciple of the scholar Govindacharya. • He was constantly on the move — bearing the flag of Advaita Vedanta, challenging prevailing philosophical traditions including Buddhism and Jainism.

	• He is believed to have established the ritual practices at the Badri and Kedar dhams. • Adi Shankara is generally identified as the author of 116 works — among them the celebrated commentaries (bhashyas) on 10 Upanishads, the Brahmasutra and the Gita, and poetic works including Vivekachudamani, Maneesha Panchakam, and Saundaryalahiri. • He also composed texts like Shankarasmrithi, which seeks to establish the social supremacy of Nambuthiri Brahmins. **What is Advaita Vedanta?** • Advaita Vedanta articulates a philosophical position of radical nondualism, a revisionary worldview which it derives from the ancient Upanishadic texts. • According to Advaita Vedantins, the Upanishads reveal a fundamental principle of nonduality termed 'brahman', which is the reality of all things.

Padma awards	**Context:** The President of India presented the Padma awards for the year 2020 -2021.
	For the year 2020, the list comprises seven Padma Vibhushans, 10 Padma Bhushans and 102 Padma Shri awards.
	• The Padma Awards are one of the highest civilian honours of India announced annually on the eve of Republic Day.
	• The Awards are given in three categories:
	  ○ Padma Vibhushan (for exceptional and distinguished service).
	  ○ Padma Bhushan (distinguished service of higher order) and
	  ○ Padma Shri (distinguished service).
	• It was instituted in 1954.
	• All persons without distinction of race, occupation, position or sex are eligible for these awards.
	• The awards are presented by the President of India
	• The Awards are conferred on the recommendations made by the Padma Awards Committee, Which is constituted by the Prime Minister every year.
	• The Committee is headed by the Cabinet Secretary and includes Home Secretary, Secretary to the President and four to six eminent persons as members.
	• The recommendations of the committee are submitted to the Prime Minister and the President of India for approval.

Kartarpur Sahib Gurdwara Corridor	**Context** The Kartarpur Sahib Gurdwara Corridor will be reopened on Wednesday. • The announcement comes ahead of the birth anniversary of Sikhism founder Guru Nanak on 19th November. **The Kartarpur Sahib Gurdwara Corridor** • The corridor, inaugurated in 2019, links two important shrines — Dera Baba Nanak in Gurdaspur district of Punjab and Gurdwara Darbar Sahib in Kartarpur, Pakistan. • The pilgrims can travel visa-free to the shrine. • The corridor was built to commemorate 550th birth anniversary celebrations of Guru Nanak Dev. • The operations at the corridor were suspended due to the pandemic. **Who is Guru Nanak?** • Guru Nanak Dev is known as the founder of Sikh religion (1469-1539). • He advocated the 'Nirguna' form of bhakti. • He rejected sacrifices, ritual baths, image worship, austerities and the scriptures of both Hindus and Muslims. • The fifth preceptor, Guru Arjan, compiled Baba Guru Nanak's hymns in the Adi Granth Sahib. • Kartarpur gurudwara is the revered shrine about 4km across the border where Guru Nanak Dev spent the last 18 years of his life.

Rani Lakshmibai – Her Jayanti	• Queen of the princely state of Jhansi in North India currently present in Jhansi district in Uttar Pradesh, India • One of the leading figures of the Indian Rebellion of 1857 and became a symbol of resistance to the British Raj for Indian nationalists. • She was named Manikarnika and was nicknamed Manu. • After the death of the Maharaja in November 1853, because Damodar Rao (born Anand Rao) was an adopted son, the British East India Company, under Governor-General Lord Dalhousie, applied the Doctrine of Lapse, rejecting Damodar Rao's claim to the throne and annexing the state to its territories. • She defended Jhansi against British troops when Sir Hugh Rose besieged Jhansi on 23 March 1858. • A number of patriotic songs have been written about the Rani. The most famous composition about Rani Lakshmi Bai is the Hindi poem Jhansi ki Rani written by Subhadra Kumari Chauhan.
Namda Craft	**Context**: Ministry of Skill Development & Entrepreneurship launched two projects— • Revival of **Namda craft of Kashmir** as a special pilot project under Pradhan Mantri Kaushal Vikas Yojana (PMKVY) 3.0 • Upskilling of artisans and weavers of Kashmir under Recognition of Prior Learning (RPL), component of PMKVY. **About Namda Craft** • Namda craft of Kashmir is a **rug made of sheep wool** through felting technique instead of normal weaving process. • Due to low availability of raw material, lack of skilled manpower and marketing techniques, the export of this craft has declined almost 100 percent between 1998 and 2008. • Therefore, through this special project under PMKVY, the Ministry of Skill Development and Entrepreneurship (MSDE) has designed short-term training curriculum to preserve this endangered craft. • The objective of these projects is to boost and preserve the traditional Namda craft of Kashmir and upskill the local weavers and artisans to enhance their productivity through RPL assessment and certification. • The Namda project will benefit 2,250 people of 30 Namda Clusters and RPL initiative targets to upskill 10,900 artisans and weavers of Jammu and Kashmir. • This will also improve the access of existing artisans of Namda crafts cluster in Kashmir and will improve their prospects of employability.
National Mission on Cultural Mapping	**Part of:** Prelims **In News:** National Mission on Cultural Mapping has mapped data of 14.53 lakh artists/artisans • A scheme administered by the Ministry of Culture • Conceptualized for the purpose of developing a comprehensive data base of artists, art forms and other resources gathered from cultural organizations in the Ministry of Culture, other Ministries and also States on a robust IT-enabled platform.
Sabz Burj 	**Context** Sabz Burj, one of Delhi's earliest Mughal-era monuments, has been conserved and restored over the last four years using traditional materials and building-craft techniques favoured by 16th century craftsmen. **About Sabz Burj ("Green Dome")** • It is an octagonal tomb situated beside Humayun's Tomb, New Delhi. • Some Mughal historians consider the Sabz Burj tomb constructed to be for Fahim Khan, who died in 1626 A.D. He was an attendant to Abdur Rahim Khan during 4th Mughal emperor Jahangir's reign. But others have opined that it was made in 1530–40.

	• The Archaeological Survey of India (ASI) has renovated the structure. • The structure is crowned with a blue dome and it is popularly known as the Neeli ("Blue") chhatri • It is of immense significance due to the ceiling on its double dome structure painted in pure gold and lapis and revealed after conservation efforts began. It is thought to be the earliest surviving painted ceiling for any monument in India.

Project-15B stealth guided missile destroyers	**Context** The first ship of the four Project-15B state-of-the-art stealth guided missile destroyers, Visakhapatnam, being built at the Mazgaon Docks Limited (MDL), was delivered to the Navy recently. • The four ships are named after major cities from all four corners of the country — Visakhapatnam, Mormugao, Imphal and Surat. **Key takeaways** • The 163-metre-long warship has a full load displacement of 7,400 tonnes and a maximum speed of 30 knots. • It has approximately 75% indigenous content . • These ships are equipped with BrahMos supersonic cruise missiles and long-range Surface-to-Air missiles (SAM). • The induction would enhance the maritime prowess in the Indian Ocean Region. • Certain enhanced stealth features of the ships make them difficult to detect • These ships are propelled by four gas turbines in Combined Gas and Gas (COGAG) configuration **About BrahMos supersonic cruise missiles** • Carried out by: Defence Research and Development Organisation (DRDO) from Balasore in Odisha. • BrahMos surface-to-surface supersonic cruise missile features indigenous Booster and Airframe Section along with many other 'Made in India' sub-systems. • The BrahMos Land-Attack Cruise Missile was cruising at a top speed of Mach 2.8.
Autosomal DNA technique	**Context** Recently, a living descendant of the famed Lakota leader Sitting Bull has been confirmed using a novel technique for analyzing fragments of the historic figure's DNA. • The researchers compared autosomal DNA from Sitting Bull's hair sample to DNA samples from LaPointe and other Lakota Sioux to establish the familial connection. • Sitting Bull • Sitting Bull, born in 1831, was chief and medicine man of the Hunkpapa Lakota Sioux, Native American group. • Sitting Bull was a Hunkpapa Lakota leader who led his people during years of resistance against United States government policies. **What is Autosomal DNA?** • All of us are born with 23 pairs of chromosomes(with few exceptions) that were passed down from parents • X and Y chromosomes are part of the 23rd pair of chromosomes which determine what biological sex a person is born with. • The rest of the 22 pairs are called autosomal chromosomes. • Hence Autosomal DNA is contained in the 22 pairs of chromosomes not involved in determining a person's sex. • Autosomal DNA recombines in each generation, and new offspring receive one set of chromosomes from each parent. • These are inherited exactly equally from both parents **Usage of this technique** • Autosomal DNA tests can tell us a lot about our ancestry with a pretty high level of accuracy. • It can be used even when very limited genetic data are available. • The technique could also be used in forensic investigations.
Environment of extra solar planets	**Context:** Indian Astronomers have found a new method to understand the atmosphere of extra solar planets.

	• They have shown that planets going around stars other than the Sun can be studied by observing the **polarisation of light and studying polarisation signatures**. • These polarisation signatures or variations in **scattering intensity of light** can be observed with existing instruments and expanding the study of planets beyond the solar system using existing instruments. • The thermal radiation of hot young planets and the reflected light of planets orbiting other stars, known as extra-solar planets or exoplanets would also be polarized and the measure of the polarization might unveil the chemical composition and other properties of the exoplanetary atmosphere. • Subsequent confirmation of the prediction by the detection of polarization of many Brown Dwarfs, a kind of failed stars that have an atmosphere very similar to that of Jupiter, motivated researchers all over the world to build highly sensitive polarimeters and use polarimetric methods to probe exoplanetary environment. • Unlike the traditional and popular methods such as Transit Photometry and Radial Velocity methods that can detect planets that are viewed almost edge-on only, this polarimetric method can detect and probe exoplanets orbiting with a broad range of orbital inclination angles. • Thus, polarimetric techniques in the near future will open up a new window for the study of the exoplanets and enable us to overcome many of the limitations of the traditional techniques.
Covaxin gets WHO's emergency use nod	**Context** India's first indigenous COVID-19 vaccine, Bharat Biotech's Covaxin, was granted Emergency Use Listing (EUL) by the World Health Organization (WHO). **What is Covaxin?** • Covaxin is a whole virion-inactivated vaccine against SARS-CoV-2, developed in partnership with the Indian Council of Medical Research and the National Institute of Virology, Pune. • It has been granted EUL for use in persons 18 years and above, over two doses spaced four weeks apart. • It has been formulated to enable shipping and long-term storage at 2-8ºC. • It is also formulated to adhere to a multi-dose vial policy, thereby reducing open vial wastage, saving money to procurement agencies and governments. **Key takeaways** • The EUL is a prerequisite for the COVAX initiative in vaccine supply, and allows countries to expedite their own regulatory approval to import and administer COVID-19 vaccines. • With validation from WHO, countries can now expedite their regulatory approval processes to import and administer Covaxin. • UNICEF, Pan-American Health Organization (PAHO), GAVI COVAX facility, will be able to procure Covaxin for distribution to countries worldwide • The move is expected to ease international travel for Indians who have opted for the vaccine
Smart anti-airfield weapon	**Context** The Defence Research and Development Organisation and the Indian Air Force have jointly carried out two flight tests of the indigenously- developed smart anti-airfield weapon. In both the tests, the intended target was hit with high accuracy. **What is DRDO's smart anti-airfield weapon?** • The DRDO Smart Anti-Airfield Weapon (SAAW) is a long-range precision-guided anti-airfield weapon. • Developed by: Defence Research and Development Organisation (DRDO). • It is designed to be capable of engaging ground targets with high precision up to a range of 100 km. • In September 2020, the SAAW was approved for procurement by the Indian Government for the Navy and the Air Force.

Indian SARS-CoV-2 Genomic Consortia (INSACOG)	**Context** According to the Indian SARS-CoV-2 Genomics Consortium (INSACOG), the frequency of the new AY.4.2 variant of COVID-19 is less than 0.1% of all Variants of Interest (VOI)/ Variants of Concern (VOC), and is too low to be of concern at this time. • The INSACOG noted that Delta (B.1.617.2 and AY.x) continues to be the main VOC in India and no new variant VOI or VOC have been noted in India. • The Delta variant, which was first found in India in October 2020, led to the devastating second wave of the coronavirus pandemic in the country. **What is AY4.2?** • AY.4.2 is a descendant of the Delta variant of COVID-19. The Delta variant, also known as B.1.617.2, was first identified in India in October 2020. • The AY.4.2 sub-lineage contains 2 mutations in its spike protein — A222V and Y145H. • It is dubbed "Delta Plus" and now named VUI-21OCT-01 by the UK Health Security Agency (UKHSA)). **What is Indian SARS-CoV-2 Genomic Consortia (INSACOG)?** • Coordinated by: Department of Biotechnology (DBT) along with MoH&FW, ICMR, and CSIR • The consortium will ascertain the status of a new variant of SARS-CoV-2 in the country. • INSACOG will have a high level Inter-Ministerial Steering Committee. • It will have a Scientific Advisory Group for scientific and technical guidance. • Aim: To monitor the genomic variations in the SARS-CoV-2 on a regular basis through a multi-laboratory network. • This vital research consortium will also assist in developing potential vaccines in the future. • The consortium will also establish a sentinel surveillance for early detection of genomic variants with public health implication, and determine the genomic variants in the unusual events/trends (super-spreader events, high mortality/morbidity trend areas etc.)
Messier 87	**Context** Scientists studying the galaxy Messier 87 (M87) – which surrounds the only black hole to have been imaged so far – have come up with a theoretical model of the jets of material emanating from M87. **Key takeaways** • The calculated images published in Nature Astronomy resemble closely what is observed, and help confirm Einstein's theory of relativity. • Messier 87 (also known as Virgo A or NGC 4486, generally abbreviated to M87) is a supergiant elliptical galaxy with several trillion stars in the constellation Virgo. • One of the most massive galaxies in the local universe, it has a large population of globular clusters—about 15,000 compared with the 150–200 orbiting the Milky Way—and a jet of energetic plasma that originates at the core and extends at least 4,900 light-years, traveling at a relativistic speed. • It is one of the brightest radio sources in the sky and a popular target for both amateur and professional astronomers.
Zika virus	**Context** With a rise in the number of Zika virus cases in Uttar Pradesh, doctors have advised that people should avoid all non-essential travel to areas reporting cases. • Delhi also has been placed on alert. **Key takeaways** • The Union Health Ministry has also advised people to control/prevent mosquito breeding. • Based on the available information of previous outbreaks, severe forms of disease requiring hospitalisation are uncommon and fatalities are rare. • The National Centre for Disease Control (NCDC) had said earlier that non-essential travel to the affected areas and countries should be deferred/cancelled

	• Also, Persons with comorbid conditions (diabetes, hypertension, chronic respiratory illness, immune disorders etc) should seek advice from the nearest health facility, prior to travel to an affected country. **What is Zika virus?** • Zika virus is a mosquito-borne flavivirus that was first identified in Uganda in 1947 in monkeys. • It was later identified in humans in 1952 in Uganda and the United Republic of Tanzania. • ZVD is caused by a virus transmitted primarily by Aedes mosquitoes (AM), mainly Aedes aegypti. This is the same mosquito that transmits dengue, chikungunya and yellow fever. • Transmission: From mother to fetus during pregnancy, through sexual contact, transfusion of blood and blood products, and organ transplantation. • Symptoms: Fever, rash, conjunctivitis, muscle and joint pain, malaise or headache. • According to WHO, a majority of those infected with Zika virus disease either remain asymptomatic (up to 80%) or show mild symptoms • Zika virus infection during pregnancy can cause infants to be born with microcephaly (smaller than normal head size) and other congenital malformations, known as congenital Zika syndrome. • Treatment: There is no vaccine or medicine for Zika. • The focus is on relieving symptoms and includes rest, rehydration and acetaminophen for fever and pain.
PNS Tughril	**Context** China recently delivered to Pakistan's Navy Chinese warship, to be deployed by Pakistan in the Indian Ocean. **Key takeaways** • The delivery of the Type 054A frigate is the latest example of increasingly close military cooperation. • It has been named PNS Tughril by the Pakistani Navy, and it is "the first hull of four Type 054 frigates being constructed for the Pakistan Navy". • It is equipped with state-of-the-art combat management and an electronic warfare system along with modern self-defence capabilities. • It can simultaneously execute a number of naval warfare missions in a highly intense multi-threat environment.
S-400 systems	**Context** Recently, Russia has started deliveries of the S-400 air defence systems to India. • The system is also known as the 'Triumf' interceptor-based missile system. • This risks the possibility of sanctions from the U.S. under the Countering America's Adversaries Through Sanctions Act (CAATSA) which would come up for discussion at the India-U.S. 2+2 ministerial dialogue, also scheduled for early December. **Background** • In October 2018, India and Russia signed a $5.43 billion deal for five S-400 regiments. • Ahead of the scheduled deliveries, two Indian Air Force (IAF) teams have already been trained on the system by the manufacturer Almaz Antey, in Russia. **What is CAATSA?** • Countering America's Adversaries through Sanctions Act (CAATSA)'s core objective is to counter Iran, Russia and North Korea through punitive measures. • Enacted in 2017. • Includes sanctions against countries that engage in significant transactions with Russia's defence and intelligence sectors. **What is S-400 Triumf anti-aircraft missile systems?** • The S-400 Triumf is a mobile, surface-to-air missile system (SAM) designed by Russia. • It can simultaneously track numerous incoming objects — all kinds of aircraft, missiles and UAVs — in a radius of 400km and launch appropriate missiles to neutralise them.

	• It is the most dangerous operationally deployed modern long-range SAM (MLR SAM) in the world, considered much ahead of the US-developed Terminal High Altitude Area Defense system (THAAD).
DART Mission	**Context** On November 24 NASA will launch the agency's first planetary defense test mission named the Double Asteroid Redirection Test (DART). **Key takeaways** • DART is a planetary defense-driven test of technologies for preventing an impact of Earth by a hazardous asteroid. • The main aim of the mission is to test the newly developed technology that would allow a spacecraft to crash into an asteroid and change its course. • The spacecraft will be launched on a SpaceX Falcon 9 rocket from Vandenberg Space Force Base in California. • The target of the spacecraft is a small moonlet called Dimorphos (Greek for "two forms"). The spacecraft is expected to collide when it is 11 million km away from Earth. • Dimorphos orbits a larger asteroid named Didymos (Greek for "twin")
Citizens' Tele-Law Mobile App	**Tele-Law:** Reaching the Unreached e-interface platform was launched in 2017 by the Department of Justice, to strengthen the pre-litigation mechanism in the country. • This is operational in 51,434 Common Service Centres across 50,000 Gram Panchayats in 633 districts Tele-Law leverages technology (viz. tele-video conferencing facilities) to connect the beneficiary with the Panel Lawyer to seek legal advice and consultation for an early redressal of their grievance. • Expanding its reach and ambit the **Citizens' Tele-Law Mobile App** intends to widen the access to increased legal information and empowers the masses to identify their problem and chose from appropriate forum of dispute redressal to claim their entitlements and rights by connecting the beneficiary directly to the Panel Lawyer or with an assistance of Para Legal Volunteers, Village Level entrepreneurs, in case of beneficiary who are unable to read or write. • A first of its kind wherein as part of our constitutional mandate for providing equal opportunities before law, every citizen would now be entitled to have access to lawyer on a touch of a finger
Navy's plan for a 170-ship force	**Part of**: Prelims and GS-III - Defence and security **Context** The Navy's plan for a 170 ship force is under way, and some changes in timelines are also being finalised. **Key takeaways** • The Navy shall include a second indigenous aircraft carrier in its Maritime Capability Perspective Plan (MCPP). • The Navy will commission the first **Project-15B class stealth-guided missile destroyer** Visakhapatnam on November 21, and the **fourth Scorpene class submarine Vela** on November 25. • **Current status:** The Navy currently has 130 ships and had earlier planned to achieve securing 200, which was revised to 170 ships by 2027. • **Revised timeline:** The timeline is now being revised as the Navy is revising its MCPP for the next 15 years, which is expected to be ready by 2022. ○ It will be in line with the 10-year Integrated Capability Development Plan (ICDP) being formulated by the Department of Military Affairs to bring in service integration **Navy's Maritime Capability Perspective Plan (MCPP)** • The Navy's Maritime Capability Perspective Plan (MCPP)' emphasises on capability building rather than numbers. • The MCPP lays down the plans for force development and modernisation over three plan periods from 2005-22. • **Aim:** To build a three-dimensional force that is able to meet all future challenges

BRO feat recognised by Guinness World Records	In News: BRO feat recognised by Guinness World Records for constructing and black topping the world's highest motorable road at 19,024 feet at Umlingla Pass in Ladakh. • The 52-kilometre long Chisumle to Demchok tarmac road passes through the 19,024 feet high Umlingla Pass and betters the previous record of a road in Bolivia, which connects volcano Uturuncu at 18,953 feet. • The Umlingla Pass road is another landmark in resurgent India's achievement as it has been constructed at an altitude higher than the North and South Base Camps of Mount Everest. • The BRO provided a black topped road to the important village of Demchok in Eastern Ladakh that will be a boon to the local population of the region as it will enhance the socio-economic conditions and promote tourism in Ladakh. • The strategically important road, which is approximately 15 kilometres long, highlights the focus of the Government in developing road infrastructure in border areas.
NCRA astronomers discover rare radio stars	**Context** A team of astronomers from the Pune-based National Centre for Radio Astrophysics (NCRA-TIFR) have used the upgraded Giant Metrewave Radio Telescope (uGMRT) to discover eight stars belonging to a rare category called 'Main-sequence Radio Pulse' emitters or MRPs. **Implications** • The discovery will aid in the understanding of "exotic" radio stars and stellar magnetospheres. • The current notion of MRPs as rare objects may not be correct. Rather, they are probably more common but are difficult to detect. • The reason for the difficult detection of MRPs was that the radio pulses are visible only at certain times and the phenomenon is mostly observable at low radio frequencies. **What are MRPs?** The MRPs are stars hotter than the Sun with unusually strong magnetic fields, and are much stronger than stellar winds (a continuous flow of gas from a star's upper atmosphere).
Geographical Information System (GIS) plans for Gram Panchayats	**In News:** Ministry of Rural Development reaches an important milestone with the completion of GIS plans for 2 lakh Gram Panchayats (GPs) out of 2.69 lakh GPs under Mahatma Gandhi NREGA. • GIS-based planning under Mahatma Gandhi NREGS is an initiative of the Ministry of Rural Development which helps the Gram Panchayat to ensure a scientific & holistic approach for planning at the Gram Panchayat level. It is an important tool to ensure participatory planning at the implementation level. • Contributions of Mahatma Gandhi NREGS have enhanced significantly by using the GIS-Based Planning approach and impacts of which are visible at ground level • CRISP-M tool will further enable the local communities to understand the impact of changing climate and make smart decisions on them • Yuktdhara Geospatial Planning portal helps the other Ministries to see the geographical location of planned assets on a map, which integrates planning for works, optimises convergence plans and facilitates effective monitoring. • The planning of works under Mahatma Gandhi NREGS are now carried out using advanced technologies viz. Geographical Information System (GIS) and Remote Sensing (RS). Leveraged for this purpose is the much acclaimed 'Bhuvan' space technology solution from the National Remote Sensing Centre (NRSC) of the Indian Space Research Organisation (ISRO). • Geographical Information System (GIS): The GIS is a computer-based tool for mapping and analyzing the geographic terrain and offers scientific choices of development works suitable to the area. This technology integrates common database operations such as query and statistical analysis with the unique visualization and geographic analysis benefits offered by the maps.

World's most sophisticated MRI facility	**Context** Recently, the Union Minister of State (Independent Charge) Science & Technology launched first of its kind, world's most sophisticated MRI facility at the National Brain Research Centre (NBRC), Manesar Haryana. • NBRC is an autonomous institute funded by the Department of Biotechnology, Government of India. **About new MRI facility** • With this facility, India embarks on new frontiers of human Neuroscience • This new facility can run intense scanning modalities very fast, which reduces the scanning time for patients • It can detect and quantify highly sensitive receptors and antioxidants from the brain which has a direct link with onset of various brain disorders like Alzheimer's, Parkinson's and psychiatric disorders. • Also, heavy metal deposition in the brain due to pollution or many other factors can be quantified as necessary **What is Magnetic Resonance Imaging(MRI)?** • MRI is a medical imaging technique used in radiology to form pictures of the anatomy and the physiological processes of the body. • MRI scanners use strong magnetic fields, magnetic field gradients, and radio waves to generate images of the organs in the body. • MRI is the most frequently used imaging test of the brain and spinal cord.
Light-touch regulation of PM-WANI framework	**In News:** Light-touch regulation of PM-WANI framework will encourage entrepreneurs to set up public wifi hotspots and generate additional revenue. • **Launched by:** Department of Telecommunications • Aims to setup Public Wi-Fi Networks by Public Data Office Aggregators (PDOAs) to provide public Wi-Fi services through Public Data Offices (PDOs) spread across length and breadth of the country to accelerate proliferation of Broadband Internet services. • As per the National Digital Communication Plan, the Central government has set a target of setting up of 10 million Wi-Fi hotspots by 2022 and the PM-WANI scheme will facilitate this. • The proliferation of public Wi-Fi networks in the country through PM WANI will accelerate the proliferation of public broadband services through Wi-Fi networks and it will enable local entrepreneurs such as chaiwalas, kirana stores and eateries to earn additional revenue.

Scorpene class submarine INS Vela	**Context** The fourth Scorpene class conventional submarine, INS Vela , was commissioned into the Navy
	Key takeaways
	• With this, the Navy currently has 16 conventional and one nuclear submarines in service.
	• Vela is named after a type of Indian fish belonging to the stingray family.
	Navy's Project-75
	• Six Scorpene submarines are being built under Project-75 by India under technology transfer from France under a $3.75-bn deal.
	  ○ The first submarine **INS Kalvari** was commissioned in December 2017.
	  ○ Second submarine **INS Khanderi** in September 2019.
	  ○ Third one **INS Karanj** in March 2021.
	  ○ The fifth submarine, **Vagir** , was launched in November 2020.
	  ○ Sixth one **Vagsheer** is in the advanced stage of outfitting.
	India's further plans
	• India plans to install Air Independent Propulsion (AIP) modules on all Scorpene submarines from 2023 to enhance their endurance.
	• After the Project P-75I, the Navy intends to design and build conventional submarines indigenously.

Classified military satellite of Russia	**Context** Russia recently successfully placed a military satellite into orbit which is believed to be part of the Kremlin's early warning anti-missile system. • The launch could be delivering a Tundra satellite. • Russia has previously launched Tundra satellites in 2015, 2017 and 2019. • The ground track of the launch "matched previous missions" delivering satellites for Russia's missile warning system named Kupol or dome. ○ Unveiled in 2019, Kupol is designed to detect launches of ballistic missiles and track them to their landing site, though its exact configuration is unknown.
New State of Monster black hole detected 5 Billion Light years away	**In News:** Indian Astronomers have found an active galaxy in a very bright state with 10 times more X-ray emission than normal, equivalent to more than 10 trillion Sun, and located 5 billion light-years away that could help probe how particles behave under intense gravity and acceleration to the speed of light. • It could help study the role of strong gravity and acceleration of matter in the formation, interaction, and evolution of galaxies in the early universe. • Every galaxy in the Universe is believed to host a **supermassive black hole (SMBH)** at its center. In some galaxies, the black hole is actively devouring a large amount of material and shooting **a jet of plasma** almost at the speed of light towards us. These are called **blazars**. • **OJ 287** belongs to a class of blazars known as **BL Lacerate objects** which show very rapid and large amplitude flux variations but barely discernible emission line features. This class of sources emit in the whole electromagnetic spectrum, a rather uncommon phenomenon which requires extreme physical conditions. • Hence a study of such sources tells us about the behavior of matter in an extreme gravitational field where it is difficult for light also to escape from the vicinity of the black hole. • Significant changes in the spectral state of blazars are very rare, and so are the binary SMBH systems in the universe. Multi-wavelength studies of such sources can establish the role of strong gravity and acceleration of particles to the speed of light in the formation of the most energetic jets in the universe, and the formation, interaction, and evolution of galaxies in the early universe.
Omicron new variant of concern	**Context**: WHO has recently classified the B.1.1.529 variant detected in South Africa as a SARS-CoV-2 "variant of concern", saying it may spread more quickly than other forms. **Key Takeaways:** • Preliminary evidence suggested that there is an **increased risk of reinfection** and there had been a detrimental change in COVID-19 epidemiology. • This variant has been detected at faster rates than previous surges in infection, suggesting that this **variant may have a growth advantage**. • WHO also noted current PCR tests continue to **successfully detect the variant.** • While medical experts warned against any overreaction before the variant was better understood, nations have raced to halt air travel, markets fell sharply and scientists held emergency meetings to weigh the exact risks **Classes of SARS-CoV-2 variants** **Variant of Interest** • A variant with specific genetic markers that have been associated with changes to receptor binding which affect its diagnosis and are expected to cause unique outbreak clusters. • It is known for it predicted increase in transmissibility. • It is classified based on factors such as genetic changes that are predicted or known to affect virus characteristics such as transmissibility, disease severity, immune escape etc.

	• It represents a lower level of concern than a variant of concern (VOC). **Variant of Concern** • A variant for which there is evidence of an increase in transmissibility, more severe disease (e.g., increased hospitalizations or deaths). • It is known for its significant reduction in neutralization by antibodies generated during previous infection or vaccination, reduced effectiveness of treatments or vaccines, or diagnostic detection failures. • Example – Alpha, Beta and Delta variants of SARS-CoV-2.
Women's Involvement in Science and Engineering Research (WISER) program	**In News:** A first-of-its-kind programme to promote women in the field of research and development through lateral entry has been launched yesterday - Women's Involvement in Science and Engineering Research (WISER) program by Indo-German Science & Technology Centre (IGSTC) for encouraging women researchers in joint R&D projects. • Will support women scientists holding regular/long term research positions in academia or research institutes/industry. • The involvement in the program will be possible through lateral entry. • There is neither requirement of break-in-career nor any age limit, and it will enable easy participation. • IGSTC is going to support the awardees with a maximum amounting to Rs. 39 L from the Indian side & € 48000 from the German side. WISER program offers 20 awards per year.
Development of SWADESH	**Part of:** Prelims **In News:** DBT-National Brain Research Centre (DBT-NBRC) have recently developed project SWADESH – World's First Multimodal Brain Imaging Data and Analytics. • A unique brain initiative focusing on certified neuroimaging, neurochemical, neuropsychological data and analytics that are made accessible to researchers for managing brain disorders. • SWADESH is the first large-scale multimodal neuroimaging database designed specifically for Indian population with big-data architecture and analytics for various disease categories under one platform. • To strengthen Alzheimer's disease (AD) research and help scientific community come up with promising treatments. SWADESH proposes a big-data architecture that manages and analyzes six modules, namely neurodegenerative [AD, mild cognitive impairment (MCI), and Parkinson's disease (PD)], neuropsychiatric (schizophrenia and bipolar disorder), neurodevelopmental (autism and epilepsy), COVID-19-related disorders, other disorders, and healthy subjects.
Indian Bio-Jet Fuel Technology	**Context**: CSIR-IIP Dehradun's home-grown technology to produce bio-jet fuel has been formally approved for use on military aircraft of the Indian Air Force (IAF). **Key Takeaways** • Biojet fuel is prepared from "non-edible tree borne oil" and is procured from various tribal areas of India. • This fuel is made from Jatropha oil sourced from Chattisgarh Biodiesel Development Authority (CBDA) and then **processed at CSIR-IIP,** Dehradun. • Generally, it is made from vegetable oils, sugars, animal fats and even waste biomass, and can be used in existing aviation jet engines without modification. • **Jatropha oil** is suitable for conversion to jet fuel. This biojet fuel has received wide acceptance from the airline industry. • Currently, **Aviation Sector contributes to 2% of global greenhouse gas emissions.** Commercial biofuel flights will help Indian Airlines in achieving the International Air Transport Association (IATA) target for fuel efficiency and carbon emission. • The technology, developed by the Indian Institute of Petroleum (CSIR-IIP), a constituent laboratory of the Council of Scientific and Industrial Research, has undergone evaluation tests and trials over the last three years.

	• Earlier on 26 January 2019, an AN-32 aircraft, filled with blended bio-jet fuel, had flown over Raj Path at New Delhi during the Republic Day celebration **What are Biofuels?** • Biofuels are fuels manufactured from biomass. • Biomass resources are the biodegradable fraction of products, wastes and residues from agriculture, forestry and related industries as well as the biodegradable fraction of industrial and municipal wastes. • Categorisation of Biofuels ○ **First Generation:** Produced from food crops like maize, corn, sugar cane, rapeseed, palm, and soybean into ethanol and biodiesel, using a similar process to that used in beer and wine-making. ○ **Second Generation:** Produced from non-food crops and organic agricultural waste, which contain cellulose. ○ **Third Generation**: Derived from algae. Also known as green hydrocarbons ○ **Fourth Generation:** Produce sustainable energy as well as capture and store CO_2 by converting biomass materials, which have absorbed CO_2 while growing, into fuel.
Defence Technology and Trade Initiative (DTTI)	**Context** As part of efforts for co-production and co-development of defence equipment under the Defence Technology and Trade Initiative (DTTI), India and the U.S. agreed on a revised Statement of Intent (SOI) to strengthen the dialogue by "pursuing detailed planning and making measurable progress" on several specific projects. What is the Defence Technology and Trade Initiative (DTTI)? • Created in 2012, under the Obama administration. • Aim: To enhance cooperation between India and the USA in the defence production and trade sectors by overcoming impediments due to "unique national bureaucratic structures, acquisition models, and budget processes. • It involves bilateral dialogues and engagements between senior-level representatives from India and the US. **Four Joint Working Groups** • Four Joint Working Groups focused on land, naval, air and aircraft carrier technologies had been established under the DTTI to promote mutually agreed projects. • The two sides recently signed the first project agreement for Air-Launched Unmanned Aerial Vehicle under the Joint Working Group Air Systems. **Defence Industry Collaboration Forum** • A virtual expo of the Defence Industry Collaboration Forum was also conducted • This forum offers an opportunity for Indian and U.S. industries to be directly involved in DTTI and facilitates dialogue between government and industry on issues that impact industrial collaboration.
Goa Maritime Conclave (GMC) 2021: Closing remarks	Context The Navy demonstrated its submarine rescue capability, available with very few countries in the Indian Ocean Region (IOR), to delegations of Indian Ocean countries during the Goa Maritime Conclave (GMC) 2021. Closing remarks at GMC • Chief of the Naval Staff Admiral proposed "four guiding principles for the future editions: ○ iterative and incremental gains, ○ harnessing complementarities, ○ synchronisation and focussed operations, ○ upskilling and upscaling the existing capabilities. **Common Maritime Priorities** • India and 12 other nations have adopted a declaration on "Common Maritime Priorities" that will include surveillance, patrolling and common goals of ensuring safe seas. • MoU between India and Singapore

	• India and Singapore have signed a Memorandum of Understanding (MoU) to exchange practices on submarine rescue and discussions were on with more countries to have arrangements for them to utilise this mechanism. **Deep-submergence rescue vehicle** • The Navy has procured two DSRVs from the U.K., of which the first one was operationalised at the end of 2018 in Mumbai and the second at Visakhapatnam in early 2019. • The system can go to a maximum depth of 650 metres and rescue 14 people in one go. • The DSRVs are designed to be agile and easily transportable to far-off places • The DSRV, attached to mother ship INS Sabarmati, could be transported by heavy transport aircraft like IL-76 and C-17
Tech NEEV/नींव @75	**Context** Union Minister of State for the Ministry of Science and Technology inaugurated "Tech NEEV/ **नींव** @75" as part of Azadi ka Amrit Mahotsav and interacted with successful start-ups including those from the tribal communities on the occasion of Janjatiya Gaurav Diwas. Key takeaways • Science Technology and Innovation (STI) Hubs: The Government will be setting up 30 Science Technology and Innovation (STI) Hubs in different parts of the country for Scheduled Tribes (STs) by end of 2022 to promote scientific talent among tribal communities and for their overall socio-economic development. ○ Out of 75 proposed STI Hubs for SCs/STs, 20 have already been established by Department of Science and Technology which will directly benefit 20,000 people through various interventions spreading across farm, non-farm and other allied livelihood sectors. • Tech NEEV is a year-long celebration highlighting the impact of Science Technology Innovation (STI) in empowering communities for creating equitable inclusive economic growth. • The 75 hour programme includes experience sharing of beneficiaries, community change leaders, societal changemakers conclave and round table discussions
NaVIC	Navigation with Indian Constellation (NAVIC) is India's indigenous global navigation satellite system. • NAVIC consists of a constellation of three geostationary, four geosynchronous and two on-standby satellites. • NAVIC will facilitate accurate real-time positioning and timing services over India and the region around it extending to 1,500 km. **Applications of NAVIC** • Terrestrial, aerial and marine navigation • Disaster management • Vehicle tracking and fleet management • Integration with mobile phones • Precise timing, mapping and geodetic data capture • Terrestrial navigation aid for hikers and travelers • Visual and voice navigation for drivers
The International Commission to Reignite the Fight Against Smoking	**Context** A report on smoking was recently released by "The International Commission to Reignite the Fight Against Smoking", which makes specific recommendations to achieve the goal of ending smoking worldwide. About the commission • The commission has members from the U.S., the U.K., South Africa, Indonesia and India. • It examines several important issues, including the trends in tobacco use, challenges to cessation efforts, the emergence of technological innovations, lessons from the COVID-19 pandemic, etc. **Key findings**

	• All countries ban marketing and direct sales of tobacco products to children, but in low-to-middle income countries these prohibitions are not rigorously enforced. • Despite prohibitions in India, many schools have nearby vendors displaying tobacco products which are appealing to children and youth. An estimated 54% of the points of sale had no visible health warning. • India is among countries with the lowest quit rates for smoking. The quit rates for men are less than 20%. • China and India are home to more than 500 million tobacco users between the ages of 16 and 64. • Tobacco prevalence in India is three times higher among men than women. India also accounts for some of the highest rates of smokeless tobacco use and oral cancer in the world. **Recommendations** • Adopting best practices to combat misinformation • Build a healthier information environment to reduce harm from tobacco. • Leveraging multi-national, multi-disciplinary and participatory foresight studies. • Advocating risk-proportionate regulations as a means of making it easier for smokers to switch quit
India's first Virtual Science Lab for children	**In News:** India's first Virtual Science Lab for children under CSIR Jigyasa programme, which will also connect students with scientists across the country has been launched. • This will not only take science to all segments of students in every corner of the country, but it is also in tune with the National Education Policy (NEP), where students are allowed to choose any subject and the concept of streams has been disbanded • CSIR has partnered with IIT Bombay to develop a Virtual Lab platform under CSIR Jigyasa programme, which facilitates classroom learning with laboratory research for school students. • The main aim of the Virtual Lab is to provide quality research exposure and innovative pedagogy for school students to drive their scientific curiosity based on an online interactive medium with simulated experiments, pedagogy based content, videos, chat forums, animations, gaming, quiz, facility sharing, webinars etc. • Will enable curiosity driven research based concepts, encourage higher order thinking skills, promote entrepreneurship and develop passion about science
New Crypto Bill	**Context** The Cryptocurrency and Regulation of Official Digital Currency Bill, 2021 will introduce in the winter session of Parliament **Key Provisions** • Regulate cryptocurrency and ostensibly ban all private cryptocurrencies. • Create a facilitative framework for creation of the official digital currency to be issued by the RBI. • So far, no public consultations have been held. **What is the Present status?** • An inter-ministerial panel on cryptocurrency recommended that all private cryptocurrencies, except any virtual currencies issued by state, will be prohibited in India. • RBI has raised concerns about the cryptocurrencies. **What are Cryptocurrencies?** • Digital currencies in which encryption techniques are used to regulate the generation of units of currency. • Examples: Bitcoin, Ethereum etc.

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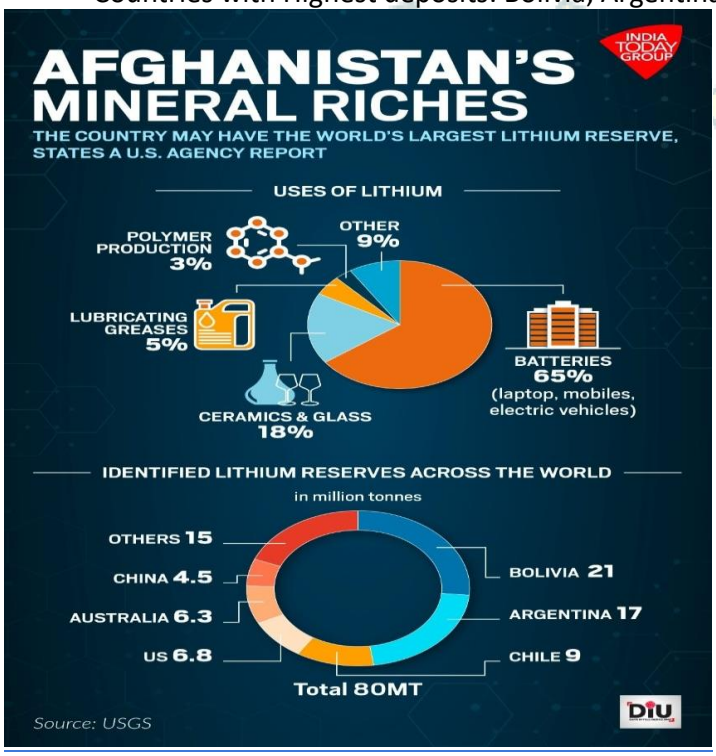
BASIC group of countries	**Context** On the opening day of the COP26, Indian Environment Minister delivered a statement on behalf of the BASIC group of countries — Brazil, South Africa, India and China. • These major developing economies are significant polluters but bear diminished responsibility for the carbon dioxide. • They also have low per capita emissions because of their significant populations. **Demands of the BASIC countries** • Conclude Paris Agreement Rulebook at COP26. • The Rulebook will set the Paris Agreement in motion by laying out the tools and processes to ensure it is implemented fairly and properly. • CBDR-RC: Full effect must be given to implementation of the principles of Equity and Common but Differentiated Responsibilities and Respective Capabilities (CBDR-RC). • Accord time and policy space: Developing countries must be accorded time, policy space and support to transition towards a low emissions future. **About BASIC** • The BASIC group was formed as the result of an agreement signed by the four countries on November 28, 2009. • Countries – Brazil, South Africa, India and China. **Significance of the grouping:** • These nations have common positions on reducing greenhouse gas emissions and raising the massive funds that are needed to fight climate change. • The grouping is significant because Brazil, South Africa, India and China together have one-third of the world's geographical area and nearly 40% of the world's population, and when they unitedly speak in one voice this shows their determination.
India and World Bank	**In News:** Government of India, the Government of Meghalaya and the World Bank signed a $40 million health project for the state of Meghalaya that will improve the quality of health services and strengthen the state's capacity to handle future health emergencies, including the COVID-19 pandemic. • Enhance the management and governance capabilities of the state and its health facilities • Expand the design and coverage of the state's health insurance program • Improve the quality of health services through certification and better human resource systems • Enable efficient access to medicines and diagnostics All 11 districts of the state will benefit from the project- • Benefit health sector staff at the primary and secondary levels by strengthening their planning and management capabilities and building their clinical skills • Enable women to better utilize healthcare services at the community level.
Goa Maritime Conclave	**Part of:** Prelims and GS II - International Relations and GS-III - Defence and security Context The biennial Goa Maritime Conclave (GMC) under the Naval War College, Goa is scheduled to be held on November 7 and 9. **Theme:** "Maritime security and emerging non-traditional threats: a case for proactive role for IOR Navies". • It will be the third edition. • The GMC is the Indian Navy's outreach initiative providing a multinational platform to harness the collective wisdom on maritime security **Key takeaways**

	• The Indian Navy and countries of the Indian Ocean Region (IOR) will discuss the significance of interoperability to effectively deal with emerging and future maritime security challenges in the region. • Participating countries: Bangladesh, Comoros, Indonesia, Madagascar, Malaysia, Maldives, Mauritius, Myanmar, the Seychelles, Singapore, Sri Lanka and Thailand. • Discussions in the domains of hydrography and maritime information sharing will also take place • Visitors shall also witness the 'Make in India exhibition' and the capabilities of Deep Submergence Rescue Vessel (DSRV) for submarines at the Marmugao Port Trust, Goa.
UAE and Bahrain hold naval exercise with Israel	**Context** The United Arab Emirates and Bahrain are holding their first joint naval exercise with Israel. • The five-day manoeuvres in the Red Sea, which is linked to the Mediterranean through the Suez Canal, are intended to "enhance interoperability between participating forces. • The exercise aims to safeguard freedom of navigation and the free flow of trade, which are essential to regional security and stability. **About Red Sea** • The Red Sea is a semi-enclosed tropical basin, bounded by northeastern Africa, to the west, and the Arabian peninsula, to the east. • The basin extends between the Mediterranean Sea, to the north-west, and the Indian Ocean, to the south-east. • At the northern end, it separates into the Gulf of Aqaba and the Gulf of Suez, which is connected to the Mediterranean Sea via the Suez Canal. • At the southern end, it is connected to the Gulf of Aden, and the outer Indian Ocean, via the Strait of Bab-el-Mandeb. • It is one of the youngest oceanic zones on Earth. • The unique habitats of the Red sea support a wide range of marine life, including sea turtles, dugongs, dolphins and many endemic fish species. • Coral reefs mainly extend along the northern and central coasts
APEC summit, 2021	**Context** The Asia-Pacific Economic Cooperation (APEC) was hosted by New Zealand recently. Key highlights of the summit

	• The leaders concluded the 2021 APEC Economic Leaders' Meeting by adopting a declaration under the theme of 'Join, Work, Grow, Together'.
	• Commitments:
	  ○ Accelerating economic recovery and achieving sustainable and inclusive growth
	  ○ Tackling climate change
	  ○ Empowering groups with untapped economic potential
	  ○ Addressing the digital divide.
	• Leaders also endorsed the Aotearoa Plan of Action. It is blueprint to implement the APEC Putrajaya Vision 2040, which was adopted at the 2020 APEC Economic Leaders' Meeting.
	  ○ Aotearoa Plan of Action aims for an "open, dynamic, resilient and peaceful Asia-Pacific community by 2040
	• APEC summit-2022 will be held in Thailand.
	About APEC
	• It is an inter-governmental forum for 21 member economies in the Pacific Rim that promotes free trade throughout the Asia-Pacific region.
	• It was started in 1989 in response to the growing interdependence of Asia-Pacific economies and the advent of regional trade blocs in other parts of the world.
	• It aimed to establish new markets for agricultural products and raw materials beyond Europe.
	• Headquarter: Singapore.
	• The group represents approximately 60% of world GDP and 48% of world trade in 2018.
	• Official observers: the Association of Southeast Asian Nations Secretariat (ASEAN), the Pacific Economic Cooperation Council (PECC) and the Pacific Islands Forum Secretariat (PIF).
	• Its full members are: Australia; Brunei Darussalam; Canada; Chile; China; Colombia; Ecuador; Hong Kong, China; Indonesia; Japan; Korea; Malaysia; Mexico; New Zealand; Peru; Philippines; Singapore; Pacific Islands Forum; Chinese Taipei; Thailand; USA; and Vietnam.
	• India is not a Member.
	  ○ India had requested membership in APEC, and received initial support from the United States, Japan, Australia and Papua New Guinea.
	  ○ Officials have decided not to allow India to join as India does not border the Pacific Ocean, which all current members do.

Democracy Summit of the USA	**Context** India will participate in U.S.A's "Summit for Democracy" to be held on 9th and 10th December. **Key takeaways** • More than 100 democratic countries are invited to participate at the summit. • The summit is expected to include "individual and collective commitments to defend democracy and human rights at international level. • Key themes: "Defending against authoritarianism", "Addressing and fighting corruption", and "Advancing respect for human rights". • An attempt was earlier made by the U.S. and the U.K. to expand the G-7 meeting into a "D-10" or group of 10 democracies that would represent 60% of the global population, including Australia, India and South Korea, along with the G-7 group. ○ The Group of Seven (G7) is an inter-governmental political forum consisting of Canada, France, Germany, Italy, Japan, the United Kingdom and the United States
"When schools shut: Gendered impacts of COVID-19	**Context** A new study by UNESCO, titled "When schools shut: Gendered impacts of COVID-19 school closures" was recently released. **Key findings of the report** • Threat to gender equality: Educational disruption due to prolonged closure of schools across the globe will have alarming effects on learning loss and also poses threat to gender equality.

school closures" – A Global study by UNESCO	• Different impact: Girls and boys, young women and men were affected differently by school closures, depending on the context.
	• At the peak of the pandemic, 1.6 billion students in 190 countries were affected by school closures.
	• They lost access to education, but also to the myriad benefits of attending school, at an unparalleled scale.
	• Gender norms and expectations can affect the ability to participate in and benefit from remote learning.
	  ○ In poorer contexts, girls' time to learn was constrained by increased household chores.
	  ○ Boys' participation in learning was limited by income-generating activities.
	  ○ Girls faced difficulties in engaging in digital remote learning modalities due to limited access to Internet-enabled devices, a lack of digital skills and cultural norms restricting their use of technological devices.

Lithium deposits	**Context** Chinese companies have begun "on-site inspections" of possible projects to tap lithium deposits in Afghanistan.
	• Afghanistan also has significant reserves of copper, gold, gemstones, beryllium, iron ore, marble, oil & gas, and rare earth elements.
	• Recent estimates suggest the worth of untapped minerals could be as high as $3 trillion.
	About Lithium
	• A 2010 US study revealed that Afghanistan could have among the world's largest deposits of lithium.
	• Lithium is considered key to global agenda of switching to electric vehicles
	• Uses: Rechargeable batteries
	  ○ ceramics and glass
	  ○ Lubricating greases
	  ○ Polymer production
	• Lithium consumption for batteries has increased significantly in recent years
	• The world has an identified lithium reserves of 80 million tonnes.
	• Countries with Highest deposits: Bolivia, Argentina, Chile and USA.
	 

Israel and Morocco ink defence pact	Context Israel and Morocco signed a landmark agreement that lays the foundation for security cooperation, intelligence sharing and future arms sales. • Morocco established formal relations with Israel in 2020 as part of the U.S.-brokered Abraham Accords. • Morocco, UAE, Bahrain and Sudan signed agreements to normalize relations with Israel in 2020 as part of the Abraham Accords, which were brokered by the Trump administration. **About Morocco** • The northwesternmost country in the Maghreb region of North Africa. • It overlooks the Mediterranean Sea to the north and the Atlantic Ocean to the west **About Abraham Accords** • A joint statement between Israel, UAE, and USA, reached on August 13, 2020. • The term was also used to refer collectively to agreements between Israel, UAE and Bahrain.
Shanghai Cooperation Organisation (SCO)	**Context** 20th meeting of the SCO Council of Heads of Government was recently held. **About Shanghai Cooperation Organization** • The Shanghai Cooperation Organization is a political, economic, and Regional Anti-Terrorist Structure of many important countries including India and its neighborhood. • India is full member of the SCO. • **SCO Secretariat**: Beijing • **8 members:** Russia, China, Tajikistan, Uzbekistan, Kazakhstan, Kyrgyzstan, India and Pakistan. • The internal policy of the forum is inspired by the **Shanghai Spirit**: based on the principles of mutual trust, mutual benefit, equality, mutual consultations, and a desire for common development. • **SCO's Regional Anti-Terrorist Structure (RATS)**: Permanent organ of the SCO which serves to promote cooperation of member states against terrorism, separatism, and extremism. ○ It is headquartered in Tashkent.
India and USA agree on a transitional approach on Equalisation Levy 2020	**In News:** India and United States have joined 134 other members of the OECD/G20 Inclusive Framework (including Austria, France, Italy, Spain, and the United Kingdom) in reaching agreement on the Statement on a Two-Pillar Solution to Address the Tax Challenges Arising from the Digitalization of the Economy. • India and United States have agreed that the same terms that apply under the October 21 Joint Statement shall apply between the United States and India with respect to India's

	charge of 2% equalisation levy on e-commerce supply of services and the United States' trade action regarding the said Equalisation Levy.

Bangladesh: Developing Nation Status	**Context**: India congratulated Bangladesh on the country's transition from a less-developed country to a developing nation status.
	• The two countries will be celebrating December 6 as Maitri Divas, to mark 50 years of Bangladesh's independence and its bilateral ties with India, which was the first country to recognise its independence.
	Key Highlights
	• The India-Bangladesh CEO Forum will meet soon for the first time, even as the two countries work towards finalising a Comprehensive Economic Partnership Agreement (CEPA) to deepen trade and economic ties as partners rather than competitors.
	• India highlighted that improving connectivity is "imperative" for expanding and realising the potential for bilateral trade and investments.
	• Bangladesh is India's biggest trade partner in South Asia with a volume of over $10 billion.
	• India had sent over one crore COVID-19 vaccine doses to the country and has extended concessional credit lines of about $8 billion, the highest for any single country.
	• A bilateral textile industry forum has also been constituted to facilitate cooperation in the textile sector.
	• India is also developing two Indian economic zones at Mirsarai and Mongla.
	• India has identified five focus areas that could strengthen bilateral economic ties:
	  ○ Technology
	  ○ Connectivity
	  ○ Entrepreneurship
	  ○ Health
	  ○ Tourism.

Exercise 'SITMEX'	**Context** Indian Naval Ship (INS) Karmuk, an indigenously built Missile Corvette is participating in the 3rd edition of India, Singapore and Thailand Trilateral Maritime Exercise SITMEX – 21, from 15 to 16 Nov 21 in Andaman Sea. **Key takeaways** • SITMEX is being conducted annually since 2019 with an aim to enhance mutual inter-operability and imbibing best practices between Indian Navy (IN), RSN and RTN. • SITMEX-21 will fortify the long-standing bond of friendship and further enhance the cooperation between the participating navies towards augmenting the overall maritime security in the region.
World Bank's STARS project	**Context** Performance of World Bank aided project STARS was reviewed recently. **What is STARS?** • STARS stands for Strengthening Teaching-Learning and Results for States Program (STARS). • It is a new Centrally Sponsored Scheme • **Ministry:** Department of School Education and Literacy, Ministry of Education. • **Objective:** To improve the quality and governance of school education in six Indian states. • Six states are- Himachal Pradesh, Kerala, Madhya Pradesh, Maharashtra, Odisha, and Rajasthan. • **Beneficiaries:** Some 250 million students (between the age of 6 and 17) in 1.5 million schools, and over 10 million teachers will benefit from the program. • Reform initiatives under the project include • Focusing more directly on the delivery of education services by providing customized local-level solutions. • Addressing demands from stakeholders, especially parents, for greater accountability; giving special attention to students from vulnerable section. • Equipping teachers to manage this transformation. • Recognizing that teachers are central to achieving better learning outcomes.

	• Investing more in developing India's human capital needs by strengthening foundational learning for children.
U.S.-India Trade Policy Forum (TPF)	**Context** U.S. Trade Representative was recently in India to revive the U.S.-India Trade Policy Forum (TPF) after a four-year break. India's Regulatory norms as Key impediments to bilateral trade • Market access restrictions • High tariffs • Unpredictable regulatory requirements • Restrictive trade measures **Areas with huge potential for growth** • Digital economy • Services • Health-related trade • Agriculture **Common challenges** • Climate change and sustainability • Vulnerable supply chains • • Promoting market-oriented principles and structures
Defence alliance, AUKUS	**Context** Australia, USA and UK recently Signed an agreement allowing the exchange of sensitive "naval nuclear propulsion information" between their nations under AUKUS alliance. **Key takeaways** • It is the first agreement on the technology to be signed since formation of the alliance. ○ AUKUS was particularly formed to confront strategic tensions in the Pacific where China-US rivalry is growing. • The deal will help Australia to complete an 18-month study into submarine procurement. **About AUKUS deal** • Under the AUKUS deal, Australia would obtain eight state-of-the-art, nuclear-powered but conventionally armed submarines capable of stealthy, long-range missions.

AK-203 deal approved	**Context** The Defence Acquisition Council (DAC) has approved the long-pending deal for the manufacture of 6.71 lakh AK-203 Russian assault rifles in India.
	Key takeaways
	• The two countries had signed an **Inter-Governmental Agreement** (IGA) in 2019.
	• A joint venture was later set up at Korwa in Uttar Pradesh for manufacturing the rifles.
	• **Igla-S Very Short Range Air Defence (VSHORAD) systems** may receive clearance soon.
	• A proposal for the procurement of the GSAT-7C communication satellite for the Indian Air Force (IAF) has also been approved.
	  ○ **Advantage:** Induction of the GSAT-7C satellite and ground hubs for Software Defined Radios (SDRs) will enhance the ability of the armed forces to communicate beyond Line of Sight (LoS).
	What is the Defence Acquisition Council?
	• It is the highest decision-making body in the Defence Ministry.
	• It decides new policies and capital acquisitions for the three services (Army, Navy and Air Force) and the Indian Coast Guard.
	• **Chairman:** Minister of Defence
	  • It was formed, after the Group of Ministers recommendations on 'Reforming the National Security System', in 2001, post Kargil War (1999).

MISCELLANEOUS

Dairy Sahakar scheme	• Under Dairy Sahakar, financial support will be extended by NCDC to eligible cooperatives for activities such as bovine development, milk procurement, processing, quality assurance, value addition, branding, packaging, marketing, transportation and storage of milk and milk products, exports of dairy products within the overall objectives of "Doubling the farmers income" and "Atmanirbhar Bharat. • There will also be a convergence with various schemes of Government of India and / or of State Government/UT Administration/ Development agencies/ bilateral/multilateral assistance/ CSR mechanism is encouraged
Indology	The academic study of the history and cultures, languages, and literature of India and as such is a subset of Asian studies.
Rashtriya Ekta Divas- National Unity Day	October 31; to pay tributes to veteran freedom fighter Sardar Vallabhbhai Patel, who was also the country's first home minister whose contribution in convincing many of the princely states to join the Union of India after Independence remains especially notable.
Covovax	• Biotechnology firm Novavax Inc and its partner Serum Institute of India (SII) have received the first emergency use authorisation (EUA) for Novavax's COVID-19 vaccine in Indonesia. • The SII will manufacture the vaccine in India and market it in Indonesia under the brand name Covovax.
Warrior woman Onake Obavva	• From this year, the Karnataka government has decided to celebrate 'Onake Obavva Jayanti' on November 11 throughout the state. • Onake Obavva is a woman warrior who fought the forces of Hyder Ali single-handedly with a pestle ('onake' in Kannada) in Chitradurga in the 18th century. • She died protecting the Chitradurga Fort, which was ruled by Madakari Nayaka in the 18th century.
Landraces	• Among the winners of this year's Padma awards is Rahibai Popere, popularly known as Seedmother, from Akole taluka of Ahmednagar, Maharashtra. • Her Padma Shri is a recognition of her work that has helped save hundreds of landraces (wild varieties of commonly grown crops) at the village level. • Landraces refer to naturally occurring variants of commonly cultivated crops. These are opposed to commercially grown crops, which are developed by selective breeding (hybrids) or through genetic engineering to express a certain trait over others. • Amid the threat of climate change, a challenge before scientists and policymakers is to develop varieties that can withstand both abiotic and biotic stresses. • Naturally occurring landraces have a large pool of still untapped genetic material, which can provide solutions.
Indira Gandhi – Birth anniversary	• An Indian politician, stateswoman and a central figure of the Indian National Congress. • She was the first and, to date, the only female Prime Minister of India. • Indira Gandhi was the daughter of Jawaharlal Nehru, the first prime minister of India. • She served as Prime Minister from January 1966 to March 1977 and again from January 1980 until her assassination in October 1984 (assassins blamed her for the action code-named Operation Blue Star), making her the second longest-serving Indian Prime Minister after her father. • She went to war with Pakistan in support of the independence movement and war of independence in East Pakistan, which resulted in an Indian victory and the creation of Bangladesh, as well as increasing India's influence to the point where it became the regional hegemon of South Asia. • Citing fissiparous tendencies and in response to a call for revolution, Gandhi instituted a state of emergency from 1975 to 1977 where basic civil liberties were suspended and

	the press was censored. Widespread atrocities were carried out during the emergency. In 1980, she returned to power after free and fair elections.
Cleanest Cities of India	• Indore wins the title of 'Cleanest City' for fifth consecutive time under Swachh Survekshan • Nine 5-Star Cities, 143 Cities 3-Star Garbage Free Cities • Indore, Navi Mumbai and Nellore emerge as Top Performers in SafaiMitra Suraksha Challenge • Varanasi emerged as the 'Best Ganga Town' • Maharashtra has successfully bagged a total of 92 awards, the highest by any State in this year's Survekshan, followed by Chhattisgarh with 67 awards. Also, a futuristic and state-of-the-art spatial GIS platform was launched that will further propel the Mission towards smart, data driven decision making. Award: Organized to recognize the good work done for Swachhata by towns/ cities, States and Union Territories under various initiatives of the Swachh Bharat Mission (Urban), viz. Swachh Survekshan 2021, Safaimitra Suraksha Challenge, and certifications for Garbage Free Star rating for cities
101st member country of the International Solar Alliance:	The United States of America
Janjatiya Gaurav Divas: 15th November, the birth anniversary of Bhagwan Birsa Munda	• Revered as Bhagwan by tribal communities across the country. • Birsa Munda fought bravely against the country against the exploitative system of the British colonial system and spearheaded movement against British oppression giving a call for 'Ulgulan' (Revolution). • The declaration acknowledges the glorious history and cultural heritage of tribal communities. • The day will be celebrated every year and would recognize the efforts of the tribals for preservation of cultural heritage and promotion of Indian values of valour, hospitality and national pride.

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POLITY AND GOVERNANCE

All India Judicial Service

Context: The central government is preparing to give a fresh push to the establishment of an All India Judicial Service (AIJS) on the lines of the central civil services.

What is the proposed All India Judicial Service (AIJS)?

- The AIJS is a reform push to centralise the recruitment of judges at the level of additional district judges and district judges for all states.
- In the same way that the Union Public Service Commission conducts a central recruitment process and assigns successful candidates to cadres, judges of the lower judiciary are proposed to be recruited centrally and assigned to states.

How are district judges currently recruited?

- Articles 233 and 234 of the Constitution of India deal with the appointment of district judges, and place it in the domain of the states.
- The selection process is conducted by the State Public Service Commissions and the concerned High Court, since High Courts exercise jurisdiction over the subordinate judiciary in the state. Panels of High Court judges interview candidates after the exam and select them for appointment.
- All judges of the lower judiciary up to the level of district judge are selected through the Provincial Civil Services (Judicial) exam. PCS(J) is commonly referred to as the judicial services exam.

Why has the AIJS been proposed?

- The idea of a centralised judicial service was first mooted in the Law Commission's 1958 'Report on Reforms on Judicial Administration'.
- The idea was to ensure an efficient subordinate judiciary, to address structural issues such as varying pay and remuneration across states, to fill vacancies faster, and to ensure standard training across states.
- A statutory or constitutional body such as the UPSC to conduct a standard, centralised exam to recruit and train judges was discussed.
- The idea was proposed again in the Law Commission Report of 1978, which discussed delays and arrears of cases in the lower courts.
- In 2006, the Parliamentary Standing Committee on Personnel, Public Grievances, Law and Justice in its 15th Report backed the idea of a pan-Indian judicial service, and also prepared a draft Bill.

What is the judiciary's view on the AIJS?

- In 1992, the Supreme Court in All India Judges' Assn. (1) v. Union of India directed the Centre to set up an AIJS. In a 1993 review of the judgment, however, the court left the Centre at liberty to take the initiative on the issue.
- In 2017, the Supreme Court took suo motu cognizance of the issue of appointment of district judges, and mooted a "Central Selection Mechanism".
- Senior advocate Arvind Datar, who was appointed amicus curiae by the court, recommended conducting a common examination instead of separate state exams. Based on the merit list, High Courts would then hold interviews and appoint judges.

What is the opposition to the AIJS?

- A centralised recruitment process is seen as an **affront to federalism** and an encroachment on the powers of states granted by the Constitution. This is the main contention of several states, which have also argued that central recruitment would not be able to address the unique concerns that individual states may have.
- Language and representation, for example, are key concerns highlighted by states. Judicial business is conducted in regional languages, which could be affected by central recruitment.
- Also, reservations based on caste, and even for rural candidates or linguistic minorities in the

state, could be diluted in a central test, it has been argued.

- The opposition is also based on the constitutional concept of the separation of powers. A central test could give the executive a foot in the door for the appointment of district judges, and dilute the say that High Courts have in the process.
- Additionally, legal experts have argued that the creation of AIJS will not address the structural issues plaguing the lower judiciary.
- The issue of different scales of pay and remuneration has been addressed by the Supreme Court in the 1993 All India Judges Association case by bringing in uniformity across states.
- Experts argue that increasing pay across the board and ensuring that a fraction of High Court judges are picked from the lower judiciary, may help better than a central exam to attract quality talent.

Why is the government seeking to revive the idea of AIJS?

- The government has targeted the reform of lower judiciary in its effort to improve India's **Ease of Doing Business** ranking, as efficient dispute resolution is one of the key indices in determining the rank.
- AIJS is considered by the government as a step in the direction of ensuring an **efficient lower judiciary**.
- The government has countered the opposition by states, saying that if a central mechanism can work for administrative services — IAS officers learn the language required for their cadre — it can work for judicial services too.

Connecting the dots

- Indianisation of Judiciary
- Judiciary and AI
- Women & Judiciary
- Language in Judiciary
- Judicial Administration Reform

Judicial Transfers

Context: The transfer of Chief Justice Sanjib Banerjee from the Madras High Court to the Meghalaya High Court has given rise to a controversy over the question whether judicial transfers are made only for administrative reasons or have any element of 'punishment' behind them.

- In 2019, Justice Vijaya K. Tahilramani, another Chief Justice of the Madras High Court who was transferred to Meghalaya, chose to resign.

What does the Constitution say on the transfer of judges?

- **Article 222** of the Constitution provides for the transfer of High Court judges, including the Chief Justice. It says the President, after consultation with the Chief Justice of India, may transfer a judge from one High Court to any other High Court.
- It also provides for a compensatory allowance to the transferred judge.
- This means that the executive could transfer a judge, but **only after consulting the Chief Justice of India.**
- From time to time, there have been proposals that **one-third of the composition of every High Court** should have judges from other States.

What is the Supreme Court's view on the issue?

In **Union of India vs. Sankalchand Himatlal Sheth (1977),** the Supreme Court **rejected the idea** that High Court judges can be transferred **only with their consent**.

- It reasoned that the transfer of power can be exercised only in public interest;
- secondly, the President is under an obligation to consult the Chief Justice of India, which meant that all relevant facts must be placed before the Chief Justice of India;
- thirdly, that the Chief Justice of India had the right and duty to elicit and ascertain further facts from the judge concerned or others.

In S.P. Gupta vs. President of India (1981), also known as the 'Judges' Transfer Case' and, later, the First Judges Case, the Supreme Court once again had an opportunity to consider the issue.

- Among other issues, it had to consider the validity of the transfer of two Chief Justices as well as a circular from the Law Minister proposing that additional judges in all High

Courts may be **asked for their consent** to be appointed as permanent judges in any other High Court, and to name three preferences.

- The Minister's reasoning was that such transfers would **promote national integration** and help avoid parochial tendencies bred by caste, kinship and other local links and affiliations.
- The majority ruled that consultation with the Chief Justice did not mean 'concurrence' with respect to appointments.
- In effect, it **emphasised the primacy of the executive in the matter** of appointments and transfers.
- However, this position was **overruled in the 'Second Judges Case' (1993**). The opinion of the Chief Justice of India, formed after taking into the account the views of senior-most judges, was to have primacy. Since then, appointments are being made by the **Collegium.**

What is the current procedure for transfers?

- As one of the points made by the 'Second Judges Case' was that the opinion of the Chief Justice of India ought to mean the **views of a plurality of judges**, the concept of a 'Collegium of Judges' came into being.
- In the collegium era, the proposal for transferring a High Court judge, including a Chief Justice, should **be initiated by the Chief Justice of India,** "whose opinion in this regard is determinative".
- The **consent of the judge is not required.**
- All transfers are to be made in public interest, i.e., **for promoting better administration of justice** throughout the country.
- For transferring a judge other than the Chief Justice, the Chief Justice of India should take the views of the **Chief Justice of the court concerned**, as well as the Chief Justice of the court to which the transfer is taking place.
- The Chief Justice of India should also take into account the views of one or more Supreme Court judges who are in a position to offer their views in the process of deciding whether a proposed transfer should take place.
- In the case of transfer of a Chief Justice, only the views of one or more knowledgeable Supreme Court judges need to be taken into account.
- The **views should all be expressed in writing**, and they should be considered by the Chief Justice of India and four senior-most judges of the Supreme Court, which means, the full Collegium of five.
- The **recommendation is sent to the Union Law Minister** who should submit the relevant papers to the Prime Minister. The Prime Minister then advises the **President on approving the transfer.**

What makes transfers controversial?

- Transfer orders become controversial when sections of the public feel that there is a **punitive element behind the decision** to move a judge from one High Court to another.
- As a matter of practice, the Supreme Court and the government **do not disclose the reason for a transfer.** For, if the reason is because of some adverse opinion on a judge's functioning, disclosure would **impinge on the judge's performance** and independence in the court to which he is transferred.
- On the other hand, the absence of a reason sometimes **gives rise to speculation** whether it was effected because of complaints against the judge, or if it was a sort of punishment for certain judgments that inconvenienced the executive.

Connecting the dots

- Indianisation of Judiciary
- Judiciary & AI
- Women & Judiciary
- Language in Judiciary
- Judicial Administration Reform

Pre- Legislative Consultation Policy (PLCP)

Context: The Union Government has listed 29 Bills (26 new and three pending) to be tabled in the winter session of Parliament.

About Pre-Legislative Consultation Policy (PLCP)

- **Objective**: The PLCP was formulated based on the broad recommendations of the National Advisory Council headed by Sonia Gandhi (2013) and the National Commission to Review the Working of the Constitution

(2002). It aimed to create an institutionalised space for public participation in lawmaking processes.

- **Mandating Placing in Domain**: In 2014, the Pre-Legislative Consultation Policy was adopted which mandated that whenever the Government makes any law, it must place a draft version of it in the public domain for at least 30 days.
- **Comprehensive details**: The policy also says that along with the draft, a note explaining the law in simple language and justifying the proposal, its financial implication, impact on the environment and fundamental rights, a study on the social and financial costs of the bill, etc. should be uploaded.
- **Transparency on Public Feedback**: The respective departments should also upload the summary of all the feedback that they receive on the circulated draft.

Why is it important?

- **Strengthen Democracy**: This policy provides a forum for citizens and relevant stakeholders to interact with the policymakers.
- **Managing Discontent:** Protests in the recent past over laws such as the farm laws, the RTI Amendment Act, the Transgender Persons (Protection of Rights) Act, etc. have all highlighted that there is discontent among relevant stakeholders and the public at large since they were not looped in while framing such laws.
- **Changed Citizen-State relationship:** Public consultations enhance transparency, increase accountability and could result in the building of an informed Government where citizens are treated as partners and not as subjects.
- **For example**, concerns raised by civil society members (#SaveTheInternet campaign) were addressed by the Telecom Regulatory Authority in its framing of the net neutrality rules after extensive consultation and deliberation processes adopted by them.

What is the status of its implementation?

- **Poor Implementation:** Since the inception of the policy, 227 of the 301 bills introduced in Parliament have been presented without any prior consultation.
    - During the 16th Lok Sabha (May 2014 to May 2019) 186 bills were introduced in Parliament, of which 142 saw no consultation prior to introduction.
    - During the 17th Lok Sabha (June 2019 to present), 115 bills were introduced in Parliament, of which 85 saw no consultation prior to introduction.
- **Not Adhering to 30 day timeline:** Of the 74 placed in public domain for comment, at least 40 did not adhere to the 30-day deadline.
    - During the 16th Lok Sabha (May 2014 to May 2019) from the 44 bills placed in the public domain for receipt of comments, 24 did not adhere to the 30-day deadline.
    - During the 17th Lok Sabha (June 2019 to present), from the 30 bills placed in public domain for receipt of comment, 16 of them did not adhere to the 30-day deadline.

Why is implementation difficult?

- **Lacks Statutory Right**: Though it is a requirement that should be heeded by all the Government departments, the absence of a statutory or constitutional right has watered down its effect.
- **Requires Amendment in Parliamentary procedures:** The effective implementation of the policy requires subsequent amendments in executive procedural guidelines like the Manual of Parliamentary Procedures and Handbook on Writing Cabinet Notes.
- However, during a subsequent amendment to the Manual of Parliamentary Procedures, the Ministry of Parliamentary Affairs ignored the Ministry of Law and Justice when it requested them to incorporate PLCP provisions in the manual.

Way Ahead

- Incorporation of pre-legislative consultation in the procedures of the Cabinet, Lok Sabha, Rajya Sabha etc. should be prioritised.
- Similarly, it must be required of ministers while introducing the bill to place an addendum note on the details of the pre-legislative consultation.
- Empowering citizens with a right to participate in pre-legislative consultations through a statutory and a constitutional commitment could be a gamechanger.

ECONOMY

Informal Economy: Challenges & Opportunities

Context: The informal economy is a global and pervasive phenomenon.

Do You Know?

- India's estimated 450 million informal workers comprise 90 per cent of its total workforce, with 5-10 million workers added annually.
- Nearly 40 per cent of these employed with MSMEs.

According to Internal Labour Organisation -

- Approximately 60 percent of the world's population participates in the informal sector.
- Although this is mostly prevalent in emerging and developing economies, it is also an important part of advanced economies.
- In developing countries like India, large share of the population typically depends upon the informal economy. The economic growth and development in general and livelihood and wages in particular of the vast majority of workers in India crucially depend on the economic viability of the informal sectors.

According to Periodic Labour Force Survey -

- Over 90 percent of workers in India are informal workers. Out of these those engaged in rural areas is significantly more than urban areas.
- This is primarily because a large number of informal workers are engaged in farm or agricultural activites.
- Those in urban areas are involved primarily in manufacturing, trade, hotel and restaurant; construction; transport; storage and communications; and finance, business and real estate.

Challenges in the Informal Economy

Employment around the world remains below its pre-pandemic levels, reflecting a mix of negative output gaps, worker fears of on-the-job infection in contact-intensive occupations, childcare constraints, labor demand changes as automation picks up in some sectors, replacement income through furlough schemes or unemployment benefits helping to cushion income losses, and frictions in job searches and matching.

Government **diluted the labour laws**; then they drafted the rules of the Code on Social Security without really taking into consideration the plight of the informal sector workers.

- **Issues of Exclusion**: While on paper, the draft rules envisage wider coverage through the inclusion of informal sector and gig workers, at present the draft rules apply to manufacturing firms with over 299 workers. This leaves 71 per cent of manufacturing companies out of its purview.
- **Burden of Administrative Processes**: The draft rules mandate the registration of all workers (with Aadhaar cards) on the Shram Suvidha Portal to be able to receive any form of social security benefit. Failure to register (Aadhar – driven exclusion or lack of adequate knowledge about process) will make then ineligible for the benefits. Also, migrant workers face the challenge of mandatary updating information on the online portal at regular intervals.
- **Ambiguity on applicability of benefits**: It is unclear if a migrant worker with an Aadhaar card registered in her/his home state of Bihar be eligible for social security benefits in Gujarat where she/he is currently employed.
- **No-Right Based Framework:** The Code does not emphasize social security as a right, nor does it make reference to its provision as stipulated by the Constitution. In addition, it does not stipulate any appropriate grievance redressal mechanism which will leave millions of workers vulnerable without clear social protections.

Opportunities

The pandemic has thrown-up unprecedented challenges and divergences but also delivered enticing growth opportunities.

Refer: https://iasbaba.com/wp-content/uploads/2018/02/Gig-Economy-IASbaba.jpg

Service Exports As An Engine of Growth: Service exports are likely to be an important near term driver of growth. India's global market share of services has continued to rise, revealing a growing comparative

advantage. With the pandemic likely to provide a renewed thrust to off-shoring of services, India must stand ready to grab the opportunity, from both a regulatory and supply perspective.

Need of the hour:

- Upgrade the skills of those who are already in the informal sector with government support through easier access to credit, technology and availability of markets.
- A social security architecture to be provided by the government for informal sector workers.
- Less of regulation and more of support as against the government policy of more regulation and no support. Any attempt to regulate and bring the informal sector into the tax network will only add to costs without increasing productivity.
- Creating an eco-system to improve competitiveness and boost exports more broadly will be vital to India's growth prospects over the next decade.
- The formal and informal sectors are complementary to each other and any attempt to use one against the other will harm both. It is time to use the opportunity that the informal sector provides to strengthen and support it. This is not only essential for economic growth but the only way for growth with jobs.

Must Read:

- **The invisible women in India's labour market**
- **Gig Economy and Proposition-22**

Can you answer the following questions?

1. Should the informal sector be regulated? Discuss the pros and cons.

Taxation and Federalism

Context: Union Government reduced excise duty on petrol and diesel on the eve of Deepavali. While the reduction for petrol was ₹5, duty on diesel came down by ₹10.

Issues with Centre levying cess on Petrol & Diesel

- The Centre has been levying around ₹31 and ₹33 as **additional cess** on petrol and diesel, respectively, till the beginning of November.
- The Constitution does permit the Centre to levy cess and surcharges beyond the basic taxes and duties in extraordinary situations. But making it manifold **higher than the basic taxes** is nothing but a misuse of such provisions of the Constitution.
- These additional taxes **do not go to a divisible pool** and such a high burden of taxes is an attack on the people and the federal rights of States.

Revenue Data

- The basic excise duty is ₹1.40 and the rest of the tax is made up of special additional excise duty and cess which would not go to divisible pool and to the States.
- The Union government has collected around ₹3.72-lakh crore in 2020-21 as revenue from petroleum products as per the data published by the Petroleum Planning and Analysis Cell.
- Of this, only around ₹18,000 crore is collected as Basic Excise Duty which is around 4.8% of the total revenue from petroleum products. The divisible pool is only 41% of this ₹18,000 crore
- Around ₹2.3-lakh crore is collected as cess and the rest ₹1.2-lakh crore is collected as special additional excise duty.
- 95% of the total revenue from petroleum, which are not to be shared with the States at all. This is a classic example of undermining federalism prevailing in the country.

Impact on Federalism

- After the implementation of Goods and Services Tax (GST), States have the **right to decide the taxes on just three goods** — petrol, diesel and liquor.
- By **unilaterally taking away the bulk of the tax revenues** on petrol and diesel, the Centre has done injustice to the States. This is obtuse use of fiscal federalism. All States must oppose this in a united manner.
- The promise was that the **revenue neutral rate (RNR) will be implemented,** which means States would get revenues similar to what they

were getting before the implementation of GST.

- The average taxes on goods was 16% during the initial GST period. The average rate of taxes in goods at present is 11.3%. The **consumer, however, hasn't benefited** from it instead inflation has also been rising.
- On an average, the country collects ₹1-lakh crore a month as GST — ₹12-lakh crore in a year; ₹6-lakh crore each for the States and the Centre. Had RNR been maintained, the total amount would have been ₹18-lakh crore at the rate of 16%. States would have received at least ₹3-lakh crore additionally.
- A detailed analysis must be done on why States are losing revenue. GST has to be streamlined to ensure RNR, but without hurting the common people.

Conclusion

There has to be detailed deliberations by states & centre to help address the emerging issues within fiscal federalism.

Connecting the dots

Cess Pool: On CAG report on GST

FCRA Changes: Ease of Monitoring vs Crippling Curbs

Context: The Supreme Court has reserved its judgment on petitions challenging the validity of amendments introduced in 2020 to the Foreign Contribution (Regulation) Act, 2010, aimed at tightening the curbs on NGOs allowed to receive foreign funds.

- While NGOs that have termed the amendments as harsh and arbitrary, the Government has argued that its intended to streamline the flow of funds and to enhance transparency and accountability.

What is the background to the amendments?

- Foreign donations received by individuals and organisations in India have been regulated by law since 1976.
- The Act was since repealed and re-enacted with fresh measures and restrictions as the Foreign Contribution (Regulation) Act, 2010.
- The law sought to consolidate the acceptance and utilisation of foreign contribution or foreign hospitality by individuals, associations or companies, and to prohibit such contributions from being used for activities detrimental to national interest.
- The FCRA was amended in September 2020 to **introduce some new restrictions**.
- The Government says it did so because it found that many recipients were wanting in compliance with provisions relating to filing of annual returns and maintenance of accounts.
- Many did not utilise the funds received for the intended objectives.
- It claimed that the annual inflow as foreign contributions almost doubled between 2010 and 2019.
- The FCRA registration of 19,000 organisations was cancelled and, in some cases, prosecution was also initiated.

How has the law changed?

There are at least three major changes that NGOs find too restrictive.

- An amendment to Section 7 of the Act completely prohibits the transfer of foreign funds received by an organisation to any other individual or association.
- Another amendment mandates that every person (or association) granted a certificate or prior permission to receive overseas funds must **open an FCRA bank account in a designated branch of SBI** in New Delhi. All foreign funds should be received only in this account and none other.
- However, the recipients are allowed to open another FCRA bank account in any scheduled bank to which they could transfer the received funds for utilisation.
- The designated bank will inform authorities about any foreign remittance with **details about its source** and the manner in which it was received.
- In addition, the Government is also authorised to take the **Aadhaar numbers of all the key functionaries of any organisation** that applies for FCRA registration or for prior approval for receiving foreign funds.
- Another change is that the **portion of the receipts allowed as administrative expenditure** has been reduced from 50% to 20%.

What is the criticism against these changes?

- NGOs questioning the law consider the **prohibition on transfer arbitrary** and too heavy a restriction. One of its consequences is that recipients cannot fund other organisations.
- When foreign help is received as material, it becomes impossible to share the aid if the recipient NGO does not have the means to distribute on its own.
- Even the court wanted to know whether this means that one organisation funding other organisations for designated activities is completely prohibited.
- Lawyers have argued that there is **no rational link** between designating a particular branch of a bank with the objective of preserving national interest. It is also inconvenient as the NGOS might be operating elsewhere.
- They have also cited the recent Supreme Court judgment on the alleged use of Pegasus spyware to argue that '**national security' cannot be cited as a reason without adequate justification.**

What does the Government say?

- The Government has contended that the amendments were **necessary to prevent foreign state and non-state actors from interfering** with the country's polity and internal matters.
- The changes are also needed **to prevent malpractices** by NGOs and diversion of foreign funds. Preventing possible diversion of funds is also the reason cited for reducing the administrative expense component, as some organisations tended to inflate the actual expenditure incurred.
- The provision of having one designated bank for receiving foreign funds is aimed at making it **easier to monitor the flow of funds.** The Government clarified that there was no need for anyone to come to Delhi to open the account as it can be done remotely.

Connecting the dots

- Importance of NGOs in Democracy
- FDI Policy & Atmanirbhar Bharat

Reforming the Fertilizer Sector

Context: Since 1991, when economic reforms began in India, several attempts have been made to reform the fertilizer sector to

- Keep a check on the rising fertilizer subsidy bill
- Promote the efficient use of fertilizers
- Achieve balanced use of N, P and K (nitrogen, phosphorus and potassium),
- Reduce water and air pollution caused by fertilizers like urea.

What are the issues with Fertiliser Subsidies in India?

1. Failed attempt to increase Price of Fertilizer

- The Economic Survey of 1991-92 noted that fertilizer prices remained almost unchanged from July 1981 to July 1991.
- The Union Budget of July 1991 raised the issue prices of fertilizers by 40% on average. But from August that year, this was reduced to 30%, and small and marginal farmers were exempted from the price increase.
- The Economic Survey further noted that even with this 30% increase, fertilizer subsidy remained substantial and needed to be reduced further.
- More recently, Fertilizer subsidy has doubled in a short period of three years. For 2021-22, the Union Budget has estimated fertilizer subsidy at ₹79,530 crore (from ₹66,468 crore in 2017-18)

2. Disproportionate use of Urea

- Due to opposition to increase fertilizer prices, the increase in the price of urea was rolled back to 17% in 1992 over the pre-reform price.
- This change disturbed the relative prices of various fertilizers and resulted in a big shift in the composition of fertilizers used in the country in favour of urea and thus N.
- The ratio of use of N:P:K increased from 5.9:2.4:1 in 1991-92 to **9.7:2.9:1 in 1993-94**
- Rather, there has been an uncontrolled increase in subsidies on urea, due to almost freezing the MRP of urea in different time periods and its rising sale due to low cost.

3. Inter-State disparities in fertilizer subsidy

- In 2019-20, fertilizer use per hectare of cultivated area varied from 70 kg of NPK in Rajasthan to 250 kg in Telangana.

- N,P,K ratio was 33.7:8.0:1 in Punjab and 1.3:0.7:1 in Kerala.
- All these have implications for inter-State disparities in fertilizer subsidy due to high variations in subsidy content, which is highly biased towards urea and thus nitrogen.

4. Import Dependence

- The total demand for urea in the country is about 34-35 million tonnes (mln t) whereas the domestic production is about 25 mln t.
- The requirement of Diammonium Phosphate (DAP) is about 12 mln t and domestic production is just 5 mln t.
- This leaves the gap of nearly 9-10 mln t for urea and 7 mln t for DAP, which is met through imports.
- In addition, consumption of complex fertilizers (NPK) is about 12-13 mln t, which is largely produced within the country and so the import requirement is only 1 mln t.

5. Volatile International Prices creating fiscal challenges

- Of late, there has been a surge in international prices with urea prices rising to a record level of over $900 per metric tonne (mt) in November 2021 from nearly $270 per mt in September 2020.
- Likewise, the international prices of DAP have risen from about $360 per mt in September 2020 to about $825 per mt in November 2021.
- In order to minimise the impact of rise in prices on farmers, the bulk of the price rise is absorbed by the government through enhanced fertilizer subsidy. This is likely to create serious fiscal challenges.

6. Subsidy burden borne by Tax payers

- At current prices, farmers pay about ₹268 per bag of urea and the Government of India pays an average subsidy of about ₹930 per bag.
- Thus, taxpayers bear 78% of the cost of urea and farmers pay only 22%. This is expected to increase and is not sustainable.

7. Demand of subsidy for organic fertilizer

- Concerned with the adverse environmental impact of certain chemical fertilizers, some sections of society suggest the use of organic fertilizers and biofertilizers instead.
- There is a growing demand to provide subsidies and other incentives for organic fertilizers and biofertilizers to match those provided for chemical fertilizers.

The Way Forward

In order to address the multiple goals of fertilizer policy, we need to simultaneously work on four key policy areas.

- One, we need to be **self-reliant** and not depend on import of fertilizers. In this way, we can escape the vagaries of high volatility in international prices.
    - In this direction, five urea plants at Gorakhpur, Sindri, Barauni, Talcher and Ramagundam are being revived in the public sector.
- Two, we need to extend the **Nutrient Based Subsidy (NBS) model to urea** and allow for price rationalisation of urea compared to non-nitrogenous fertilizers and prices of crops.
- Three, we need to develop **alternative sources of nutrition** for plants like organic and biofertilizers. This also provides the scope to use a large biomass of crop that goes waste and enhance the value of livestock byproducts.
- Finally, India should pay attention to **improving fertilizer efficiency** through need-based use rather than broadcasting fertilizer in the field. Ex: Nano Urea by IFFCO.

Conclusion

The above changes will go a long way in enhancing the productivity of agriculture, mitigating climate change, providing an alternative to chemical fertilizers and balancing the fiscal impact of fertilizer subsidy on the Union Budgets in the years to come.

Can you answer this question now?

Examine the distorting impact of agricultural subsidies. What reforms are needed to streamline the subsidy regime in India? Discuss

Cryptocurrencies Regulation

Context: The Cryptocurrency and Regulation of Official Digital Currency Bill, 2021, listed for introduction in Parliament's Winter Session starting November 29, seeks to create a facilitative framework for the creation of the **official digital currency** to be issued by RBI.

- The Bill seeks to prohibit all private cryptocurrencies in India, however, it allows for certain exceptions to promote the underlying technology of cryptocurrency and its uses.
- Prices of cryptocurrencies on local exchanges crashed overnight after the news broke, even though they remained largely unchanged in global markets.
- There was panic- selling by crypto holders fearing an impending ban or restriction.
- There is currently no regulation or ban on cryptocurrencies in India; however, national responses to defining and regulating virtual currencies vary widely in jurisdictions around the world.

How are cryptocurrencies regulated in countries around the world?

- The stance of countries and regulators has ranged from a total ban on these financial assets, to allowing them to operate with some regulations, to the other extreme of allowing virtual currency trading in the absence of any guidelines.
- **Governments and regulators remain divided** on how to categorise it as a currency or asset — and how to control it from an operational point of view.
- As stated above, the regulatory and policy response can vary from complete openness of the kind seen in countries like El Salvador, which has approved bitcoin as legal tender, to a total clampdown like in China, which has imposed stringent regulations on both cryptocurrencies and service providers.
- Countries such as **India are somewhere in between** — still in the process of figuring out the best way to regulate cryptos after some policy and regulatory experimentation.
- **USA and EU** have been proactive in trying to pin down the regulatory mandate, while discussions continue.
- Among the countries that haven't issued detailed regulations, there are those that have recognised and defined these currencies.

CANADA for example, through its Proceeds of Crime (Money Laundering) and Terrorist Financing Regulations, defines virtual currency as:

- (a) a digital representation of value that can be used for payment or investment purposes that is not a fiat currency and that can be readily exchanged for funds or for another virtual currency that can be readily exchanged for funds; or
- (b) a private key of a cryptographic system that enables a person or entity to have access to a digital representation of value referred to in paragraph (a).
- It is to noted that Canada has been among the early adopters of crypto, and the Canada Revenue Authority (CRA) generally treats cryptocurrency like a commodity for purposes of the country's Income Tax Act.

ISRAEL, in its Supervision of Financial Services Law, includes virtual currencies in the definition of financial assets.

- The Israeli securities regulator has ruled that cryptocurrency is a security subject, while the Israel Tax Authority defines cryptocurrency as an asset and demands 25% on capital gains.

In GERMANY, the Financial Supervisory Authority qualifies virtual currencies as "units of account" and therefore, "financial instruments".

- The Bundesbank considers Bitcoin to be a crypto token given that it does not fulfil typical functions of a currency.
- However, citizens and legal entities can buy or trade cryptoassets as long as they do it through exchanges and custodians licensed with the German Federal Financial Supervisory Authority.

IN THE UNITED KINGDOM, Her Majesty's Revenue & Customs, while not considering crypto assets to be currency or money, notes that cryptocurrencies have a unique identity and cannot, therefore, be directly compared to any other form of investment activity or payment mechanism.

IN THE United States, different states have different definitions and regulations for cryptocurrencies.

- While the federal government does not recognise cryptocurrencies as legal tender, definitions issued by the states recognise the decentralised nature of virtual currencies.

While most of these countries do not recognise cryptocurrencies as legal tender, they do recognise the value these digital units represent — and indicate their functions as either a medium of exchange, unit of account, or a store of value (any asset that would normally retain purchasing power into the future).

How would a Central Bank Digital Currency (CBDC) work?

- **RBI plans to launch its CBDC**, a digital form of fiat currency that can be transacted using wallets backed by blockchain, and which is regulated by the central bank.
- Though the concept of **CBDCs was directly inspired by Bitcoin,** it is different from decentralised virtual currencies and crypto assets, which are not issued by the state, and lack the 'legal tender' status declared by the government.
- CBDCs enable the user to conduct **both domestic and cross-border transactions** that do not require a third party or bank.
- Since several countries are running pilot projects in this space, it is important for India to launch its own CBDC, making the rupee competitive in international financial markets.
- While CBDC too is a digital or virtual currency, it is not comparable to the private virtual currencies that have mushroomed over the last decade.
- The private virtual currencies sit at odds with the historical concept of money — and they are certainly not currency as the word has come to be understood historically.

Connecting the dots

- China's Digital Currency
- Blockchain Technology

ENVIRONMENT

India's Water Stress

In News: According to the composite water management index released by the think tank NITI Aayog in 2019, 21 major cities (including Delhi, Bengaluru, Chennai, Hyderabad) were on the brink of exhausting groundwater resources, affecting about 100 million people.

- The study also points out that by 2030, the demand for water is projected to be twice the available supply.

Understanding Sources of Water

- In the rural areas, 80%-90% of the drinking water and 75% of the water used for agriculture is drawn from groundwater sources.
- In urban areas, 50%-60% of the water supply is drawn from groundwater sources, whereas the remaining is sourced from surface water resources such as rivers, often located afar, in addition to lakes, tanks and reservoirs.
- Seeing India's looming water crisis through 'urban' and 'rural' sources allows for better understanding of the causative factors and also enables to develop better strategies to be deployed to reverse the water crisis.

Water Crisis in Urban Areas: The Chennai Example

- Water crisis unfolded in Chennai in 2019, where life came to a standstill and parts of the city went without piped water for months.
- Many have cited the **poor rainfall received in Chennai** in the previous year as one of the main reasons for the water crisis. Though it is true that rainfall was low, which was 50% less than normal, there were other reasons for the crisis.
- Chennai city has been built by incrementally **encroaching floodplains** and paving over lakes and wetlands that would have otherwise helped the process of recharging groundwater.
- The lack of space for water to percolate underground prevented rainwater from recharging the aquifers.
- The situation was made worse by the **loss of green cover** (which would have otherwise

helped water retention) to make way for infrastructure projects.

- Such a situation, on the one hand, **leads to flooding during normal rainfall** due to stagnation, and on the other hand leads to drought-like conditions due to the prevention of underground water storage.

Water Crisis in Rural Areas: The Punjab Example

- The draft report of the Central Ground Water Board concluded that Punjab would be reduced to a desert in 25 years if the extraction of its groundwater resources continues unabated.
- 82% of Punjab's land area has seen a huge decline in groundwater levels, wherein 109 out of 138 administrative blocks have been placed in the **'over exploited' category.**
- Groundwater extraction which was at 35% in the 1960s and 1970s, rose to 70% post the Green Revolution where **government subsidised power for irrigation** that lead to tubewells running for hours.
- Also, **cultivation of water intensive crops** such as paddy have further aggravated water depletion, even turning water saline.

Way Ahead

- If the Government is serious about addressing the water crisis in urban areas, the Ministry of Water Resources must reconfigure its relationship with other Ministries and Departments (Urban Development, Local Self-Government and Environment).
- This would be for **enhanced integration and coordination** through effective land and **water zoning regulations** that protect urban water bodies, groundwater sources, wetlands and green cover.
- Authorities must also simultaneously work to enhance **waste water recycling** and water recharge activities targeting aquifers and wells through **rainwater harvesting.**
- In Rural areas like Punjab, immediate measures need to be taken to manage and replenish groundwater, especially through participatory groundwater management approaches with its combination of **water budgeting,** aquifer recharging and community involvement.
- In view of the ongoing erosion of water resources, **the government should not be on promising water supply** (Jal Jeevan Mission). Instead the aim should be towards protecting and conserving water resources on the one hand and minimising and enhancing efficiency of water usage on the other.

Connecting the dots

- Jal Jeevan Mission
- National Water Policy

Global Methane Pledge

Context: The Global Methane Pledge was launched recently at the ongoing UN COP26 climate conference in Glasgow. So far, over 90 countries have signed this pledge, which is an effort led jointly by the United States and the European Union.

Methane is the second-most abundant greenhouse gas in the atmosphere, after carbon dioxide, and, therefore, pledges related to cutting down its emissions are significant.

What is the Global Methane Pledge?

- The pledge was first announced in September by the US and EU, and is essentially an agreement to reduce global methane emissions. One of the central aims of this agreement is to cut down methane emissions by up to 30 per cent from 2020 levels by the year 2030.
- According to the latest Intergovernmental Panel on Climate Change report, methane accounts for about half of the 1.0 degrees Celsius net rise in global average temperature since the pre-industrial era.
- Rapidly reducing methane emissions is complementary to action on carbon dioxide and other greenhouse gases, and is regarded as the single most effective strategy to reduce global warming in the near term

What is climate impact of methane?

- According to the UN, 25 per cent of the warming that the world is experiencing today is because of methane, a greenhouse gas, which is also a **component of natural gas**.
- Because it is a greenhouse gas, its presence in the atmosphere increases Earth's temperature.

- There are various sources of methane including **human and natural sources.** Human sources of methane include landfills, oil and natural gas systems, agricultural activities, coal mining, wastewater treatment, and certain industrial processes, the US Environmental Protection Agency notes.
- The oil and gas sectors are among the largest contributors to human sources of methane.
- NASA notes that human sources (also referred to as anthropogenic sources) of methane are responsible for 60 per cent of global methane emissions. These emissions come primarily from the **burning of fossil fuels**, decomposition in landfills and the agriculture sector.
- In India, for instance, in 2019, the Ministry of Coal asked state-run coal miner Coal India Limited (CIL) to produce 2 MMSCB (million metric standard cubic metres) per day of **coalbed methane (CBM**) gas in the next 2 to 3 years.
    - CBM, like shale gas, is extracted from what are known as unconventional gas reservoirs — where gas is extracted directly from the rock that is the source of the gas (shale in case of shale gas and coal in case of CBM).
    - The methane is held underground within the coal and is extracted by drilling into the coal seam and removing the groundwater. The resulting drop in pressure causes the methane to be released from the coal.

Why is dealing with methane important for climate change?

- According to the International Energy Agency (IEA), while methane has a much shorter atmospheric lifetime (12 years as compared to centuries for CO2), it is a much more potent greenhouse gas simply because it absorbs more energy while it is in the atmosphere.
- In its factsheet on methane, the UN notes that methane is a powerful pollutant and has a **global warming potential that is 80 times greater than carbon dioxide**, about 20 years after it has been released into the atmosphere.
- Significantly, the average methane leak rate of 2.3 per cent "erodes much of the climate advantage gas has over coal", the UN notes.
- The IEA has also said that more than 75 per cent of methane emissions can be mitigated with the technology that exists today, and that up to 40 per cent of this can be done at no additional costs.

Connecting the dots

- Paris Climate Accord
- China's Climate Commitments

Climate Law for India

Context: COP26 at Glasgow is important as it will call for practical implementation of the 2015 Paris Accord, setting the rules for the Accord.
Also, this is the right time for India to consider setting up a climate law while staying true to its goals of climate justice, carbon space and environmental protection.

Do You Know?

- India has 17 percent of the world's population today, but the responsibility in emissions has been only 5 percent.
- India's non-fossil fuel energy has increased by more than 25% in the last 7 years.And now it has reached 40 percent of our energy mix.

The Indian Proposals

Prime Minister Narendra Modi announced, on November 1 at Glasgow, a 'Panchamrit solution' that consists of

- India will reach its non-fossil energy capacity to 500 GW by 2030.
- India will meet 50 percent of its energy requirements from renewable energy by 2030.
- India will reduce the total projected carbon emissions by one billion tonnes from now onwards till 2030.
- By 2030, India will reduce the carbon intensity of its economy by less than 45 percent.
- By the year 2070, India will achieve the target of Net Zero.

Current laws and gaps

- We have Environment (Protection) Act (EPA), 1986, the Air (Prevention and Control of Pollution) Act, 1981 and Water (Prevention

and Control of Pollution) Act, 1974.These **doesn't cover the impacts of Climate Change** or work to reduce future climate impacts

- EPA is grossly inadequate to deal with violations on climate. Clause 24 of the EPA states that if an offence is committed under the EPA or any other law, the person will be punished under the other law (for example, Code of Criminal Procedure). This makes the **EPA subordinate to every other law.**
- Our environmental laws **lack integration** of climate adaptation and mitigation.
- Comprehensive climate action is not just technological (such as changing energy sources or carbon intensity), but also **needs to be nature-based** (such as emphasising restoration of ecosystems, reducing natural hazard and increasing carbon sinks.)
- Climate action cannot be at the cost of **increasing poverty.**
- The 500 Gigawatt by 2030 goal for renewable, solar or wind power (of installed power capacity from non-fossil sources), can put critically endangered grassland and desert birds such as the Great Indian Bustard at risk, as they die on collision with wires in the desert.

What should be the primary components of Climate Law?

2. A climate law should consider creating an institution that monitors action plans for climate change.
- A '**Commission on Climate Change'** could be set up, with the power and the authority to issue directions, and oversee implementation of plans and programmes on climate.
- The Commission could have **quasi-judicial powers** with powers of a civil court to ensure that its directions are followed in letter and spirit.
- It should be assisted by a **technical committee** which can advise the commission in the discharge of its functions as well as guide various private and public agencies in meeting their climate-related obligations.
- The commission should **trace carbon footprints** of various sectors and make practical public interventions for reduction of footprints through policy guidance & technological support.

2. Climate Law must ensure accountability

- There is a need for a system of liability and accountability at short-, medium- and long-term levels as we face hazards. This also means having a legally enforceable National Climate Change Plan that goes beyond just policy guidelines

Conclusion

We have an urgent moral imperative to tackle climate change and reduce its worst impacts. But we also should Indianise the process by bringing in a just and effective law.

Connecting the dots

- Paris Climate Deal and India
- IPCC's report on Climate Change & India
- China's Climate Commitments

The long road to net zero

Context: With the announcement of a net zero emissions target for 2070 by Prime Minister Narendra Modi at the 26th Conference of the Parties (COP26) to the UNFCCC in Glasgow, India has joined a high-profile group of countries.

- Others with net zero goals include major emitters such as the United States, the UK and EU with a 2050 target, and China aiming for 2060.
- A dozen countries besides the EU have a legal enactment towards the goal.

How can net zero be achieved?

- Net zero, which means balancing out man-made national greenhouse gas (GHG) emissions by removing an equal amount from the atmosphere, can be achieved only through a structured programme that relies on sharp emissions reduction, wide support for clean energy innovation and adoption of green technologies.

India and Net Zero

- India's well-founded argument against committing itself to strict emissions goals is that it has historically been one of the lowest

emitters of GHGs, and the impetus has to come from the developed economies.

- The country represents about 7% of today's global emissions, and has committed itself to a net zero deadline 49 years away.
- According to the World Bank, in 2018, India had per capita emissions of 1.8 tonnes, which is markedly lower than 15.2 for the U.S., 5.4 for the U.K. and even the middle-income countries' average of 3.7 tonnes.
- A projected per capita emissions figure in 2030 for India is 2.4 tonnes under the Paris Agreement.
- India's absolute emissions volume stands third, after China and the U.S.

What is the outlook for India's emissions?

- Analysis of India's growth path points to rising GDP per capita, with a rise in carbon emissions in the short term, primarily from energy.
- There is pressure from absolute increase in population and consumption, but population growth is slowing.
- A greater share for services in GDP is positive for emissions cuts, but there is no indication of when India's emissions, **heavily influenced by coal** and other fossil fuel use, will peak.
- In terms of sectoral GHG emissions, data from 2016 show that
    - electricity and heat account for the highest share (1.11 billion tonnes), followed by
    - agriculture (704.16 million tonnes),
    - manufacturing and construction (533.8 million tonnes),
    - transport (265.3 million tonnes)
    - industry (130.61 million tonnes)
    - Land use change and forestry (126.43 million tonnes)
    - other fuel use (119.04 million tonnes)
    - buildings (109.2 million tonnes)
    - waste (80.98 million tonnes),
    - Fugitive emissions (54.95 million tonnes)
    - Aviation and shipping (20.4 million tonnes).

What are the immediate interventions that can be made?

- India needs to create a **legal mandate for climate impact assessment** of all activities. This can facilitate investment by dedicated green funds.
- The 500 GW renewables target needs a major boost, such as channelling more national and international **climate funding into decentralised solar power**.
    - Rooftop solar, estimated at 7,701 megawatt (MW) installed capacity as of June 2021, could be scaled up by modernising unattractive State-level regulation.
    - The problem with expansion of rooftop solar, which registered 53% year-on-year growth in 12 months, is resistance from State electricity utilities, although costs are reducing.
- Another emerging sector is **green hydrogen production** because of its potential as a clean fuel. India has a National Hydrogen Mission now in place.
    - The fuel can cover major sectors such as power and steel production (shifting from coal) and automotive (fuel cell vehicles), while green ammonia, with potential uses in energy storage, shipping, and as a base for hydrogen production, are promising areas. This can steadily decarbonise big sources of emissions as industry leaders explained at COP 26.
- India's **urban solid waste management** will need to modernise to curb methane emissions from unscientific landfills.
- These plans need a political consensus and support from State governments.
- Net zero will involve industrial renewal using green innovation, green economy support and supply chains yielding new jobs.
- It also needs **low carbon technologies**, zero emission vehicles, and renewed cities promoting walking and cycling.
- Industry will need to make highly energy-efficient goods that last longer, and consumers should be given a legal **right to repair** goods they buy.
- Preventing the release of stored carbon in the environment, such as trees and soil, has to be a net zero priority.

Connecting the dots:

- India's Opposition to Net Zero
- China's Climate Commitments

Forest Loss

Context: Impact of agricultural expansion on global deforestation almost 90%, says FRA remote-sensing survey.

- More than half of global forests (52.3 per cent) has been converted to cropland
- Another 37.5 per cent was lost to livestock grazing between 2000 and 2018
- Around 5.6 per cent of forest was converted for urban and infrastructure development
- Most of the deforestation was in the **tropical biomes** during 2000-2018
- A total of 420 million hectares of forest has been lost since 1990
- Almost 90 per cent of deforestation worldwide was due to agricultural expansion.

Slowdown was reported in South America and south and southeast Asia; tropical rainforests in these regions recorded the highest deforestation rates of all biomes.

Deforestation

- Large-scale removal of trees from forests (or other lands) for the facilitation of human activities.
- Result in the loss of biodiversity, damage to natural habitats, disturbances in the water cycle, and soil erosion.
- Contributor to climate change and global warming.

Reasons:

- Agriculture – small-scale and large scale farming
- Logging – cutting of trees for use as raw material
- Mining and urban expansion – clearing of forest area for the construction of infrastructure

Main deforestation drivers (differ across the world's regions)

- Agriculture is the main driver of deforesation in all regions except Europe, where urban and infrastructure development have a higher impact
- Conversion to cropland dominates forest loss in Africa and Asia, with over 75 per cent of the forest area lost converted to cropland
- In South America, almost three quarters of deforestation was due to livestock grazing

What has NOT worked:

- Increasing agricultural food productivity to meet the demands of a growing population and halting deforestation are not mutually exclusive objectives.
- Globally, nature-based solutions such as forests, mangroves and peatlands could provide about a third of the most effective and cost-effective solutions to the climate crisis that we need now – as well as helping communities adapt to the changes that are now inevitable. But currently, they attract just 3**% of total global climate finance**. That makes no sense at all.
- If we were to lose any of the world's great forests, we would have zero chance of stabilising the world's climate, of staying within 1.5C of warming, of reversing the catastrophic loss of wildlife.

The Bonn Challenge

- Pledged to restore 21 MHA of degraded and deforested land which was later revised to 26 MHA to be restored by 2030.
- The first-ever country progress report under the Bonn Challenge was submitted by India - by bringing 9.8 million hectares since 2011 under restoration is an achievement.
- However, continued degradation and deforestation need to be tackled effectively to achieve the remaining target of restoration by addressing various challenges.

The Way Forward

If we want to protect and restore nature at scale, we need to back the indigenous communities that have defended their forest homes for generations, without meaningful support or recognition and often in the face of chronic danger. Indigenous people's lands are home to more than a third of the world's intact forest landscapes and almost a quarter of the carbon stored in the world's tropical forests.

Territorial rights of Indigenous peoples must be recognized, protected forest areas expanded and roads and industry avoided in still intact forests. These steps can set the stage for more sustainable forest economies.

India would do well to set up an ambitious goal of first retaining and then increasing its forest cover. Protecting tropical forests can secure seven to 10 times as much carbon through 2050 as replanting forests. Saving the trees can also ease the crisis of species extinction. And protecting these forests is crucial to maintaining the homes and ways of life of thousands of forest cultures.

A forest policy should be a broad vision taking into account the varied political, socioeconomic, and ecological contexts of the country. Adequate finance along with public-private partnership can propel the efforts towards restoration of the planned interventions. Active engagement of stakeholders and an inclusive approach can turn the table!

NOTE: FRA 2020 Remote Sensing Survey

- Launched in 2018
- To build country capacities to use remote sensing for forest monitoring
- To generate independent, robust and consistent estimates of forest area and its changes over time at global, regional and biome levels.

Must Read:

- **Forest Conservation Act & Proposed Amendments**
- **Amazon forests are no longer acting as a carbon sink**
- **Australia Wildfires**

Can you answer the following questions?

1. Tackling deforestation must be at the heart of our response to the climate crisis. Discuss.
2. Critically discuss the effects of deforestation on Indian economy

Chennai Floods- Climate Crisis

Context: Chennai is flooded. The north-east monsoon over Tamil Nadu has brought with it the highest volume of rainfall within 24 hours in the last five years. It has also revived memories of the devastating Chennai floods of 2015.

Issues

- Floods recur in major cities like Mumbai, Chennai, Dhaka, Karachi and Kathmandu, and accompany high-intensity rainfall events.
- IPCC's 6th Assessment Report (AR6) report noted the increasing frequency of heavy precipitation events since the 1950s and inferred that they were being driven by human-induced climate change.
- Climate Change is only a part of story the other part is land-centrism.

Land Centrism

- All cities in the subcontinent are waterscapes. They are threaded with rivers, speckled with wetlands and springs, and they rest on invisible aquifers.
- Yet, driven by a thirst for land, our cities are planned to subjugate water, not live with it. It is this land-centrism that undermines urban drainage.
- **Urban drainage has been sacrificed** at the for making way to land-centric urban growth.
- The **apathy for restoring disappearing urban waterways**, stands in stark contrast to the Indian government's recent obsession with reviving ancient rivers.
- Urban floods are also caused by **the design of constructed stormwater drains.** The size of their outlets should be based on the intensity of rainfall (mm/per hour) and the peak flow inside the drains.
- In India either design guidelines are missing, or **the outlets are too small** to accommodate peak flow. As a result, above-average rainfall produces flooded localities.
- Similarly, by **violating environmental laws** and municipal bye-laws, open spaces, wetlands and floodplains have been mercilessly built over, making cities impermeable and hostile to rainwater.
- Unfortunately, **encroachments are always blamed on the urban poor** who live precariously in low-lying drainage areas because of inadequate social housing.
- After the devastating Chennai floods of 2015, experts pointed out that the biggest encroacher of urban waterways and wetlands was actually the state government which had built runways, bus terminals and IT parks by paving over water bodies.

- Ever since **concretisation** became pivot for urbanisation, rainfall no longer finds its way towards underground or surface water bodies.

Conclusion

- To heal the hydrophobia that has shaped our urban experience, we need to move away from land-centric urbanisation and recognise cities as waterscapes.
- We need to let urban rivers breathe by returning them to their floodplains.
- The entire urban watershed needs to heal, and for that to happen, we need less concrete and more democracy and science at the grassroots.

Connecting the dots

- Himachal Pradesh Water Crisis
- India's Water Crisis
- Urbanisation and Water Crisis

Glasgow Climate Pact: Achievements & Disappointments

Context: The Glasgow Climate Pact was adopted on 13th Nov 2021 and, as was to be expected, it is a mixed bag of modest achievements and disappointed expectations.

Modest Achievements

- **Tacit consensus on 1.5° target**: The notional target of limiting the global temperature rise to 2 degrees celcius above pre-industrial levels (Paris Agreement) remains but the international discourse is now firmly anchored in the more ambitious target of limiting the temperature rise to 1.5 degrees to match the scale of the climate emergency.
- **Focus on Phasing down Coal:** The Pact is the first clear recognition of the need to transition away from fossil fuels, though the focus was on giving up coal-based power altogether. The original draft had contained a pledge to "phase out" coal. India introduced an amendment at the last moment to replace it with "phase down".
    - The amendment from phase out to "phase down" came as a result of consultations among India, China, the UK and the US.
- **Recognition of the importance of Adaptation:** World recognised that mere mitigation is not enough and that adaptation needs to be mainstreamed into developmental strategies. There is now a commitment to double the current finance available for this to developing countries.
- **Renewed Commitment for Climate Finance:** The Paris Agreement target of $100 billion per annum between 2005-2020 was never met with the shortfall being more than half. There is now a renewed commitment to delivering on this pledge in the 2020-2025 period and there is a promise of an enhanced flow thereafter.
- **Compensation for loss and damage for developing countries:** This is now part of the multilateral discourse and the US has agreed that it should be examined in working groups. That is a step forward but is unlikely to translate into a meaningful flow of funds any time soon.
- **Methane Pledge:** Agreement was signed among 100 countries to cut methane emissions by 30 per cent by 2030.
- **Reverse deforestation:** Another group of 100 countries has agreed to begin to reverse deforestation by 2030. Since the group includes Brazil and Indonesia, which have large areas of forests that are being ravaged by legal and illegal logging, there is hope that there will be progress in expanding one of the most important carbon sinks on the planet.
- **Clarity on Article 6 of Paris agreement**- There is greater clarity on how bilateral carbon trades can proceed and the creation of a centralised hub that replaces Kyoto Protocol's Clean Development Mechanism.
    - Criteria have been set out for countries to use CERs from projects registered after January 1, 2013 to meet their first NDC or first adjusted NDC.
    - It also designates a 12-member Supervisory Body to oversee the emerging hub and to review the baselines of recognised credits
- **New commitments by India:** PM announced India's commitment to achieving net-zero carbon by 2070 that compared favourably with China's target date of 2060. His

announcements of enhanced targets for renewable energy were also welcomed.

- **Pressure by Youth:** There was incredible and passionate advocacy of urgent action by young people across the world. This is putting enormous pressure on governments and leaders and if sustained, may become irresistible

Disappoints

- **Inept Diplomacy by India:** As the largest producer and consumer of coal and coal-based thermal power, China prefers a gradual reduction rather than total elimination. The word "phase down" also figures in the US-China Joint Declaration on Climate Change, announced on November 10. India introducing the amendment played negatively with both the advanced as well as a large constituency of developing countries. It should made China to do so.
- **Inadequate Adaptation Finance:** Climate finance for adaptation is currently only $15 billion, doubling will mean $ 30 billion. This remains grossly inadequate. According to UNEP, adaptation costs for developing countries are currently estimated at $70 billion annually and will rise to an estimated $130-300 billion annually by 2030.
- **India declining to join new initiatives:** India is not a part of the methane pledge group. India also did not join the reverse deforestation group due to concerns over a clause on possible trade measures related to forest products.
- **Bigger methane emergency in Permafrost Problem:** Cutting methane emissions, which is generated mainly by livestock, is certainly useful but there is a much bigger methane emergency as the earth's permafrost areas in Siberia, Greenland and the Arctic littoral begin to melt that would release huge volumes of carbon and methane.
- **US-China Declaration & India:** The November 10 Joint declaration between US & China on Climate Change implies a shift in China's hardline position. It appears both countries are moving towards a less confrontational, more cooperative relationship overall. This will have geopolitical implications, including for India, which may find its room for manoeuvre shrinking.
- **Lack of Concrete actions:** There is more ambition in the intent to tackle climate change but little to show in terms of concrete actions. These have been deferred to future deliberations. Enhanced Nationally Determined Contributions (NDCs) are expected to be announced at a meeting next year. There are no compliance procedures, only "name and shame" to encourage delivery on targets.

Conclusion

- The UK Presidency noted that as on 2019, only 30% of the world was covered by net zero targets and this had now moved close to 90%.
- The text of the Glasgow agreement indicates that all countries should deliver climate plans to the UN on 5-year cycles starting from 2025 (submitting 2035 NDCs in 2025, 2040 NDCs in 2030) which is a step in right in ensuring accountability in climate actions.

Connecting the dots

- Paris Climate Deal
- IPCC report on Climate Change
- Tackling the Climate Crisis

Decarbonisation of India's Power Sector

Context: Prime Minister Narendra Modi's announcement of enhanced targets for climate action by India, particularly for achieving net-zero emissions by 2070, has highlighted the importance of long-term planning for decarbonising the economy.

What precautions needs to be taken to achieve net-zero emission goal by 2070?

- By 2070, there will be many changes in technology, environmental conditions, and the economy.
- The **planning horizon of about 50 years will need to be broken** up into shorter periods so that new knowledge about emerging technologies can be incorporated into plans.
- In addition, **plans will need to be monitored** so that the course can be corrected to respond to any unforeseen problems. Five years, as the

UK has used, seems like a reasonable "Goldilocks ideal."

- For setting interim targets and monitoring progress, an autonomous and technically credible agency, like the **Climate Change Committee (**CCC) in the UK, should be set up.
- The agency would provide **independent advice to the government** on setting and meeting both long-term and interim (five-year) targets that are ambitious but also achievable. It would also monitor progress and annually report and suggest mid-course corrections.

Decarbonisation of Power Sector

- Decarbonisation is the process of reducing the amount of carbon, mainly carbon dioxide (CO_2), sent into the atmosphere.
- The shorter-term targets announced by the PM to be reached by 2030 refer mostly to the power sector. This is appropriate because it is the biggest source of GHG emissions and also the **easiest one to decarbonise.**
- In order to decarbonise the power sector, it would be best to have **a single emissions-related objective** so that an optimal strategy can be developed to achieve the objective at the lowest cost.
- Reducing emission intensity is a good overarching objective; **increased use of RE** or non-fossil-fuel generation is a means to that end.
- **Setting permissible emission intensity** in terms of grammes of carbon dioxide equivalent per kWh of electricity sold, applied to all load-serving entities, would be a good option for targets in the power sector.
- There is a profusion of **separate targets** for almost every resource used to generate electricity. Such an approach **reduces the flexibility** of distribution companies to select resources to meet their loads, resulting in a non-optimal resource mix, and a higher cost of electricity.

Conclusion

The use of five-year interim targets for permissible emission intensity and the establishment of an autonomous and credible agency to advise the government on targets and policies and to monitor progress will greatly facilitate an effective, economic, and smooth transition to decarbonisation of the power sector first, and the Indian economy later by 2070.

Connecting the dots:

- IPCC report on Climate Change
- Paris Climate Accord

The 'Organic' Growth

Context: Organic Farming is poised to become 75000 cr rupee market by 2025. The Indian organic market is expected to grow at an annual rate of more than 20%. However India's share in the global organic market is just 1%.

In organic food production synthetic inputs (such as fertilizers, pesticides, hormones, feed additives etc.) are avoided and it relies upon crop rotation, crop residues, animal manures, off-farm organic waste, mineral grade rock additives and biological system of nutrient mobilization and plant protection.

Organic food sector primarily aims at cultivating the land and raising crops in such a way that it keeps the soil alive and in good health by use of organic wastes (crop, animal and farm wastes, aquatic wastes) and other biological materials along with beneficial microbes (bio fertilizers) to release nutrients to crops for increased sustainable production in an eco-friendly and pollution-free environment.

Strength & Potential of Organic food sector:

- It relies on traditional techniques such as crop rotation, green manure, compost and biological. It is accomplished by using farm agronomic, biological and mechanical methods in exclusion of all synthetic off farm inputs.
- It protects the long term fertility of soils by maintaining organic Matter levels and encouraging soil biological activity. It often involves vermiculture and vermi-composting too.

- The biological processes, driven by mycorrhiza, allow the natural production of nutrients in soil throughout growing season.
- Crop Rotation supports a wider range of beneficial insects, soil micro-organisms, and hence, protects species from going extinct.
- It improves soil health and fertility. It requires careful use of water resources hence lead to conservation of water.
- Sustainable and environmentally friendly production method, which has particular advantages for small-scale farmers.
- It helps in conserving bio-diversity and nature resources on the farm and in the surrounding area.
- Farmers in India's poorest region are recording record rice yields, organic banana yields, etc.
- India has the 9th largest World's Organic Agricultural Land and the largest number of producers Sikkim has become India's first fully organic state by converting around 75,000 hectares of agricultural land into sustainable cultivation.

However, the emerging threats such as climate change induced global warming; flooding, relative market demand etc. pose serious challenge for the growth & development of organic food sector.

- The cost of cultivation increases as it takes more time and energy to produce than its synthetic input intensive counterpart.
- Specialised farmer training costs, higher processing and inventory holding costs, and increased packaging, logistics and distribution costs add to the price of end products.
- There is low awareness at the producer level on the difference between conventional farming and organic farming.
- At the consumer side there is confusion between natural and organic products and limited understanding of the health benefits of organic food products.
- Growing demand and low supply has further created an inflationary pressure on organic food products; it leads to customer opting for non-organic cheap products.

Hence, it becomes imperative to incentivise farmers for input procurement, value addition including post-harvest infrastructure creation, packaging, branding, publicity, transportation, organic fairs, etc.

Some government initiatives and local level innovations can help achieve these objective in following ways:

- Organic farming schemes such as the National Mission for Sustainable Agriculture (NMSA) that promotes "location specific" farming systems, it helps make agriculture sustainable.
- Also, Paramparagat Krishi Vikas Yojana (PKVY) that promotes various organic farming models through adoption of organic village by cluster approach and PGS certification.
- It is critical for companies involved in the organic food business to increase awareness among consumers in non-metro cities.
- Creating community-supported agricultural farms or with "grow your own food" programmes.
- Mission Organic Value Chain Development for North East Region (MOVCD-NER) is a Central Sector Scheme, a sub-mission under National Mission for Sustainable Agriculture (NMSA), aims for development of certified organic production in a value chain mode to link growers with consumers and to support the development of entire value chain starting from inputs, seeds, certification, to the creation of facilities for collection, aggregation, processing, marketing and brand building initiative.
- Ministry of Food Processing and Ministry of Women and Child Development jointly initiated the National Organic Food Festival aimed at strengthening organic food produce in the country. It also aimed at encouraging women entrepreneurs in manufacturing organic produce

Conclusion:

Organic food production because of its innovative nature, less harm to environment, and cost effectiveness holds immense potential in the time of rising environmental and global market chain challenges. Hence, organic food sector can be promoted as brand for "local to global" programme besides it will also help to give boost to rural economy and increase farmers income.

Can you answer the following question:

1. No one farming system alone will safely feed the planet. Rather, a blend of organic and

other innovative farming systems, will be needed for future global food and ecosystem security. Discuss.

2. Sikkim is the first 'Organic State 'in India. What are the ecological and economical benefits of Organic State?

SCIENCE AND TECHNOLOGY

5G: Roadblocks & Way Ahead

Context: Commercial 5G networks began to be deployed in 2020 and are expected to reach 12% of world mobile connections (1.1 billion) and generate revenues up to U.S.$1.3 trillion by 2025 for operators

Advantages of 5g:

- Improved data transfer speed
- Reduce latency time
- Will shape the Fourth Industrial Revolution by enabling Internet of Things
- Leads to more data-intensive, digital economy.

Roadblocks

- India's **Telecom sector is under stress** in recent times due to intense competition unleashed by Jio's entry
- Moreover, the Supreme Court of India's ruling on **AGR dues** estimated to be more than ₹90,000 crore has further exacerbated the financial condition of telecom companies**.**
- The number of telecom operators has come down to a handful from around 15 a few years back.
- In this scenario, the huge investment required in deployment of fibre cables for 5G may add to the worries of Telecom companies.

What Needs to be done?

- **Identification of basic ingredients:** The immediate priority for India will be in identifying end users and population to be covered, identification of cities for the 5G roll out, working out an investment model for 5G deployment.
- **Creating a level-playing field** through market mechanism such as facilitating, simulating, auctioning, ensuring competition, functioning markets, etc.
- **Spectrum Roadmap**: TRAI should prepare a foolproof spectrum road map with a predictable renewal process which will compensate the huge investment required for deployment and ensure coverage.
- **Spectrum Sharing**: Global trial runs show that the key areas for 5G deployment are harmonisation of 5G spectrum bands, pricing and sharing of the spectrum. In this light, sharing of available spectrum needs to be promoted.
- **Government Financial Incentive:** As the deployment of 5G network is expensive, both the Central and State governments need to consider measures which stimulate fibre investment, attract investment through PPPs and facilitate investment funds on a nominal interest basis.
- **Allowing 100% foreign direct investment** in the telecom sector under the automatic route along with these policy reforms augurs well for the sector to attract investment.
- **Conscious of Digital Divide:** The negative implication of 5G is furthering the 'digital divide'. Therefore, Government policies should also focus on affordable coverage through synchronisation of bandwidth.

Conclusion

As India has already witnessed digital revolution even in its remotest areas due to cost-effective 4G technology, the use of 5G can play a vital role in enhancing this sector and also facilitating India's goal to emerge as a manufacturing and innovation hub.

Connecting the dots

Parliamentary Committee and 5G

Challenges of Electric Vehicles

Context: Electric vehicles is considered as a major solution to a severe emissions problem but it is not without challenges.

Transport Sector & Emissions

- The transport sector is responsible for almost a quarter of direct carbon-dioxide emissions from burning fuel. Of that, passenger cars account for 45%.
- Emissions goes beyond tailpipe exhaust: Every step of making a vehicle's 20,000-30,000 parts, which involves a few thousand tonnes of aluminium, steel and other materials, produces emissions.

Issues with Electric Vehicles

- Electric Vehicles may eventually solve the tailpipe-emission problem, they don't address all the damage done to the environment while making them
- Compared with traditional internal combustion engine (ICE) vehicles, **greenhouse gases released while making EVs** account for a higher portion of life-cycle emissions.
- As the EV gains momentum, battery production and research is powering ahead and sales are growing. That means **material emissions** will rise to over 60% by 2040 from 18% today.
- **Decarbonizing the production phase** of a car is harder than the use phase
- Currently battery units in EVs are heavy, increasing the total weight of the car, which in turn requires more energy to drive. To deal with this, carmakers are turning to aluminium for light-weight body designs, with EVs using 45% more of the Aluminium than traditional vehicles. **Emissions from aluminium have started rising** because it's energy-intensive to mine and produce.
- Companies try to make batteries that can take cars further, they are using nickel, cobalt and manganese, which generate still more greenhouse gases.
- The high greenhouse gas emissions in the car manufacturing supply chain are "**not even properly quantified** by carmakers, because of poor disclosure of their suppliers' emissions data

Way Forward

- The best path forward starts with **better disclosure** on life-cycle emissions of EVs.
- There is need to make better EV batteries, so as to get more energy into a smaller, **lighter batteries.**
- There is need for realistic solutions like battery recycling, prioritizing types that use less carbon-intensive materials, or emission caps on the battery and electric vehicle manufacturing process.

Connecting the dots

- Electric vehicles: A Case Study of Norway
- FAME Scheme
- Impact of Electric Vehicles on Auto Industry

Maritime Security

Context: With a coastline of over 7000 KM, maritime security is an important aspect of national security for India. The Government of India is implementing Coastal Security Scheme, in phases, to strengthen security of coastal areas against sea borne threats.

Need for Maritime Security

- With a long coastline and large island chains spread across the Indian Ocean, India has a natural seaward orientation, with key sea lanes of communication coursing through its surrounding seas.
- 90% of global trade is conducted on the high seas, for the simple reason that it continues to be the most cost effective mode of transport.
- Disruption of sea lanes of communication has National and global economic repercussions.
- Freedom of navigation and unimpeded commerce are key to the spread of prosperity.
- India's natural interests stretch across both the Indian and Pacific Oceans as reflected in its inclusive Indo-Pacific vision.

The Coastal Security Scheme aims to augment the capabilities of police force of coastal states and UTs for patrolling and surveillance in territorial waters especially shallow waters close to the coast

- India has growing **strategic interest** due to its strong economic and political relations with

Southeast Asian countries coupled with concerns about the safety of the sea lanes.

- At the 2018 Shangri-La Dialogue Prime Minister Narendra Modi outlined the vision for free, open, inclusive and rules-based Indo-Pacific region which was universally welcomed.
- Later at the 14th East Asia Summit (EAS) in 2019, Prime Minister Modi announced the Indo-Pacific Oceans Initiative or IPOI as practical implementation of this shared Vision for the Indo-Pacific with a focus on collaborative effort to better manage, conserve, sustain and secure this maritime domain.
- In August this year under India's presidency United Nations Security Council also hosted a high level open debate on enhancing Maritime Security.

Measures taken by the Government

India's 5-Point Agenda for Enhancing Maritime Cooperation

- We must remove barriers in maritime trade as they are challenges for the entire world.
- Maritime disputes should be resolved peacefully and on the basis of international law only.
- We should face natural calamities and maritime threats created by non-state actors together.
- We have to preserve the maritime environment and maritime resources.
- We should encourage responsible maritime connectivity.

Key Measures -

- Capacity augmentation of maritime security agencies for surveillance and patrol of the nation's maritime zones
- Enhanced technical surveillance of coastal and offshore areas
- Establishment of mechanisms for inter-agency coordination
- Increased regulation of activities in the maritime zones
- Integration of the fishing and coastal communities
- Indian Naval ships and aircraft are regularly deployed on 'Mission Based Deployments' in Indian Ocean Region to enhance maritime security.
- Undertakes surveillance to enhance Maritime Domain Awareness and address contingencies that may arise. These are in consonance with Government of India's vision of Security and Growth for All in the Region (SAGAR) and the Maritime Security Strategy to build its role as the 'Preferred Security Partner' in our extended maritime neighbourhood.
- India proactively engages with regional Navies to enhance friendship/cooperation and promote maritime security in the Indian Ocean Region (IOR). Operational interactions with friendly foreign countries include activities like Joint Exclusive Economic Zone (EEZ) Surveillance, Coordinated Patrols on annual / bi-annual basis along the International Maritime Boundary Line (IMBL), Maritime Exercises, etc.
- India also exchanges Maritime Information bilaterally with Friendly Foreign Countries to create Maritime Domain Awareness in IOR. This includes information on military and naval assets of hostile / adversarial countries; assessment of maritime activities of mutual concern and activities related to transnational maritime based threats.
- India also participates in regional frameworks such as Association of Southeast Asian Nations Regional Forum (ARF), East Asia Summit (EAS) and the ASEAN Defence Ministers Meeting Plus (ADMM Plus) to expand its cooperation and exchanges with the Indo-Pacific region.

Can you answer the following questions?

1. What are various key aspects of Maritime Security and what is being done by India to tackle all the challenges in this domain?

The increasing geo-strategic and economic significance of the Indian Ocean realm has necessitated the development of a robust coastal security ecosystem. Do you agree? Substantiate your response.

INTERNATIONAL RELATIONS

China's New Border Law

Context: China has recently enacted a new law related to its border security management.

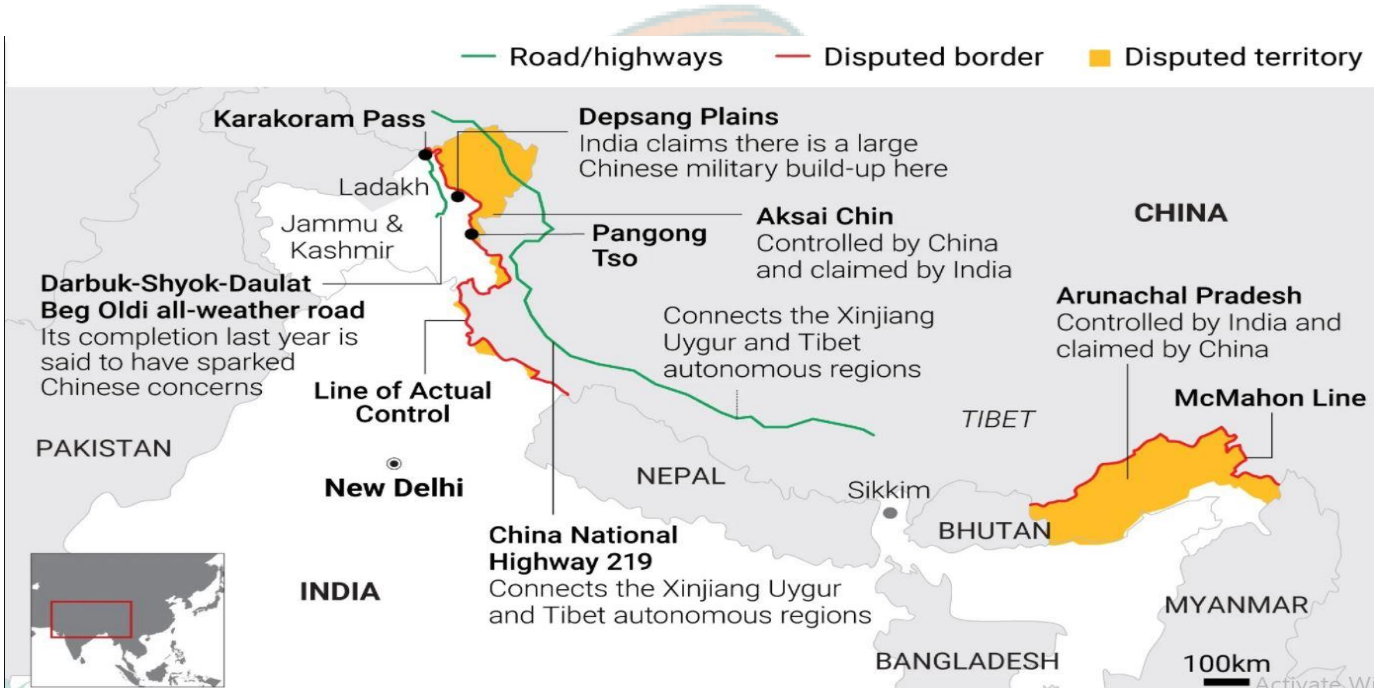
This comes amid

- A tense stand-off with India in the Himalayas, which sparked a deadly clash last year;
- Sporadic armed conflict between junta troops and ethnic armed groups in Myanmar, on China's southwestern border
- Risks of terror spillover from a chaotic Afghanistan following US troop withdrawal and a Taliban takeover.

While terror spillover from Afghanistan or violence on the Myanmar border are concerns, the timing of the law suggests pressure on India is the aim.

China's land borders

- China shares its 22,457-km land boundary with 14 countries including India, the third longest after the borders with Mongolia and Russia.
- Unlike the Indian border, however, China's borders with these two countries are not disputed.
- The only other country with which China has disputed land borders is Bhutan (477 km).



The New Border Law

- The Land Border Law aims to standardise how China patrols its massive 22,100 km land boundaries and borders with 14 countries including India.
- Sets forth that China will handle border-related issues with neighbours through negotiations, to properly resolve disputes and long-standing issues.
- Chinese military should carry out border defence duties, management and control to prevent intrusions, infiltration and provocations.
- Infrastructure projects along the land border should be approved by the State Council and the Central Military Commission.
- The law was needed as there was no specific legislation for coordinating China's border controls.
- This law was first proposed in March 2021 and will now come into effect by January 1, 2022.

India has expressed concern over this issue-

- China's unilateral decision to bring about a legislation can have implication on existing bilateral arrangements on border management as well as on the boundary question.
- Such unilateral move will have no bearing on the arrangements that both sides have already reached earlier, whether it is on the Boundary Question or for maintaining peace and

tranquillity along the LAC in India-China Border areas.
- India expects China will avoid undertaking action under the pretext of this law which could unilaterally alter the situation in the India-China border areas

India & Eurasia Policy

Context: India's intense Indo-Pacific diplomacy is about Delhi's new maritime geopolitics and now it is time to devote similar energy to the development of a "Eurasian" policy that helps in recalibration of India's continental strategy.

History of India's Eurasian Foreign Policy

- There are references to India's ancient civilisational links with Eurasia.
- The collaboration between the Sangha and the Shreni in the Buddhist era produced lasting interaction between the two regions.
- India's inward orientation after the decline of Buddhism did not stop the flow of Central Asian forces into the subcontinent.
- The Colonial times saw the outward projection of India's influence into Central Asia. British rivalry with Russia during the Great Game in the 19th and early 20th centuries put Eurasian geopolitics at the top of undivided India's security agenda.
- Before independence, many Indian nationalists turned to Europe to secure the nation's liberation from British colonialism. After independence, India's drift towards an alliance with Russia saw India neglect Europe's strategic significance.
- The Partition of the subcontinent and India's physical disconnection from inner Asia, however, cut India off from Eurasian geopolitics.

Challenges in Eurasia

1. Persistent problem with Pakistan

- National Security Advisor Ajit Doval has invited his counterparts from Pakistan, Iran, Central Asia, Russia, and China to join the consultations in Delhi on the crisis in Afghanistan. Pakistan has decline to join while China is not clear on joining.
- Pakistan's reluctance to engage with India on Afghanistan reveals Delhi's challenges & the urgency in shaping a new Eurasian strategy.

2. Meaning of Eurasia

- There is no shared international understanding of what constitutes the Eurasia region.
- In geographical terms, Eurasia is the name of a tectonic plate that lies under much of what we know as Europe and Asia.
- In Russia's definition, Eurasia covers the former territories of the Soviet Union, which collapsed in 1991. In other words, it is about Russia's political claim to a sphere of influence in its "near abroad".
- Given the deep connection between Muslim Central Asia and West Asia, some prefer the term "Greater Middle East" to describe parts of this region.
- For India, it makes sense to use the broadest possible definition of Eurasia in reimagining the region.

3. Rise of China

- The most important development in Eurasia today is the dramatic rise of China and its growing strategic assertiveness, expanding economic power and rising political influence
- **Beijing's muscular approach** to the long and disputed border with Bhutan and India, its pursuit for a **security presence in Tajikistan**, the active search for a larger role in Afghanistan are examples of China's assertiveness**.**
- Physical proximity multiplies China's economic impact on the inner Asian regions.
- China's **Belt and Road initiative** and Europe's growing economic interdependence with China have added to Beijing's powerful leverages in Eurasia

4. US rethink of its strategic commitments to Eurasia.

- The US withdrawal from Afghanistan is just the beginning of a long-overdue redefinition of US global strategic priorities.
- US and EU are now trying to rebalance the trans-Atlantic responsibilities for Europe's collective defence.
- As a result of US resizing its presence in Eurasia region, regional powers are going to reshape Eurasia.

Way Ahead for India to evolve Eurasian Policy

- India has certainly dealt with Eurasia's constituent spaces separately over the decades. What Delhi now needs is an integrated approach to Eurasia.
- Overcoming the geographic limitation — represented by the Pakistan barrier— will be central to an expanded Indian role in Eurasian geopolitics.
- A dedicated military office in the Indian mission to Brussels, where both EU and NATO are headquartered, will be a crucial step towards a sustained security dialogue with Europe.
- Indian needs to intensify the dialogue on Eurasian security with Russia. While Indo-Russian differences on the Indo-Pacific, the Quad, China, and the Taliban are real, Delhi and Moscow have good reasons to narrow their differences on Eurasia.
- There is a need for substantive Indian collaboration with both Persia (for strategic location) and Arabia (for religious influence). These partnership are needed in overcoming Turkey's alliance with Pakistan that is hostile to Delhi.
- India will surely encounter many contradictions in each of the three areas — between and among America, Europe, Russia, China, Iran, and the Arab Gulf. As in the Indo-Pacific, so in Eurasia, Delhi should not let these contradictions hold India back.

Connecting the dots

- QUAD
- The other QUAD
- Shanghai Cooperation Organisation (SCO)
- AUKUS

Q.1 Which if the following is not an endangered species as per IUCN?

a) Tiger
b) Indus River dolphin
c) Ganges dolphin
d) Four-toed Terrapin

Q.2 Consider the following statements:

1. The highest share of informal activity is in agriculture.
2. Recent report has shown that the share of the informal sector has increased sharply due to COVID-19.

Which of the above is or are correct?

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

Q.3 What is blue carbon?

a) Carbon captured by oceans and coastal ecosystems
b) Carbon sequestered in forest biomass and agricultural soils
c) Carbon contained in petroleum and natural gas
d) Carbon present in the atmosphere

Q.4 Which of the following is *incorrect* about Ganges dolphin?

a) It is the national aquatic animal of India
b) It is Found throughout the Ganges-Brahmaputra-Meghna and Karnaphuli-Sangu river systems of Nepal, India and Bangladesh.
c) It is an indicator of healthy aquatic systems
d) It is protected under Schedule III of Indian Wildlife (Protection) Act (1972)

Q.5 Consider the following statements:

1. X and Y chromosomes are known as Autosomal DNA.
2. Recently, a living descendant of the famed Lakota leader Sitting Bull has been identified & confirmed using a autosomal DNA technique.

Which of the above is or are correct?

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

Q.6 Which of the following countries is not a part of the BASIC group of countries?

a) Brazil
b) South Africa
c) Australia
d) India

Q.7 Absorption of Solar radiations at earth's surface occur due to presence of

a) Ozone
b) Water vapours
c) Carbon di-oxide
d) All of the above

Q.8 Consider the following statements regarding the National Human Rights Commission (NHRC):

1. It is a Constitutional body.
2. Chairperson of NHRC should be retired Chief Justice of India or a Judge of the Supreme Court.

Which of the above is or are correct?

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

Q.9 Who introduced rites of initiation into the well-organised Sikh army known as the Khalsa?

a) Guru Har Rai
b) Guru Har Gobind
c) Guru Tegh Bahadur
d) Guru Gobind Singh

Q.10 COVAX initiative is led by which of the following?

a) Gavi
b) Coalition for Epidemic Preparedness Innovations (CEPI)
c) World Health Organisation (WHO)
d) All of the above

Q.11 Consider the following statements regarding Asset Reconstruction Company (ARC)?

1. It is a specialized financial institution that buys the Non Performing Assets (NPAs) from banks and financial institutions so that they can clean up their balance sheets.
2. The ARCs are registered under the SEBI.

Which of the above is or are correct?

a) 1 only

b) 2 only
c) Both 1 and 2
d) Neither 1 nor 2

Q.12 Prompt Corrective Action (PCA) is associated with which of the following?

a) Banking system
b) National Education Policy
c) GST
d) India and China bilateral relations

Q.13 Consider the following statements regarding The Asia-Pacific Economic Cooperation (APEC)

1. The leaders concluded the 2021 APEC Economic Leaders' Meeting by adopting a declaration under the theme of 'Join, Work, Grow, Together'.
2. India is one of its founders
3. It is headquartered in Beijing

Which of the above is or are correct?

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

Q.14 Landraces refer to Which of the following?

a) Fencing to prevent landslides
b) Tribal group practicing indigenous health practices
c) Naturally occurring variants of commonly cultivated crops
d) International demand for real estate post COVID pandemic

Q.15 Consider the following statements:

1. Double Asteroid Redirection Test (DART) is a planetary defense-driven test of technologies for preventing an impact of Earth by a hazardous asteroid.
2. It will be launched by ISRO to small moonlet called Dimorphos.

Select the correct answer from the following codes:

a) Only 1
b) Only 2
c) Both 1 and 2
d) Neither 1 nor 2

Q.16 Consider the following statements regarding Tech NEEV:

1. The Government will be setting up 30 Science Technology and Innovation (STI) Hubs in different parts of the country for Scheduled Tribes (STs) by end of 2022 to promote scientific talent among tribal communities and for their overall socio-economic development.
2. Tech NEEV is a year-long celebration highlighting the impact of Science Technology Innovation (STI) in empowering communities for creating equitable inclusive economic growth.
3. It was launched under the Ministry of Education

Which of the above is or are correct?

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

Q.17 Which of the following would help India to become one of the fastest growing economies?

a) Smooth and land acquisition
b) Create land banks for investors
c) Monetisation of public assets
d) All of the above

Q.18 Gond community is the largest tribal group in India. The community is largely spread in which of the following states of India?

A) Madhya Pradesh
B) Chhattisgarh
C) Jharkhand
D) All of the above

Q.19 Consider the following:

1. Anna Canteen of Andhra Pradesh
2. Jharkhand Mukhyamantri Dal Bhat in Jharkhand
3. Ahaar Centre of Odisha

These are examples of which of the following?

a) Ration shops for SCs and STs
b) Community kitchens for poor people
c) Centers for Public distribution system
d) Centers for cooking Food under Mid day meal schemes

Q.20 Guru Granth Sahib was compiled by Which of the following Sikh gurus?

a) Guru Gobind Singh
b) Guru Arjan
c) Guru Nanak
d) Guru Hargobind

Q.21 Consider the following statements regarding Navy's Maritime Capability Perspective Plan (MCPP):

1. The Navy's Maritime Capability Perspective Plan (MCPP)' emphasises on capability building rather than numbers.
2. The MCPP lays down the plans for force development and modernisation over three plan periods from 2005-22.

Select the correct answer from the following codes:

a) Only 1
b) Only 2
c) Both 1 and 2
d) Neither 1 nor 2

Q.22 In which amendment to the constitution were the Bodo, Dogri, Santhali and Maithli added to the list of recognised languages?

a) 73rd Constitution Amendment Act of 2003
b) 92nd Constitution Amendment Act of 2003
c) 103rd Constitution Amendment Act, 2018
d) 101st Constitution Amendment Act, 2016

Q.23 Where is Asian Infrastructure Investment Bank headquartered?

a) Beijing
b) Shanghai
c) Tokyo
d) Gurugram

Q.24 Consider the following statements regarding Competition Commission of India (CCI)

1. It is a statutory body established in 2003.
2. CCI consists of a Chairperson and 6 Members appointed by the President of India.

Select the correct answer from the following codes:

a) Only 1
b) Only 2
c) Both 1 and 2
d) Neither 1 nor 2

Q.25 World's most sophisticated MRI facility was launched in which of the following states of India?

a) Haryana
b) Madhya Pradesh
c) Gujarat
d) Uttar Pradesh

Q.26 Indira Gandhi peace Prize 2021 was awarded to which of the following?

a) UNICEF
b) Sir David Attenborough
c) Manmohan Singh
d) NGO Pratham

Q.27 Which of the following is *not* a part of G7 countries?

a) Germany
b) Russia
c) Italy
d) Japan

Q.28 Which of the following countries do not have formal relations with Israel as part of Abraham Accords?

a) UAE
b) Jordan
c) Sudan
d) Morocco

Q.29 Which of the following has the highest deposit of lithium currently?

a) Bolivia
b) Argentina
c) Chile
d) USA

Q.30 Consider the following statements regarding National Family Health Survey-5

1. Total Fertility Rate (TFR) has reduced to 2.0 from 2.2 (NFHS-4).
2. Anaemic cases across all gender and age groups have seen tremendous decrease.

Select the correct answer from the following codes:

a) Only 1
b) Only 2
c) Both 1 and 2
d) Neither 1 nor 2

Q.31 Missile warning system named Kupol belongs to which of the following countries?

a) USA
b) UK
c) France
d) Russia

Q.32 Which of the following is *not* a member of Shanghai cooperation organisation?

a) China
b) India
c) Japan
d) Pakistan

Q.33 Consider the following statements regarding Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA)?

1. Employment under MGNREGA is a legal entitlement

2. It is is implemented by the gram panchayat

Select the correct answer from the following codes:

a) Only 1
b) Only 2
c) Both 1 and 2
d) Neither 1 nor 2

Q.34 Gopal Ratna Award is provided for achievements in which sector?

a) Agriculture
b) Marine Fisheries
c) Dairy
d) Space Technology

Q.35 Project-75 often seen in news is associated with which of the following?

a) Missiles
b) Radars
c) Gram Panchayat Empowerment
d) Submarines

Q.36 Consider the following statements regarding National Courts of Appeal

1. These are courts established not by Constitution but by Parliamentary Legislations
2. It helps unburden the Supreme Court

Select the correct answer from the following codes:

a) Only 1
b) Only 2
c) Both 1 and 2
d) Neither 1 nor 2

Q.37) Consider the following statements about Women's Involvement in Science and Engineering Research (WISER) program

1. It is a program by India-Japan German Science & Technology Centre (IGSTC)
2. It will support women scientists holding regular/long term research positions in academia or research institutes/industry and there is neither requirement of break-in-career nor any age limit.

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

a) 1 Only
b) 2 Only
c) Both 1 and 2
d) Neither 1 nor 2

Q.38) Consider the following statement about Constitution

1. The Constitution of India was adopted by the Assembly on November 26, 1949 but enforced on January 26, 1950.
2. The words 'secular' and 'socialist' were added to the preamble post the emergency in 1976.
3. When the Constitution was adopted in the year 1949, there were no provisions regarding Fundamental Duties to the Citizens though there was a Part III for Fundamental Rights.

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

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

Q.39) Namda Craft is associated with which region of India?

a) Kanpur, Uttar Pradesh
b) Gujarat
c) Kashmir
d) Nagaland

Q.40) How does the greenhouse effect work?

a) Greenhouse gases reflect the sun's energy, causing it to warm the Earth.
b) Greenhouse gases absorb the sun's energy, slowing or preventing heat from escaping into space.
c) Greenhouse gases directly warm oceans and cause dramatic weather.
d) Oceans absorb greenhouse gases, which cause the Earth's temperature to rise

ANSWER KEYS

1. D
2. A
3. A
4. D
5. B
6. C
7. D
8. B
9. D
10. D
11. A
12. A
13. B
14. C
15. A
16. A
17. D
18. D
19. B
20. B
21. C
22. B
23. A
24. A
25. A
26. D
27. B
28. B
29. A
30. A
31. D
32. C
33. C
34. C
35. D
36. B
37. B
38. D
39. C
40. B

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