2022
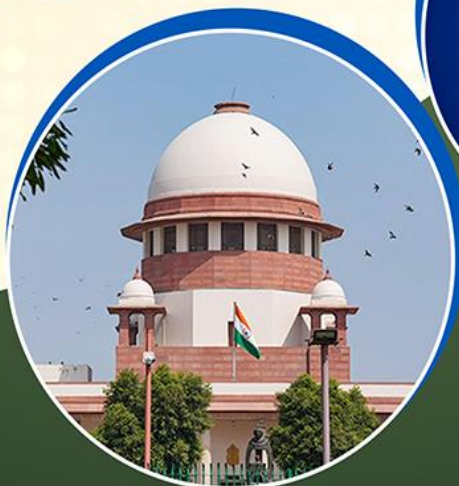## NOVEMBER
EDITION

MONTHLY
CURRENT
AFFAIRS
MAGAZINE

FOR UPSC, STATE PCS & OTHER COMPETITIVE EXAMS

WITH PRACTICE QUESTIONS

Pradhan Mantri Jan Arogya Yojana
Ayushman Bharat
PM-JAY

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Monthly Current Affairs Magazine
November 2022

Preface

The UPSC Civil Services (Mains) 2022 Examination was recently conducted in the month of September and according to the recently released UPSC Calendar 2023, the Civil Services (Prelims) Examination 2023, will be held on May 28, 2023. For the aspirants, who are preparing for UPSC CSE 2022 & 2023, needless to say, a thorough study, understanding, and revision of Current Affairs is a must!

To ease the preparation, we are providing monthly current affairs compilation for the aspirants. The magazine contains subject-wise distribution of comprehensive news articles, which have been derived from the sources like PIB, The Hindu, The Indian Express, etc.

A separate section – 'The Editorials Corner' has been added to discuss the important Editorial articles published in The Hindu and Indian Express Newspaper. We have also added MCQ Current Affairs questions with solutions. Aspirants should attempt these questions after reading the magazine, in order to evaluate their knowledge of Current Affairs.

"You cannot plow a field by turning it over in your mind. To begin, begin."
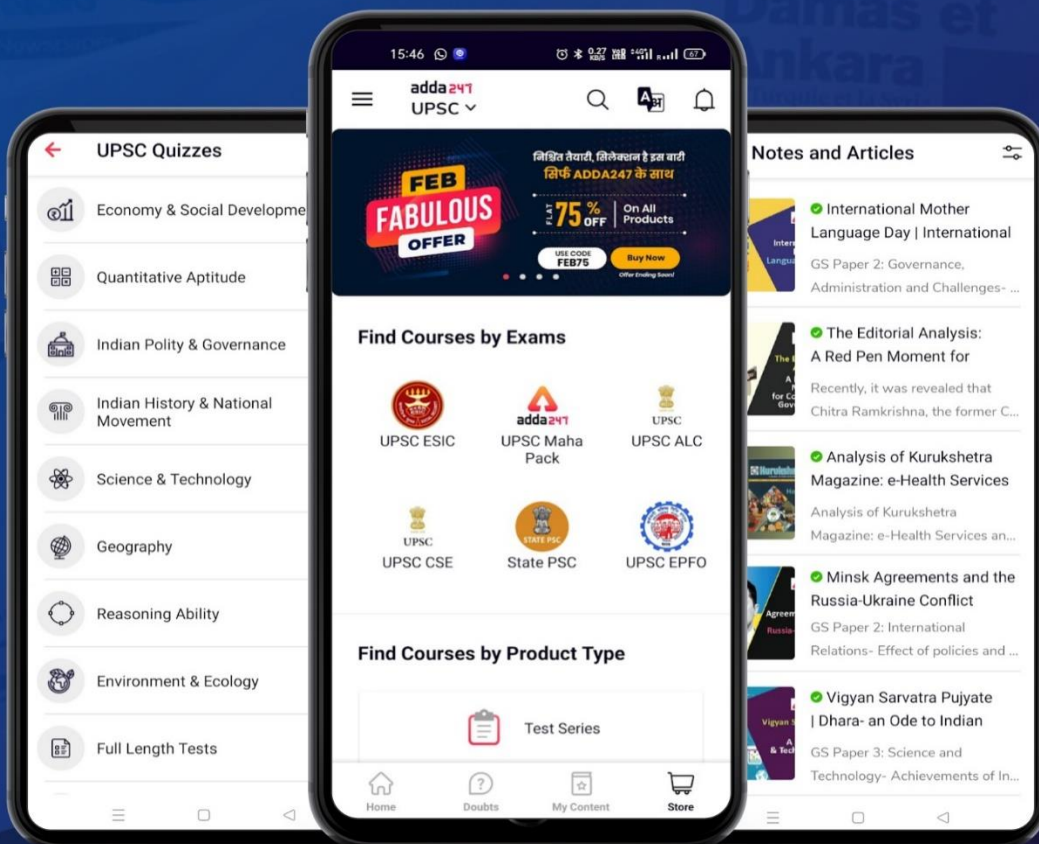*―*

Gordon B. Hinckley

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POLITY & GOVERNANCE

Ayushman Bharat Scheme

India has completed four years of Ayushman Bharat Pradhan Mantri-Jan Arogya Yojana (AB-PMJAY), the world's largest public health insurance programme.

About Ayushman Bharat

- Ayushman Bharat is National Health Protection Scheme, which will cover over 10 crore poor and vulnerable families (approximately 50 crore beneficiaries) providing coverage upto 5 lakh rupees per family per year for secondary and tertiary care hospitalization.
- It was launched in September 2018 by the Ministry of Health and Family Welfare.
- It is a centrally sponsored scheme and is jointly funded by both the union government and the states.
- It has subsumed the on-going centrally sponsored schemes – Rashtriya Swasthya Bima Yojana (RSBY) and the Senior Citizen Health Insurance Scheme (SCHIS).

Features of Ayushman Bharat scheme

- It will have a defined benefit cover of Rs. 5 lakhs per family per year.
- Benefits of the scheme are portable across the country and a beneficiary covered under the scheme will be allowed to take cashless benefits from any public/private empaneled hospitals across the country.
- It will be an entitlement-based scheme with entitlement decided on the basis of deprivation criteria in the SECC database.
- The beneficiaries can avail benefits in both public and empaneled private facilities.
- To control costs, the payments for treatment will be done on package rate (to be defined by the Government in advance) basis.

India's health expenditure post Ayushman Bharat

- India's public healthcare spending is still among the lowest in the world.

- Total health expenditure declined to 3.2% of GDP in 2018-19 from 3.3% in 2017-18, while the government's health expenditure (centre and state) as a percentage of GDP fell from 1.35% to 1.28% in the same period.
- National health estimates showed the Centre's share decreasing to 34.3% in 2018-19 from 40.8% in the previous year, while that of states rose from 59.2% to 65.7%.
- Out-of-pocket spending as a percentage of total health expenditure declined to 48.2% in 2018-19, though it is significantly higher than the world average of 18.1% in 2019

About health insurance penetration

Retail health insurance covers a meagre 3.2% of the country's population.

- With a population of 1.36 billion, India is the world's second most populous country, and is expected to surpass China soon.
- Launched in 2018 to provide universal health coverage, AB-PMJAY, takes care of the bottom 50% of the population of approximately 700 million individuals.
- The top 20% of the population is covered through social and private health insurance.
- Therefore, about 30% of the population, or about 400 million, is "the missing middle"— they do not have any financial protection for health emergencies.

Importance of good healthcare

- Covid-19 exposed the economic consequences of poor healthcare. Higher out-of-pocket healthcare spending hits savings and consumption.
- In the work space, poor health impacts physical and mental abilities, increase turnover and lead to lower productivity.
- Data shows that 7% of India's population is pushed into poverty every year due to healthcare costs.

Way forward

- Healthcare management and disease prevention should be the focus,along with an all-encompassing healthcare system, including OPD.

- The government also needs to pay attention on healthcare cover for "the missing middle" population.
- As a pilot, states may allow the authority already implementing the AB-PMJAY scheme in the state to cover the missing middle

Cabinet Committees

After the Cabinet Committee on Economic Affairs (CCEA) meeting chaired by Prime Minister Narendra Modi, the government increased the MSP for Rabi Crops.

Eight Cabinet Committees are
- Appointments Committee of the Cabinet.
- Cabinet Committee on Accommodation.
- Cabinet Committee on Economic Affairs.
- Cabinet Committee on Parliamentary Affairs.
- Cabinet Committee on Political Affairs.
- Cabinet Committee on Security.
- Cabinet Committee on Investment and Growth.
- Cabinet Committee on Employment & Skill Development.

Cabinet Committees: Key Points
- All committees except Cabinet Committee on Accommodation and Cabinet Committee on Parliamentary Affairs are headed by the Prime Minister.
- They are extra-constitutional in emergence i.e. they are not mentioned in the Constitution. However, the Rules of Business provide for their establishment.
- The executive in India works under the Government of India Transaction of Business Rules, 1961.
- These Rules emerge from Article 77(3) of the Constitution, which states: "The President shall make rules for the more convenient transaction of the business of the Government of India, and for the allocation among Ministers of the said business."
- The Prime Minister constitutes Standing Committees of the Cabinet and sets out the

specific functions assigned to them. He can add or reduce the number of committees.
- In addition to cabinet committees, several Groups of Ministers (GoMs) are constituted to look into different issues/subjects.

Cabinet Committees: Transaction of Business Rules, 1961
- The executive works under the Government of India Transaction of Business Rules, 1961.
- These Rules emerge out of Article 77(3) of the Constitution, which states: "The President shall make rules for the more convenient transaction of the business of the Government of India, and for the allocation among Ministers of the said business."
- The Rules mandate the minister-in-charge of a department (ministry) to dispose of "all business allotted to a department under" him or her.
- However, "when the subject of a case concerns more than one department", no decision can be taken "until all such departments have concurred, or, failing such concurrence, a decision thereon has been taken by or under the authority of the Cabinet".

Role of Cabinet Committees
- They are an organizational device to lessen the enormous workload of the Cabinet.
- They facilitate an in-depth examination of policy issues and effective coordination.
- They are based on the principles of division of labor and effective delegation.
- They not only resolve issues and frame proposals for the Cabinet's consideration, but they also take decisions.
- The Cabinet can, of course, review their decisions.

Cabinet Committees: What are Groups of Ministers?
- Groups of Ministers are ad hoc Committees formed to give recommendations to the cabinet on certain emergent issues and critical problem areas.

- Some of these GoMs are empowered to take decisions on behalf of the Cabinet whereas the others make recommendations to the Cabinet.
- The institution of GoMs has become a viable and effective instrument of coordination among the ministries.
- Ministers heading the concerned ministries are inducted into the relevant GoMs and when the advice is crystallised they are disbanded.

Role, Functions & Significance of 8 Cabinet Committees

Cabinet Committee on Appointments

- Cabinet Committee on Appointments is most vital which makes appointments to posts of the three service chiefs, Director General of Military Operations, chiefs of all Air and Army Commands, Director General of Defence Intelligence Agency, Scientific Advisor to the Defence Minister, Director General of Armed Forces Medical Services, Director General of Ordnance Factories, Director General of Defence Estates, Controller General of Defence Accounts, Director of Institute for Defence Studies and Analyses, Solicitor-General, Governor of the Reserve Bank of India, Chairman and Members of the Railway Board, Chief Vigilance Officers in Public Sector Undertakings and Secretariat posts of and above the rank of Joint Secretary in the Central Government.
- This Committee decides on all important empanelments and shift of officers serving on Central deputation.

The Cabinet Committee on Accommodation

- The Cabinet Committee on Accommodation determines the guidelines or rules with regard to the allotment of government accommodation.
- It also takes a call on the allotment of government accommodation to non-eligible persons and organisations as also the rent to be charged from them.
- It can consider the allotment of accommodation from the General Pool to Members of Parliament.
- It can consider proposals for shifting existing Central Government Offices to locations outside the capital.

The Cabinet Committee on Economic Affairs

- The Cabinet Committee on Economic Affairs is supposed to review economic trends, problems and prospects "for evolving a consistent and integrated economic policy", coordinate all activities requiring policy decisions at the highest level, deal with fixation of prices of agricultural produce and prices of essential commodities.
- It considers proposals for investment of more than Rs 1,000 crore, deal with industrial licensing policies and review rural development and the Public Distribution System.

The Cabinet Committee on Parliamentary Affairs

- The Cabinet Committee on Parliamentary Affairs draws the schedule for Parliament sessions and monitors the progress of government business in Parliament.
- It scrutinises non-government business and decides which official Bills and resolutions are to be presented.

The Cabinet Committee on Political Affairs

The Cabinet Committee on Political Affairs addresses problems related to Centre-state relations. It also examines economic and political issues that require a wider perspective but have no internal or external security implications.

The Cabinet Committee on Security

- The Cabinet Committee on Security deals with issues relating to law and order, internal security and policy matters concerning foreign affairs with internal or external security implications.
- It also goes into economic and political issues related to national security.
- It considers all cases involving capital defence expenditure more than Rs 1,000 crore.
- It considers issues related to the Department of Defence Production and the Department of Defence Research and Development, Services Capital Acquisition plans and schemes for procurement of security-related equipment.

The Cabinet Committee on Investment

- The Cabinet Committee on Investment "identifys key projects required to be implemented on a time-

bound basis", involving investments of Rs 1,000 crore or more, or any other critical projects, as may be specified by it, with regard to infrastructure and manufacturing.

- It prescribes time limits for giving requisite approvals and clearances by the ministries concerned in identified sectors.
- It monitors the progress of such projects.

The Cabinet Committee on Employment

- The Cabinet Committee on Employment and Skill Development provides "direction to all policies, programmes, schemes and initiatives for skill development aimed at increasing the employability of the workforce for effectively meeting the emerging requirements of the rapidly growing economy and mapping the benefits of demographic dividend".
- The panel sets targets for expeditious implementation of all skill development initiatives by the ministries and to periodically review the progress in this regard.

Controller General of Accounts (CGA)

Recently, Ms Bharati Das took charge as the new Controller General of Accounts (CGA).

- Ms Das is the 27th Controller General of Accounts (CGA), Ministry of Finance, Government of India.

Who is Controller General of Accounts (CGA)?

- **About:** Controller General of Accounts (CGA) is 'the Principal Advisor' on Accounting matters to the Union Government and is responsible for establishing and maintaining a technically sound Management Accounting System. Controller General of Accounts (CGA) in Ministry of Finance heads the organisation and is responsible for administering this system.
- **Parent Ministry:** Controller General of Accounts (CGA) is part of the Department of Expenditure, Union Ministry of Finance.
- **Constitutional Provision:** Controller General of Accounts derives his mandate from Article 150 of the Constitution.

- **Key Objective:** As a professional accounting organization, CGA aims to strengthen governance though excellence in public financial management.
- **Functioning:** The Office of CGA prepares monthly and annual analysis of expenditure, revenues, borrowings and various fiscal indicators for the Union Government.
  - o The Annual Appropriation Accounts (Civil) and Union Finance Accounts are submitted to Parliament under Article 150 of the Constitution.
  - o Along with these documents, an M.I.S Report titled 'Accounts at a Glance' is prepared and circulated to Hon'ble Members of Parliament.

Key Responsibilities of Controller General of Accounts (CGA)

The statutory mandate as incorporated in the **Allocation of Business Rules 1961** brings out the duties and responsibilities of CGA as below:

- General principles of Government accounting relating to Union or State Governments and form of accounts, and framing or revision of rules and manuals relating thereto;
- Reconciliation of cash balance of Union Government with Reserve Bank in general and, in particular, of Reserve Deposits pertaining to Civil Ministries or Departments;
- Overseeing the maintenance of adequate standards of accounting by Central Civil Accounts Offices;
- Consolidation of monthly accounts, preparation of review of trends of revenue realization and significant features of expenditure etc and preparation of annual accounts (including Summary, Civil Appropriation Accounts) showing under the respective heads, the annual receipts and disbursements for the purpose of the Union Government;
- Administration of Central Treasury Rules and Central Government Account (Receipt and Payment Rules 1983);
- Coordination and assistance in the introduction of management accounting system in Civil Ministries or Departments;

- Cadre management of Group 'A' (Indian Civil Accounts Service) and Group 'B' Officers of the Central Civil Accounts Offices;
- Matters relating to the Central Civil Accounts staff belonging to Group 'C' and 'D';
- Disbursement of Pension through Public Sector Banks (PSBs) in respect of Central Civil Pensioners, Freedom Fighters, High Court Judges, Ex-MPs and Ex-Presidents.

Supreme Court Collegium

A meeting of the Supreme Court Collegium, comprising the Chief Justice of India (CJI), and four senior-most judges was called for September 30 but did not take place, and was subsequently "closed without there being any further deliberation".

- What prevented further deliberations was the fact that the Union Law Minister, by a letter dated October 7, requested Chief Justice U.U. Lalit to nominate his successor, as the latter's tenure ends on November 8, 2022. The postponement of the meeting and its subsequent closure has invited attention to the manner in which the Collegium functions.

What is the work of the Collegium?
- The Collegium system, one in which a group of the senior-most judges make appointments to the higher judiciary, has been in practice for nearly three decades.
- Its importance lies in the fact that its opinion has primacy in the matter of appointments to the high courts and the Supreme Court, as well as transfers.
- Its legal basis is found in a series of three judgments — usually referred to as the 'Judges Cases' — concerning the higher judiciary.
- Its manner of functioning has been laid down in the form of a 'Memorandum of Procedure'.
- The Constitution says a Supreme Court judge is appointed by the President in consultation with the Chief Justice of India.

- In the 'First Judges Case', the court held that the consultation with the CJI should be "full and effective".
- The Second Judges case introduced the collegium system in 1993. It ruled that the CJI would have to consult a collegium of his two senior-most judges in the apex court on judicial appointments.
- The 'Third Judges Case' case in 1998, which was a Presidential reference, expanded the collegium to its present composition of the CJI and four of his senior-most judges.

How does the SC Collegium discharge its functions?
- The Collegium's functioning has been criticised for being opaque.
- Its resolutions and recommendations are hosted on the Supreme Court's website, giving relevant information about its decisions.
- However, the nature of the deliberations and whether there are any internal differences of opinion on the suitability of a particular candidate are unknown.
- It functions mainly through the system of adopting resolutions and sending them to the Union Law Ministry for further action. If a proposal for appointment of a judge is returned for reconsideration, the Collegium may either drop it or reiterate it. When the Collegium reiterates its decision after reconsideration, it is binding on the government.'
- **Observations of the Chief Justice of India Justice P.N. Bhagwati in the famous judges' case**
- "There must be checks and controls in the exercise of every power, particularly when it is a power to make important and crucial appointments and it must be exercisable by plurality of hands rather than be vested in a single individual. That is perhaps the reason why the Constitution-makers introduced the requirement in clause (2) of Article 124 that one or more judges out of the judges of the Supreme Court and of the High Courts should be consulted in making appointment of a Supreme Court Judge. But even with this provision, we do not think that the safeguard is adequate because it is left to the

Central government to select any one or more of the Judges of the Supreme Court and of the High Courts for the purpose of consultation. We would rather suggest that there must be a collegium to make a recommendation to the President in regard to appointment of a Supreme Court or High Court Judge. The recommending authority should be more broad-based and there should be consultation with wider interests."

Issues from recent developments

- Three questions may have arisen from the development. One is whether there ought to be a prescribed mode of decision-making, that is, through personal deliberations or by circulation or by adopting both means as per convenience.
- The second is whether all members of the Collegium give their opinions in writing, or whether they convey reservations, if any, orally.
- A related question that arises is whether all decisions ought to be unanimous and consensual.
- There is a view that a recommendation by majority, with one or two expressing reservations, may give a good reason for the executive to reject the recommendation or seek reconsideration.
- Also, the need for the Collegium not to hold any deliberations in the last month of a Chief Justice's tenure is something to be debated.
- Given that the CJI is appointed by seniority, many of them have only a short tenure running into a few months. This convention may slow down decision-making.

Way Forward

- The decision to recommend names for appointment is the collective decision of the collegium. The Chief Justice is no more than the first among equals.
- In that view of the matter, the proposition that the collegium should not meet and transact its work when less than a month remains for the CJI to retire is not logical or correct, legally or morally.
- This argument, if it is valid, should apply in the case of every member of the collegium; that would make the system completely unworkable.

- There is also no rationale for the one-month period, even assuming that some such period should be there when no decisions regarding appointments are taken.

National Curriculum Framework for Foundational Stage

Recently, the Union Education Minister Dharmendra Pradhan launched the National Curriculum Framework for foundational stage education of children in the three to eight years age group.

The National Education Policy 2020

- NEP 2020 is transforming education in India.
- It has set our education system on a path to delivering the highest quality education for all, with equity and inclusion.
- Amongst the most transformative aspects of NEP 2020 is the new 5+3+3+4 curricular structure which integrates Early Childhood Care and Education for all children of ages 3 to 8.
- Early childhood lays the foundation for life-long learning and development - it is a key determinant of the quality of overall life.
- This framework is expected to deliver the highest quality Foundational Education, across all types of institutions in the country.

National Curriculum Framework for the Foundational Stage 2022

- The NCF (National Curriculum Framework) is an important step taken to implement the New Education Policy-2020.
- As articulated in NEP 2020, National Curriculum Framework for Foundational Stage, uses 'play,' at the core of the conceptual, operational, and transactional approaches to curriculum organization, pedagogy, time and content organization, and the overall experience of the child.
- Children learn best through play, hence learning envisaged by the National Curriculum Framework will provide stimulating experiences for the child's

development in all dimensions – cognitive, social-emotional, physical, and will also enable the achievement of Foundational Literacy and Numeracy for all our children.

- The NCF has an institutional focus, the importance of the home environment cannot be overemphasized - including family, extended family, neighbours, and others in the close community - all of whom have a very significant impact on the child, particularly in this age cohort of 3-8 years.

- Hence, this NCF will deal with the role of teachers as well as parents and communities in enabling and enhancing the developmental outcomes that are sought during this stage.

Four Sections of NCF 2022
The NCF-2022 has four sections:
- **The National Curriculum Framework for School Education**
- **The National Curriculum Framework for Early Childhood Care and Education**
- **The National Curriculum Framework for Teacher Education and**
- **The National Curriculum Framework for Adult Education.**

'Panchakosha' Concept
• The framework has listed the 'panchakosha' concept for education of children and its five parts are physical development (sharirik vikas), development of life energy (pranik vikas), emotional and mental development (manasik vikas), intellectual development (bauddhik vikas) and spiritual development (chaitsik vikas).
• Panchakosha is an ancient explication of the importance of the body-mind complex in human experience and understanding.
• This non-dichotomous approach to human development gives clear pathways and direction towards a more holistic education.

Way Forward
- Research from across the world on education, neuroscience and economics demonstrates clearly that ensuring free, accessible, high quality

early childhood care and education is perhaps the very best investment that any country can make for its future, according to the NCF for foundational stage.

- Since more than 85% of a child's cumulative brain development occurs prior to the age of 6, providing appropriate care to stimulate their brain and support their physical and emotional development is essential for every child.

- All these engagements are aimed at achieving the three developmental goals of:
  o maintaining good health and well-being,
  o becoming effective communicators; and
  o becoming involved learners.

National Health Mission (NHM)

The Union Cabinet, chaired by Prime Minister, Shri Narendra Modi, was apprised about the progress under NHM during FY 2020-21 including accelerated decline in MMR, IMR, U5MR and TFR.
- It also noted the progress in respect of various diseases programmes like TB, Malaria, Kala-Azar, Dengue, Tuberculosis, Leprosy, Viral Hepatitis etc.

National Health Mission (NHM)
- **Background:** The National Rural Health Mission was launched in 2005 with the objective of building public health systems to provide accessible, affordable and quality health care to the rural population, especially the vulnerable groups, up to the District Hospitals (DH) level.
  o In 2012, the National Urban Health Mission (NUHM) was conceptualized and the NRHM was rechristened as the National Health Mission (NHM) with the two Sub Missions viz. the NRHM and the NUHM.
- **About:** NHM is implemented for universal benefit – i.e. entire population; services are offered to everyone visiting the public healthcare facilities with a special focus to vulnerable section of the society.

- **Targets:** National Health Mission (NHM) aims to achieve the following objectives-

o Reduce MMR to 90 from 113
o Reduce IMR to 23 from 32
o Reduce U5MR to 23 from 36
o Sustain TFR to 2.1
o Reduce prevalence of Leprosy to <1/10000 population and incidence to zero in all districts
o Annual Malaria Incidence to be <1/1000
o Prevent and reduce mortality & morbidity from communicable, non- communicable; injuries and emerging diseases
o Reduce household out-of-pocket expenditure on total health care expenditure
o Ending the TB epidemic by 2025 from the country.

Implementation Strategy of National Health Mission (NHM)

- The implementation strategy of Ministry of Health and Family Welfare under NHM is to provide financial and technical support to States / Union Territories (UTs).
- It also enables States/UTs to provide accessible, affordable, accountable, and effective healthcare upto District Hospitals (DHs), especially to the poor and vulnerable sections of the population.
- It has also aimed to bridge the gap in rural healthcare services through improved health infrastructure, augmentation of human resource and improved service delivery in rural areas.
- It has envisaged decentralization of programme to district level to facilitate need-based interventions, improve intra and inter-sectoral convergence and effective utilization of resources.

Progress under National Health Mission (NHM)

Progress under NHM during 2020-21 is as under:

- **Ayushman Bharat-Health & Wellness Centres:** The approvals of 1,05,147 Ayushman Bharat-Health & Wellness Centres were accorded till 31st March 2021.
  - o 1,17,440 Health & Wellness Centres were operationalized against the cumulative target of 1,10,000 till 31st March, 2022.
- **Improvement in Women and Child Health:** There has been acceleration in decline of Maternal Mortality Ratio (MMR), Under Five Mortality Rate (U5MR) and the IMR since the launch of the NRHM/NHM.
  - o U5MR in India has declined from 49 in 2013 to 36 in 2018.
  - o As per SRS 2017-19, MMR has further reduced to 103.
  - o As per SRS 2020, IMR has further reduced to 28.
  - o At the current rate of decline, India should able to reach its SDG target (MMR-70, U5MR-25) much before the due year i.e. 2030.
- **LaQshya:** 202 Labour Rooms & 141 Maternity Operation Theatres are State LaQshya certified and 64 Labour Rooms & 47 Maternity Operation Theatres are National LaQshya certified.
- **National Ambulance Services (NAS):** As on March 2021, 35 States / UTs have the facility where people can Dial 108 or 102 for calling an ambulance. 735 additional Emergency Response Service vehicles were added in 2020-21.
  - o During 2020-21, 30 additional Mobile Medical Units (MMUs) were added.
- **24x7 Services and First Referral facilities:** During 2020-21, 1140 facilities were added as FRUs operationalization.
- **Kayakalp:** 10,717 public health facilities received Kayakalp awards under this scheme in 2020-21.
- **Malaria:** The total number of malaria cases and deaths reported in 2020 were 1,81,831 and 63 respectively in comparison to 11,02,205 cases and 561 deaths reported in 2014, indicating a decline of 83.50% malaria cases and 88.77% deaths in comparison to the corresponding period of 2014.
- **Kala-Azar:** The percentage of Kala Azar (KA) endemic blocks, achieving the elimination target of < 1 KA case per 10,000 populations, increased from 74.2% in 2014 to 97.5% in 2020-21.
- **Lymphatic Filariasis:** In 2020-21, among 272 LF endemic districts, 98 districts have successfully cleared 1 Transmission Assessment Survey (TAS-1) and stopped MDA and these districts are under Post MDA surveillance.
- **Dengue:** In relation to Dengue, the National target was to sustain case fatality rate (CFR)<1 percent.
  - o The target was achieved as case fatality rate in 2014 was 0.3% and during 2015 to 2018, CFR has been sustained at 0.2%.

o Further in 2020, it has been sustained at 0.1% as it was in 2019.

- **National Tuberculosis Elimination Programme (NTEP):** A total of 1,285 Cartridge Based Nucleic Acid Amplification Test (CBNAAT) machines and 2,206 Truenat machines are operational at district level across the country.
  - o In 2020, 29.85 lakh molecular tests have been performed. This is 4 times increase as compared to 7.48 lakh during 2017.
  - o In 2020, 30,605 MDR/RR-TB patients have been initiated on shorter MDR-TB regimen, 10,489 DR-TB patients have been initiated on newer drug containing regimen (Bedaquiline-10,140 and Delamanid-349) throughout country.
- **Pradhan Mantri National Dialysis Programme (PMNDP):** It was launched in 2016 to support dialysis facilities in all district hospitals in the PPP mode under NHM.
  - o During FY 2020-21, PMNDP has been implemented in 35 States/UT in 505 Districts in 910 Dialysis Centres by deploying 5781 machines.
  - o During 2020-21, total 3.59 lakh patient availed dialysis services and 35.82 Lakhs Hemo-dialysis Sessions held.

National Lok Adalat 2022

Recently, government informed that National Lok Adalat will be held on 12th November 2022 across the country to despose off pending cases through settlement.

- Considering the benefits of the Lok Adalat system and mutual settlement between parties a large number of consumer cases are expected to be disposed of.
- National Lok Adalats are held at regular intervals where on a single day Lok Adalats are held throughout the country, in all the courts right from the Supreme Court to the District level wherein cases are disposed of in huge numbers.

National Lok Adalat 2022- Steps to Maximize Outcomes

- Department of Consumer Affairs is reaching out to consumers, companies, and organizations through SMS and emails to have maximum outreach and benefit consumers.
- With the help of technology, a separate link is being created and circulated amongst all stakeholders wherein one can enter their pending case number and commission where the case is pending and easily refer the matter to Lok Adalat.
  - o The link shall be circulated through email and SMS.
- Through data analytics, sector-wise distribution of pendency has been identified such as banking with a total number of 71379 pending cases, insurance with 168827, e-commerce with 1247, electricity with 33919, railways with 2316, etc.
  - o Steps are being taken towards the settlement of such consumer cases on priority.
- Department is in the process of collaborating with the National Legal Service Authority (NALSA) for referring the inclusion of pending consumer cases to be disposed of through the upcoming National Lok Adalat.

Lok Adalat
• Lok Adalat is one of the **alternative dispute redressal** mechanisms where disputes or cases pending in the court of law or at pre-litigation stage are compromised amicably.

Legal basis

- Lok Adalats have been given **statutory status** under the Legal Services Authorities Act, 1987.
- The Act constitutes provisions to provide free legal services to the weaker sections of the society according to **Article 39A** of the constitution.

Powers

- Under the said Act, the award made by the Lok Adalats is deemed to be a decree of a **civil court and is final and binding** on all parties and **no appeal against** such an award lies before any court of law.
- If the parties are not satisfied with the award of the Lok Adalat, there is no provision for an appeal against such an award, however they are **free to**

initiate litigation by approaching the court of appropriate jurisdiction.

No court fees
- There is **no court fee payable** when a matter is filed in a Lok Adalat.
- If a matter pending in the court of law is referred to the Lok Adalat and is settled subsequently, the court fee originally paid in the court on the complaints/petition is also refunded back to the parties.

Lok Adalat composition
- Every Lok Adalat organised for an area shall consist of
  - A **judicial officer as a chairman**,
  - and a **lawyer and a social worker** as members.

Lok Adalat types
- **National Lok Adalat**
  - These are held at regular intervals all over the nation at all levels starting from State authority level to the Taluka level.
- **Permanent Lok Adalat**
  - These are established as permanent bodies with a chairman and two members who provide a pre-litigative mechanism for settlement of matters relating to public utility services
  - If parties to the dispute fail to follow the settlement mechanism, then the permanent Lok Adalat have jurisdiction to decide the matter.
  - As per legal services authority of India, the permanent Lok Adalat has a jurisdiction not exceeding 10 lakhs.
- **Mobile Lok Adalat**
  - Mobile Lok Adalat are courts that travel from one place to another in order to help the parties in dispute reach an amicable settlement.

PM DevINE Scheme

Recently, the Union Cabinet, chaired by Shri Narendra Modi has approved a new Scheme, Prime Minister's Development Initiative for North East Region (PM-DevINE) for the remaining four years of the 15th Finance Commission from 2022-23 to 2025-26.

About PM DevINE Scheme
- **About:** PM-DevINE, was announced in the Union Budget 2022-23 to address development gaps in the North Eastern Region (NER).
  - Announcement of PM-DevINE is yet another instance of the importance being attached to the development of NE Region by the Government.
- **Funding:** The PM-DevINE Scheme will have an outlay of Rs. 6,600 crores for the four-year period from 2022-23 to 2025-26 (remaining years of 15th Finance Commission period).
  - PM-DevINE, is a Central Sector Scheme with 100% Central funding.
- **Implementing Ministry:** PM-DevINE will be implemented by Ministry of DoNER through North Eastern Council or Central Ministries/ agencies.
- **Significance:** PM-DevINE will lead to creation of infrastructure, support industries, social development projects and create livelihood activities for youth and women, thus leading to employment generation.
- **Projects:** projects with substantial socio-economic impact or sustainable livelihood opportunities for the general public will be considered in the future under PMDevINE Scheme.
  - Projects will include basic infrastructure in all Primary Health Care Centers, comprehensive facilities in Government Primary and Secondary Schools, etc.

Key Features of PM DevINE Scheme
- Measures would be taken to ensure adequate operation and maintenance of the projects sanctioned under PM-DevINE so that they are sustainable.
- To limit construction risks of time and cost overrun, falling on the Government projects would be implemented on Engineering-Procurement-Construction (EPC) basis, to the extent possible.
- PMDevINE will provide support to infrastructure and social development projects which may be larger in size and will also provide an end–to-end development solution instead of isolated projects.

- It will be ensured that there is no duplication of project support under PMDevINE with any of the other schemes of MDoNER or those of any other Ministry/ Department.

Need of PM DevINE Scheme

- The parameters of NE States in respect of Basic Minimum Services (BMS) are well below the national average.
- There are critical development gaps as per the BER District Sustainable Development Goad (SDG) Index 2021-22 prepared by NITI Aayog, UNDP and MDoNER.
- The new Scheme, PM-DevINE was announced to address Basic Minimum Services (BMS) shortfalls and development gaps in the North-Eastern States.

Key Objectives of PM DevINE Scheme

The objectives of PM-DevINE are to:
- Fund infrastructure convergently, in the spirit of PM Gati Shakti;
- Support social development projects based on felt needs of the NER;
- Enable livelihood activities for youth and women;
- Fill the development gaps in various sectors.

Swachh Bharat 2022 Campaign

Recently, Union Minister for Youth Affairs and Sports Shri Anurag Singh Thakur launched a month-long nationwide Swachh Bharat 2022 at Prayagraj, Uttar Pradesh from 1st October 2022.

About Swachh Bharat 2022 Campaign

- **About:** Swachh Bharat 2022 Campaign is being organized to instil awareness and feeling of pride among citizens to keep their surroundings clean and waste free.
- **Scope:** Swachh Bharat 2022 programme is being organised in 6 Lakh villages of 744 districts across the country through the network of Nehru Yuva Kendra Sangathan (NYKS) affiliated Youth Clubs & National Service Scheme Affiliated Institutions.

- **Mandate:** Swachh Bharat 2022 campaign will be launched with an aim to raise awareness, mobilize people and ensure their participation in making India clean.
- **Key Targets:** The Department of Youth Affairs has set a target of collecting and disposing of 1 crore kg plastic waste through Swachh Bharat 2022.
  - The objectives of the Swachh Bharat 2022 programme are to organize cleaning of public spaces and households across all the districts of the country from 01st October to 31st October 2022.
- **Participation:** Swachh Bharat 2022 Campaign involves all segments of society, Government organizations including PRIs and Non-Government Organizations
  - **Swachh Bharat** campaign will give mantra of **"Swachch Kaal: Amrit Kaal"** and make this program a People's Movement through Jan Bhagidari.

Swachh Bharat Mission (SBM)

- The Prime Minister of India had launched the Swachh Bharat Mission on 2nd October 2014 to accelerate the efforts to achieve universal sanitation coverage and to put focus on sanitation.
- Under the mission, all villages, Gram Panchayats, Districts, States and Union Territories in India declared themselves "open-defecation free" (ODF) by 2 October 2019, the 150th birth anniversary of Mahatma Gandhi, by constructing over 100 million toilets in rural India.
- To ensure that the open defecation free behaviours are sustained, no one is left behind, and that solid and liquid waste management facilities are accessible, the Mission is moving towards the next Phase II of SBMG i.e. ODF-Plus.
- ODF Plus activities under Phase II of Swachh Bharat Mission (Grameen) will reinforce ODF behaviours and focus on providing interventions for the safe management of solid and liquid waste in villages.

The Mediation Bill, 2021

The Mediation Bill, 2021 was introduced in the Rajya Sabha. The Parliamentary Standing Committee is tasked with a review of the Bill. The committee's report to the Rajya Sabha was submitted recently.
- In its report, the Committee recommends substantial changes to the Mediation Bill, aimed at institutionalising mediation and establishing the Mediation Council of India.

What is meant by Mediation?

- **Mediation:** Mediation is a process wherein the parties meet with a mutually selected impartial and neutral person who assists them in the negotiation of their differences.
- **Brings Parties Together:** Parties can save and sometimes rebuild their relationship like during a family dispute or commercial dispute.
- **Very Convenient:** The parties can control the time, location, and duration of the proceedings to large extent. Scheduling is not subject to the convenience of courts.

The Mediation Bill, 2021: India's need

- While there is no standalone legislation for mediation in India, there are several statutes containing mediation provisions, such as the Code of Civil Procedure, 1908, the Arbitration and Conciliation Act, 1996, the Companies Act, 2013, the Commercial Courts Act, 2015, and the Consumer Protection Act, 2019.
- Supreme Court mandate: The Mediation and Conciliation Project Committee of the Supreme Court of India describes mediation as a tried and tested alternative for conflict resolution.
- Being an international signatory: As India is a signatory to the Singapore Convention on Mediation (formally the United Nations Convention on International Settlement Agreements Resulting from Mediation), it is appropriate to enact a law governing domestic and international mediation.

The Mediation Bill, 2021: Key Features

- The Bill aims to promote, encourage, and facilitate mediation, especially institutional mediation, to resolve disputes, commercial and otherwise.
- The Bill further proposes mandatory mediation before litigation and it safeguards the rights of litigants to approach competent adjudicatory forums/courts for urgent relief.
- The mediation process will be confidential and immunity is provided against its disclosure in certain cases.
- The outcome of the mediation process in the form of a Mediation Settlement Agreement (MSA) will be legally enforceable and can be registered with the State district or taluk legal authorities within 90days to ensure authenticated records of the settlement.
- The Bill establishes the Mediation Council of India and also provides for community mediation.
- If the parties agree, they may appoint any person as a mediator. If not, they may apply to a mediation service provider to appoint a person from its panel of mediators.
- The Bill lists disputes that are not fit for mediation (such as those involving criminal prosecution, or affecting the rights of third parties). The central government may amend this list.
- The mediation process must be completed within 180 days, which may be extended by another 180 days by the parties.

The Mediation Bill, 2021: Concerns

- According to the Bill, pre-litigation mediation is mandatory for both parties before filing any suit or proceeding in a court, whether or not there is a mediation agreement between them.
- Parties who fail to attend pre-litigation mediation without a reasonable reason may incur a cost. However, as per Article 21 of the Constitution, access to justice is constitutional right which cannot be fettered or restricted. Mediation should just be voluntary and making it otherwise would amount to denial of justice.
- According to Clause26 of the Bill, court annexed mediation, including pre-litigation mediation, will

be conducted in accordance with the directions or rules framed by the Supreme Court or High Courts. However, the Committee objected to this. It stated that Clause26 went against the spirit of the Constitution. In countries that follow the Common Law system, it is a healthy tradition that in the absence of statutes, apex court judgments and decisions carry the same weight. The moment a law is passed however; it becomes the guiding force rather than the instructions or judgments given by the courts. Therefore, Clause 26 is unconstitutional.

• Bill considers international mediation to be domestic when it is conducted in India with the settlement being recognised as a judgment or decree of a court. The Singapore Convention does not apply to settlements that already have the status of judgments or decrees. As a result, conducting cross border mediation in India will exclude the tremendous benefits of worldwide enforceability.

Conclusion

• In order to enable a faster resolution of disputes, the Bill should be implemented after discussion with stakeholders and resolve the issues in an amicable manner. It's a good opportunity for India to become an international mediation hub for easy business transactions.

YUVA 2.0

Recently, the Ministry of Education, Department of Higher Education launched **YUVA 2.0 - Prime Minister's Scheme for Mentoring Young Authors.**

• The YUVA scheme has been conceptualized on the premise that the 21st century India needs to groom a generation of young authors to create ambassadors of Indian literature.

About YUVA 2.0 Scheme

• **YUVA 2.0 Program is** an Author Mentorship programme to train young and budding authors (below 30 years of age) in order to promote

reading, writing and book culture in the country, and project India and Indian writings globally.

• The launch of **YUVA 2.0 (Young, Upcoming and Versatile Authors)** is in tune with the Prime Minister's vision to encourage the youth to understand and appreciate India's democracy.

• **YUVA 2.0** is a part of India@75 Project (Azadi Ka Amrit Mahotsav) to bring to the fore the perspectives of the young generation of writers.

• The **YUVA 2.0** Theme: 'Democracy (institutions, events, people, constitutional values – past, present, future)' in an innovative and creative manner.

Importance of YUVA 2.0

• YUVA 2.0 scheme will help to develop a stream of writers who can write on a spectrum of subjects to promote Indian heritage, culture and knowledge system.

• The YUVA scheme will help to develop a stream of writers who can write on various facets of **Democracy in India encompassing the past, present and future**.

• It will also provide a window to the aspiring youth to articulate themselves and present a comprehensive outlook of Indian Democratic values at domestic as well as international platforms.

Implementation of YUVA 2.0

• The National Book Trust, India, under the Ministry of Education as the Implementing Agency will ensure phase-wise execution of the Scheme under well-defined stages of mentorship.

• The books prepared under this scheme will be published by National Book Trust, India, and will also be translated into other Indian languages ensuring the exchange of culture and literature, thereby promoting 'Ek Bharat Shreshtha Bharat'.

• The selected young authors will interact with some of the best authors of the world, participate in literary festivals etc.

YUVA 2.0 Selection Procedure and Winner Announcement

A total of 75 authors will be selected through an All India Contest to be conducted through https://www.mygov.in/ from 2 October 2022 - 30 November 2022.

- The received proposals would be evaluated from 1 December 2022 – 31 January 2023.
- The winners will be announced on 28 February 2023.
- The young authors will be trained by eminent authors/mentors from 1 March 2023 – 31 August 2023.
- Under the mentorship, the first set of published books will be launched on 2 October 2023.

FIFA's Football4Schools (F4S) Initiative

Recently, Union Minister Shri Dharmendra Pradhan, on behalf of the Ministry of Education signed an MoU in Mumbai with FIFA and All India Football Federation for the 'Football4Schools' initiative in India.

- Football4Schools program is a step towards translating Prime Minister Shri Narendra Modi's vision of making sports as a way of life as well as creating well-rounded citizens.

About FIFA's Football4Schools (F4S) Initiative

- **About**: Football for Schools (F4S) is an ambitious programme run by FIFA, in collaboration with UNESCO, which aims to contribute to the education, development and empowerment of around 700 million children. The F4S Programme can be used by member associations (MAs) and their governments to further national development priorities.
- **Mandate**: Football4Schools (F4S) Initiative seeks to make football more accessible to both boys and girls around the world by incorporating football activities into the education system, in partnership with relevant authorities and stakeholders.
- **Significance**: The programme has been designed to promote targeted life skills and competencies through football and contribute to the United Nations' Sustainable Development Goals (SDGs) and other priorities.
- **Alignment with other Initiatives**: The F4S Programme is aligned with global sport, education and health policies, including-
  - UNESCO's Kazan Action Plan,
  - The Education 2030: Incheon Declaration and Framework of Action, and
  - The World Health Organization (WHO) Global Action Plan on Physical Activity (GAPPA).

Components of Football4Schools (F4S) Initiative

Football4Schools (F4S) Program Includes-

- A free digital application (Football for Schools), accessible via Google Play and the Apple App Store;
- An online learning platform with relevant content for programme stakeholders;
- The provision of equipment (including adidas footballs) that will be distributed to schools; and
- A one-off USD 50,000 payment to each MA to run the programme.

Benefits of Football4Schools (F4S) Initiative

- Empower learners (boys and girls) with valuable life skills and competencies.
- Empower and provide coach-educators with the training to deliver sport and life-skills activities.
- Build the capacity of stakeholders (Schools, Member Associations and public authorities) to deliver training in life skills through football.
- Strengthen the cooperation between governments and participating schools to enable partnerships, alliances and intersectoral collaboration.

India and Football4Schools (F4S) Initiative

- FIFA, All India Football Federation and Ministry of Education, GoI through this MoU, are collaborating together to promote football and also equip the young learners with valuable life skills.
- 'Football4Schools' aims to empower 25 million young boys and girls in India through sports-integrated learning.
- Football is an immensely popular sport and the Football4Schools program uses it as a positive tool to inspire children and ensure their holistic development.

Swachh Survekshan Awards

Recently, the President of India, Smt Droupadi Murmu, presented the Swachh Survekshan Awards 2022 at a function held in New Delhi.

- Speaking on the occasion, the President congratulated residents, sanitary workers and local administration of the award winning cities.

About Swachh Survekshan Awards

- Indore was adjudged India's cleanest city for the sixth time in a row, while Surat and Navi Mumbai followed it on the next two spots
- Telangana won the first prize under the large states category under the Swachh Survekshan Grameen (SSG) 2022 which looks into the sanitation status of rural areas.
  - Haryana was in the second position while Tamil Nadu was third.
- Among smaller states and Union territories, Andaman and Nicobar secured the first position followed by Dadra and Nagar Haveli and Daman and Diu and Sikkim.
- In the category of best performing states in 'Swachh Survekshan Awards 2022', Madhya Pradesh has secured the first position, followed by Chhattisgarh and Maharashtra.
- In the category of cities having population fewer than one lakh, Maharashtra's Panchgani was ranked number one, followed by Chhattisgarh's Patan (NP) and Maharashtra's Karhad.
- Haridwar was adjudged the cleanest Ganga town in the category of more than 1 lakh population, followed by Varanasi and Rishikesh.
- Bijnor was ranked the first among Ganga towns with fewer than one lakh population. followed by Kannauj and Garhmukhteshwar respectively.
- In to the survey, Maharashtra's Deolali was adjudged the country's cleanest Cantonment Board.

Swachh Survekshan 2022

- **About:** Swachh Survekshan was introduced by MoHUA in 2016 as a competitive framework to encourage cities to improve the status of urban sanitation while encouraging large scale citizen participation.
  - The 7th edition of Swachh Survekshan was conducted to study the progress of the Swachh Bharat Mission (Urban) and rank the Urban Local Bodies (ULBs) based on various cleanliness and sanitation parameters.
- **Implementing Ministry:** Swachh Survekshan survey is being implemented by Ministry of Housing and urban Affairs under its broader program- SBM(Urban) Scheme.
- **Importance:** Over the years Swachh Survekshan has been an enabler for Mission acceleration in the cities.
  - Swachh Survekshan has led to a healthy competition among cities to improve their performance on sanitation parameters thereby improving sanitation services delivery to the citizens.
- **Coverage:** The Swachh Survekshan has evolved from being an assessment of 73 cities in 2016 to covering 4,354 cities this year.

Mission Schools of Excellence

Recently, the Prime Minister, Shri Narendra Modi launched Mission Schools of Excellence at Trimandir, Adalaj, Gujarat.
- During the event at Trimandir, the Prime Minister also launched projects worth around Rs 4260 crores.
- Earlier, Mr. Modi had inaugurated a School Monitoring Centre in Gandhinagar and asked all States to set up such state-of-the-art centres that will help enhance quality of education in schools.

Key Details about Mission Schools of Excellence

- **About:** Mission Schools of Excellence is a partially funded World Bank project aimed at strengthening the education infrastructure in the State of Gujarat.
- **Funding:** Mission Schools of Excellence is conceived with an outlay of ₹10,000 crores.
- **Key Objective:** Mission Schools of Excellence is aimed at strengthening the education infrastructure in the State through setting up of new classrooms, smart classrooms, computer labs and overall upgradation of infrastructure in schools.
- **Implementation:** Under its first phase, school infrastructure projects worth over ₹5,567 crores will be undertaken.

- **Exclusive curriculum and pedagogy:** In these residential schools which will be prepared in consultation with national and international boards.
- **Medium of Pedagogy:** the new residential schools will lay emphasis on the bilingual medium from Grade VI-VIII to prepare the students for English medium from Grade IX onwards. This is aligned with the recommendations of the New Education Policy 2020.

Mission Schools of Excellence- Additional Information

- **Mission Schools of Excellence project**: it is a **World Bank-funded Mission**. In the **period of six years**, the project aims to build-
  - 50000 new classrooms- 4,000 classrooms
  - Setting up 1.5 lakh smart classrooms in primary and secondary schools along with 20,000 computer labs and
  - Setting up 5,000 Atal Tinkering Labs.
- The project has been divided into **three phases** starting with **residential schools of excellence**, emerging schools of excellence, and aspiring schools of excellence.
- **Importance:** The mission is a step forward in implementation of the New Education Policy in Gujarat.
  - Mission Schools of Excellence will give it a boost to Gujarat in emerging it as an innovation hub in the Country and the World.
  - It will also help Gujarat towards the creation of the Amrit generation for the Amrit Kaal.

About National Education Policy

- It is the **third education policy** of our country. The earlier two was launched **in 1968 and 1986.** This national policy came after a gap of 34 years.
- It is based on the recommendations of **Kasturirangan committee**.
- It renames the Ministry of Human Resource Development to **Ministry of Education**.
- It proposes a **5+3+3+4** curricular and pedagogical structure.

Stages	Years	Class	Features
Foundational	3-8	3 years of pre-primary and 1-2	Flexible, multi-level, activity-based learning
Preparatory	9-11	3-5	Light textbooks, more formal but interactive classroom learning
Middle	12-14	6-8	Introduction of subject teachers for learning of more abstract concepts, experimental learning
Secondary	15-18	9-12	Reading in-depth, critical thinking, greater attention to life aspirations

International Relations

ASEAN-India Ministerial Meeting on Agriculture and Forestry

> Recently, the 7th ASEAN-India Ministerial Meeting (AIMMAF) on Agriculture and Forestry was held virtually.
> - The 7th ASEAN-India Ministerial meeting also welcomed the 30th anniversary of ASEAN-India relations.

India at ASEAN-India Ministerial Meeting on Agriculture and Forestry 2022

- Indian Union Minister reiterated Prime Minister Shri Narendra Modi's vision of keeping ASEAN at the center of India's Act East Policy.
- He also emphasised on mutually close regional cooperation with ASEAN to ensure sustainable and inclusive growth for agricultural development in the region.
- India also urged the ASEAN member countries to support its efforts in increasing the production, processing, value addition and consumption of millets.
  - This was highlighted while referring to the importance of millet (nutritional-cereals) as a nutritious food and the international nutritional-cereal year 2023.
  - Nutritious cereals help in the creation of nutritious, with low resource requirement and more efficient agri-food systems.

Key Developments at ASEAN-India Ministerial Meeting on Agriculture and Forestry

- The progress in implementation of various programs and activities under the Medium Term Action Plan of ASEAN-India Cooperation (Year 2021-2025) was reviewed.
- In the meeting, the commitment to ASEAN-India cooperation in agriculture and forestry was reaffirmed.
- It was also agreed to take continuous measures under ASEAN-India cooperation for the implementation of post-pandemic recovery.

  - Seamless flow of safe and nutritious agricultural products to ASEAN and India in order to mitigate the unprecedented impact of the COVID-19 pandemic.
- India said it is committed to enhance its cooperation with ASEAN in food security, nutrition, climate change adaptation, digital farming, nature-friendly agriculture, food processing, value chain, agricultural marketing and capacity building.

INDIA-ASEAN Relations

After independence India did not have good relations with ASEAN because of ideological difference with ASEAN which was under the US camp during the Cold War. After the end of Cold War, India – ASEAN relations have evolved from just economic ties to strategic heights owing to common threats and aspirations.

- 1996- India became a member of ASEAN Regional Forum (ARF) for security dialogue in Asia in which members can discuss current regional security issues and develop cooperative measures to enhance peace and security in the region.
- 2002- India and ASEAN begin to hold annual summit level meetings.
- 2009- India- ASEAN Free trade Agreement in Goods was concluded.
- 2012- India – ASEAN Strategic Partnership was concluded
- 2014- India – ASEAN Free Trade Agreement in Services and Investment was signed with an aim

to facilitate movement of manpower and investments between India and ASEAN.

- 2018- India ASEAN celebrated 25 years of their relationship by holding a commemorative Summit. Leaders of all ten ASEAN countries were invited as Chief Guests for the Republic Day parade on January 26,2018.

India-ASEAN Economic Cooperation

- ASEAN is India's fourth largest trading partner.
- The ASEAN-India Free Trade Area has been completed.
- ASEAN India-Business Council (AIBC) was set up in 2003 to bring key private sector players from India and the ASEAN countries on a single platform.
- Financial assistance has been provided to ASEAN countries from the following Funds:
  o ASEAN-India Cooperation Fund
  o ASEAN-India S&T Development Fund
  o ASEAN-India Green Fund
- Delhi Declaration identifies cooperation in the Maritime Domain.
- **Delhi Dialogue:**Annual dialogue for discussing politico-security and economic issues between ASEAN and India.
- **ASEAN-India Centre (AIC):** To undertake policy research, advocacy and networking activities with organizations and think-tanks in India and ASEAN.
- **Political Security Cooperation:** India places ASEAN at the centre of its Indo-Pacific vision of Security and Growth for All in the Region.

World Spice Congress (WSC)

14th Edition of World Spice Congress (WSC) to be held at Mumbai from 16-18 February 2023 on the sidelines of the G20 Meet 2023.

About 14th World Spice Congress (WSC)

- **About:** 14th World Spice Congress (WSC) is the world's largest exclusive business platform for the spice sector.
- **Organization:** World Spice Congress (WSC) organized by Spices Board India (Ministry of Commerce and Industry, Govt. of India) in association with various trade and export forums.
- **Venue:** World Spice Congress (WSC) is scheduled to be held at CIDCO Exhibition and Convention Centre, Navi Mumbai, Maharashtra during 16-18 February 2023.
- **Participation:** Over 1000 delegates from more than 50 countries are expected to participate in the 14th World Spice Congress (WSC) event.
- **14th World Spice Congress (WSC) theme:** The theme chosen for the current edition of WSC is 'Vision 2030: SPICES' (Sustainability– Productivity – Innovation – Collaboration- Excellence and Safety)".

Significance of 14th World Spice Congress (WSC)

- World Spice Congress (WSC) is a biennial event organized by Spices Board India remains the premier platform that brings the global spice industry together to deliberate on the problems and prospects in the spices sector.
- The event looks forward to deliberations on aspects such as production, processing, value addition, quality and safety, trade, and supply chain management of spices in the new normal situation.
- The Regulatory Authorities from major importing countries and Ministry of Trade and Export Promotion agencies of the G20 member countries are expected to have deliberations with Indian Spice Industry.

Key Details about World Spice Congress (WSC)
• **Background:** The first ever World Spice Congress was organized in 1990 and since then 13 successful editions during the last three decades have been organized.
• **About:** World Spice Congress (WSC) has become the most apt platform to deliberate the concerns and considerations of the sector over its three decades long presence.
• **Mandate:** Trade, sustainability, quality and food safety initiatives, recent developments, concerns and future prospects are discussed and deliberated in detail by the key players of the industry- the producers, traders,

processors, exporters and regulators from across the world.

- **Importance:** India, the spice hub of the world, once again takes the lead and welcomes the global spice fraternity to join in its concerted efforts to spice up the world.
  - o The WSC has established a hallowed tradition, benefitting the spices stakeholders across the globe and it remains a much sought-after event amongst the global spice community.
  - o It will foster new business opportunities and strengthen trade connections.

Interpol General Assembly

Recently, the Prime Minister, Shri Narendra Modi addressed the 90th Interpol General Assembly 2022 in Pragati Maidan, New Delhi.
- Addressing the gathering, the Prime Minister extended a warm welcome to all the dignitaries on the occasion of the 90th Interpol General Assembly in New Delhi.

90th Interpol General Assembly 2022
- **About:** The General Assembly is Interpol's supreme governing body and meets once a year to take key decisions related to its functioning.
- **INTERPOL Full form:** International Criminal Police Organisation is known as Interpol.
- **Organization of 90th Interpol general assembly:** The 90th General Assembly of Interpol is being held from the 18th to the 21st of October.
- **Participation:** The Interpol meeting 2022 is being attended by delegations from 195 Interpol member countries comprising ministers, police chiefs of countries, heads of national central bureaus and senior police officers.

Interpol General Assembly and India
- The Interpol General Assembly meeting is taking place in India after a gap of about 25 years – it was last held in 1997.
- India's proposal to host the Interpol's General Assembly in 2022 at New Delhi coinciding with

celebrations for the 75th year of India's independence was accepted by the General Assembly with an overwhelming majority.
- The event provides an opportunity to showcase best practices in India's law and order system to the entire world.

What is Interpol?
- **About:** Interpol is a secure information-sharing platform that facilitates criminal investigation of police forces across the globe through collection and dissemination of information received from various police forces.
  - o **Foundation:** International Criminal Police Organisation (Interpol) was set up in 1923.
- **Organisational Structure:** The head of Interpol is the President who is elected by the General Assembly.
  - o He comes from one of the member-nations and holds office for four years.
  - o The day-to-day activities are overseen by a full-time Secretary General also elected by the General Assembly.
- **Coordination among member countries:** All contact of a country's law enforcement agency with Interpol is through the highest investigating body of the land. The CBI assumes this role in India.
- **Key Role:** It keeps track of the movements of criminals and those under the police radar in various regions and tips off police forces which had either sought the Interpol's assistance or which in its opinion will benefit from the particulars available with it.
  - o Aided by state-of-the art databases and computer analytics, the Interpol operates round the clock and employs some of the best minds in the area of crime analysis and technology.
  - o It aims to promote the widest-possible mutual assistance between criminal police forces.

How is the Interpol organised?
- The day-to-day activities are overseen by a full-time Secretary General elected by the General Assembly, who holds office for five years.

- The General Assembly lays down the policy for execution by its Secretariat which has several specialised directorates for cybercrime, terrorism, drug trafficking, financial crime, environmental crime, human trafficking, etc.
- Every member-country is the Interpol's face in that country.
- All contact of a country's law enforcement agency with Interpol is through the highest investigating body of the land.
- The CBI assumes this role in India with one of its senior officers heading its exclusive Interwing (the National Central Bureaus) for collation of information and liaison with the world body.

B20 Indonesia Global Dialogue

Recently, Department for Promotion of Industry and Internal Trade (DPIIT) hosted Conference on B20 Indonesia Global Dialogue in partnership with Confederation of Indian Industry (CII) in New Delhi.

About B20 Indonesia Global Dialogue
- **B20** Indonesia Global Dialogue 2022 was hosted by India with the aim of aligning the perspectives of Indian industry with the policy recommendations of B20 Indonesia.
- The **B20 Indonesia Global Dialogue** conference would set tone for the deliberations to ensure that the Indian perspectives are well represented in the policy recommendation of B20 Indonesia.
- **Participation:** More than 20 business delegates from Indonesia attended the conference.
  - The Indian Government side was represented by Shri Amitabh Kant, India's Sherpa to G20, Shri Anurag Jain, Secretary, Department of Promotion of Industry and Internal Trade and other senior officers from DPIIT and other concerned Ministries.
- **Themes for Discussion:** Perspectives from B20 Indonesia was followed by perspectives from Indian Industry and Government of India on following themes-
  - Trade & Investment
  - Energy, Sustainability & Climate
  - Digitisation and
  - Finance and Infrastructure

What is Business 20 (B20)?
• **About:** Business 20 (B20), formed in 2010, is the official G20 dialogue forum with the global business community.
• **Mandate:** B20 aims to deliver concrete actionable policy recommendations on the priorities by each rotating presidency to spur economic growth and development.

G20 Summit 2022
- **Background:** The G20 was formed in 1999 in the backdrop of the financial crisis of the late 1990s that hit East Asia and Southeast Asia in particular.
  - The first G20 Summit took place in 2008 in Washington DC, US.
- **About:** G20 is a global grouping that aims to secure global financial stability by involving middle-income countries.
  - In addition to G20 Summits, the Sherpa meetings (that help in negotiations and building consensus), and other events are also organised throughout the year.
- **G20 Members:** Full members of G20 are- Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Mexico, Russia, Saudi Arabia, South Africa, South Korea, Turkey, the United Kingdom, the United States and the European Union.
  - Each year, the presidency invites guest countries.
- **G20 Secretariat:** The G20 has no permanent secretariat.
- **G20 Sherpas:** The agenda and work are coordinated by representatives of the G20 countries, known as 'Sherpas', who work together with the finance ministers and governors of the central banks.
  - India recently said ex-NITI Aayog CEO **Amitabh Kant would be the G20 Sherpa after Piyush Goyal.**
- **Significance:** Together, the G20 countries include 60 per cent of the world's population, 80 per cent of global GDP, and 75 per cent of global trade.
- **G20 Presidency:** The presidency of the G20 rotates every year among members. Presently Indonesia have the G20 Presidency.

- o **G20 Presidency 2023:** India will inherit the G20 Presidency for the year 2023.
- **G20 Troika:** Country holding the G20 presidency, together with the previous and next presidency-holder, forms the 'Troika' to ensure continuity of the G20 agenda.
  - o Italy, Indonesia, and India are the Troika countries right now.

G20 Health Ministers Meet

Recently, Indian Union Minister for Health and Family Welfare Dr. Mansukh Mandaviya addressed Second G20 Health Ministers Meet 2022 in Bali, Indonesia.
- The purpose of the **G20 Health Ministers** meeting 2022 was to discuss the progress and way forward on priorities in the healthcare sector.

India at G20 Health Ministers Meet 2022

- Indian Minister said that India is committed to protecting global health and making sure we leave behind for the coming generations a better and healthier planet to live in.
- India is committed to contributing immensely to creating a future-ready and resilient global healthcare ecosystem.
- At the same time he also elaborated on building global health resilience wherein the proposal of a Financial Intermediary Fund was discussed.
- He also highlighted-
  - o The need to acknowledge existing fault lines in the Global Health Architecture and
  - o The importance of building an inclusive, agile and responsive framework for health emergency management.

G20 COUNTRIES

G20 Summit 2022

- **Background:** The G20 was formed in 1999 in the backdrop of the financial crisis of the late 1990s that hit East Asia and Southeast Asia in particular.
  - o The first G20 Summit took place in 2008 in Washington DC, US.
- **About:** G20 is a global grouping that aims to secure global financial stability by involving middle-income countries.
  - o In addition to G20 Summits, the Sherpa meetings (that help in negotiations and building consensus), and other events are also organised throughout the year.
- **G20 Members:** Full members of G20 are-Argentina, Australia, Brazil, Canada, China, France, Germany, India, Indonesia, Italy, Japan, Mexico, Russia, Saudi Arabia, South Africa, South Korea, Turkey, the United Kingdom, the United States and the European Union.
  - o Each year, the presidency invites guest countries.
- **G20 Secretariat:** The G20 has no permanent secretariat.
- **G20 Sherpas:** The agenda and work are coordinated by representatives of the G20 countries, known as 'Sherpas', who work together with the finance ministers and governors of the central banks.
  - o India recently said ex-NITI Aayog CEO **Amitabh Kant would be the G20 Sherpa after Piyush Goyal.**
- **Significance:** Together, the G20 countries include 60 per cent of the world's population, 80 per cent of global GDP, and 75 per cent of global trade.
- **G20 Presidency:** The presidency of the G20 rotates every year among members. Presently Indonesia have the G20 Presidency.
  - o **G20 Presidency 2023:** India will inherit the G20 Presidency for the year 2023.
- **G20 Troika:** Country holding the G20 presidency, together with the previous and next presidency-holder, forms the 'Troika' to ensure continuity of the G20 agenda.
  - o Italy, Indonesia, and India are the Troika countries right now.

Global News Forum

Recently, the Union Minister of State for Information and Broadcasting Dr L. Murugan delivered the keynote address at Global News Forum 2022 meeting in New Delhi.

- He also said that it is in times of crises television news channels must become prudent and truth and trust must become the maxim to abide by.

About Global News Forum 2022

- **About:** Global News Forum 2022 is the Asia-Pacific Broadcasting Union (ABU)'s flagship three days annual NEWS event hosting around 80 foreign participants from the field of Media & Journalism from different broadcasting organizations.
  - o The Global News Forum was held from 3rd to 5th October 2022.
- **Theme:** Global News Forum 2022 theme is "Truth and trust at times of crisis".
- **Key Activities:** Discussions are being held on various important broadcasting and journalism related issues prevailing across the globe in relevance to the theme of this year event.
- **Organizer:** The Global News Forum 2022 was organized by the Asia-Pacific Broadcasting Union (ABU).

Asia-Pacific Broadcasting Union (ABU)

- **About**: Asia-Pacific Broadcasting Union (ABU) was established in 1964 as a non-profit, non-governmental, non-political, professional association.
  - o **Asia-Pacific Broadcasting Union (ABU) is** currently Headquartered at Kuala Lumpur, Malaysia.
- **Mandate:** Asia-Pacific Broadcasting Union (ABU) was established with mandate to assist the development of broadcasting organisations in the region.
- **Key Role:** ABU promotes the collective interests of television and radio broadcasters as well as key industry players and also facilitate regional and international media cooperation for members.

- **Members:** It has over 253 members in over 67 countries in Pacific region, Asia (South east, North, South, Central), Middle East, Europe, North Africa and North America, reaching a potential audience of about 2 billion people.
- **India and ABU:** Doordarshan (DD) & All India Radio (AIR) both are Full Members of ABU.
  - o All India Radio was a founding member of the ABU in the year 1964 while Doordarshan joined ABU in the year 1976.

India- Norway Joint Working Group on S&T

Recently, India-Norway Joint Working Group on S&T discussed the extension of S&T co-operation to new areas between the two countries.

- Ms Anne Line Wold, Director General, Ministry of Education and research who headed the delegation from the Norway side underlined that India is among the 9 priority countries outside Europe in S&T co-operation for Norway.
- He further emphasized on strengthening co-operation on priority areas like ocean, health, energy, climate and security.

India- Norway Joint Working Group on S&T

- **About:** The Indo-Norwegian S&T Cooperation was formalized through an Inter-governmental agreement signed in Tromso, Norway in 2006 and was activated through a Programme of Cooperation (POC) signed in Oslo in May 2009.
- **Functioning:** A Joint Working Group constituted under the framework of Inter-Governmental agreement met for 6 times so far, alternately in India and Norway.
- **Participation:** The representatives from the Scientific and Education Ministries as well as the Ministry of External Affairs of India and their counterparts from Norway participated in the India- Norway Joint Working Group on S&T.

- **Significance:** India- Norway Joint Working Group on S&T meeting would expand to the areas of increasing relevance like green hydrogen, anti-microbial resistance, renewable energy and so on.

Key Outcome of India- Norway Joint Working Group on S&T

- **Expansion of S&T co-operation between the two countries to include areas like-**
  o Quantum science and technology,
  o Electric mobility,
  o Green hydrogen,
  o Ocean science,
  o Cyber-physical system,
  o Blue economy,
  o Information and communication technology
- **Strengthening existing areas of co-operation like-**
  o Polar sciences,
  o Bio-economy,
  o Renewable energy,
  o Nano-science and technology and
  o Anti-microbial resistance
- **The meeting decided on furthering activities like-**
  o Bilateral workshops,
  o Support for on-going joint research projects,
  o New joint R & D Project call with industry participation,
  o Human capacity development,
  o Focusing on areas which has more relevance or impact to society as well as industrial R & D programmes

Importance of India- Norway Joint Working Group on S&T

The co-operation will help in-
- Enhancing quality and relevance of R&D,
- Technology translation,
- Taking it to market,
- Connecting industry, Startups, MSMEs to R&D Labs and academia,
- Societal connect,
- Science for people,
- Diversity and inclusion (Youth, Women, Rural, SC/ST),
- Aligning S & T with national priorities, water, energy, environment, transport, health, manufacturing, waste processing and so on.

About Nordic Countries
• **About:** The Nordic Countries are a group of five countries in northern Europe. These five Nordic countries are Denmark, Sweden, Norway, Finland, and Iceland.
• **Political System:** Denmark, Sweden, and Norway are constitutional monarchies and parliamentary democracies. Finland and Iceland are democratic republics.
o Iceland's parliament, the Althing, is the oldest parliament in the world.
• **Population:** Sweden is the largest and most populous of the Nordic countries. Iceland is the least populous. Denmark is the smallest.
• **Economic strength:** Nordic countries collectively represent an economy of more than $1.6 trillion.
• **India-Nordic Countries Trade Balance:** Total bilateral trade in goods and services between India and the Nordic countries is $13 billion.

India-Africa Defence Cooperation

Defence Minister Rajnath Singh visited **Egypt** from 18 to 20 September 2022 and it has opened new avenues for defence cooperation.
- This MoU adds to the list of agreements in defence sector signed between India and various African countries in recent years.

- The Defence Minister signed a Memorandum of Understanding (MoU) with his counterpart General Mohamed Zaki to enhance defence cooperation between the two countries in various sectors including training, joint exercises and defence production.
- The visit signifies India's growing defence ties with the African region.

India-Africa Defence Cooperation: Historical Ties

- India's relationship with Egypt can be traced back to the ancient times. The connect between the Nile River Valley and Indus-Saraswati valley civilisation is well recorded.
- This centuries-old historical, cultural and economic bond has fostered a strong political and defence partnership between the two countries.
- Egyptian President Abdel Fatah Al Sisi's visit to India during the India–Africa Forum Summit of 2015 may be considered a turning point in bilateral ties.
- Recently, Egypt released a postage stamp to commemorate the 75th anniversary of diplomatic relations with India in 2022.
- Egypt is also an important partner in the multilateral arena. It is a dialogue partner in the Indian Ocean Rim Association (IORA) and the Shanghai Cooperation Organisation (SCO), became a member of the BRICS bank in 2021 and will be a guest country as India hosts the G20 summit next year.

Defence Cooperation between India and Egypt

- Defence cooperation between the two countries has been going on since 1960s.
- Training has been an important component of the relationship. Particularly noteworthy is the training of Egyptian Air force pilots by India in the 1960s and 70s.
- In the 1960s, the two countries were also involved in a joint venture to manufacture the famous Helwan HA-300 jet fighter.
- The push for defence cooperation came with the setting up of the formal Joint Defence Committee (JDC) in 2006. The JDC was tasked with identifying areas of defence collaboration. This committee has since met nine times.

India-Africa Defence Cooperation: Post Covid Cooperation

- Recently, after the decline in COVID-19 pandemic, there has been an increase in bilateral engagements in the field of defence.
- The first-ever Indian Air Force–Egyptian Air Force Joint Tactical Air Exercise, 'Desert Warrior', was held in late October 2021.
- It provided an opportunity to showcase the Su-30 MKI manufactured in India by Hindustan Aeronautics Limited and India's expertise for deeper indigenisation of spares and components.
- There has been an exchange of visits at the Air Chief level. India's Air Chief Marshal V.R. Chaudhari visited Cairo in 2021, followed by the Egyptian Air Force Chief Mahmoud Foaad Abd El-Gawad's visit to New Delhi earlier this year.
- Similarly, there have been several visits of Indian Navy ships to Egypt.
- In June 2022, the Indian Navy's largest destroyer, INS Kochi, visited Port Safaga in Egypt.
- INS Kochi also participated in a maritime partnership exercise with the Egyptian Navy.

India-Africa Defence Cooperation: Common Security Challenges

- India's desire to enhance defence cooperation with Africa is mainly driven by common security challenges such as rise in terrorism, piracy and drug trafficking.
- Positive developments such as economic transformation of the continent and growing economic and development cooperation of India with Africa in the last two decades also are an important factor.
- India has developed a cooperative framework of defence cooperation with Africa guided by the principles of SAGAR (Security and Growth for All in the Region) and 'Vasudhaiva Kutumbakam' (The world is one family).

India-Africa Defence Cooperation: A window of opportunity for India

- In recent years, China has upped its activities on security issues with African countries. It hosted

the 2nd China–Africa Peace and Security Forum Ministerial meeting in July 2022.

- The action plan unveiled at the last FOCAC meeting at Dakar, Senegal in November 2021, highlighted the growing security cooperation between African countries and China.

- At the same time, there is growing realisation in Africa that Beijing's terms of engagement are less than desirable. This has given India a window of opportunity to enhance its cooperation with the region.

India–Africa Defence Dialogue (IADD)
• The IADD was institutionalised to be held biennially during successive DefExpos.
• The first India–Africa Defence Dialogue was held in February 2020 on the sidelines of DefExpo 2020. India has now institutionalised the dialogue to be held every two years along with the DefExpo.
• It seeks to build on the existing defence partnerships between African countries & India and to explore new areas of convergence for mutual engagements including areas such as capacity building, training, cyber security, maritime security and counter-terrorism.
• The India-Africa Defence Dialogue (IADD) was held on the sidelines of DefExpo 2022 in Gandhinagar, Gujarat on October 18, 2022.
• The dialogue successfully brought out various aspects of the IADD's theme 'Adopting Strategy for Synergizing and Strengthening Defence and Security Cooperation'.

IADD 2022

- Held as part of the 12th DefExpo at Gandhinagar, Gujarat from 18 to 22 October 2022.
- Fifty African countries, including 20 Defence Ministers, seven CDS/Service Chiefs and eight Permanent Secretaries participated in the Dialogue attesting to the high priority accorded to India-Africa engagement in defence and security.
- The IADD, as a part of DefExpo 2022, showcased to the African nations the growing prowess of the domestic defence industry, which is one of the major drivers of the nation's resolve to achieve

'Make in India, Make for the World' as envisioned by the Prime Minister.

- This interaction is expected to help fulfilling the Defence requirements of our African partners as also achieving the objective of catering to our domestic requirements.

India-Africa Defence Cooperation: Conclusion

It is hoped that growing India-Africa interaction will concretise India–Africa defence cooperation which focuses on empowering African countries through training, capacity-building, humanitarian assistance and disaster relief.

Reinventing the United Nations

The United Nations Secretary General (UNSG), António Guterres, addressed the United Nations General Assembly and said "The world is in big trouble, gridlocked in colossal global dysfunction, even the G20 is in the trap of geopolitical divides".

United Nations: History
• The League of Nations set up in 1920, was the first intergovernmental organization with the aim to promote international cooperation and outlived its utility with World War II.
• The United Nations claims to be the one place where all the world's nations can discuss common problems and find shared solutions that benefits all of humanity.

Why UN is at inflection point?

- A Club outside UN: The G7 Summit, held in June, endorsed the goals of a cooperative international Climate Club to accelerate climate action outside the UN.
- Nonworking of WTO: The dispute settlement mechanism of the WTO without the quorum of its members has rendered the institution dysfunctional.
- Failed promises: Despite the G7 having accepted the need for transfer of funds at Rio in 1992,

because of their role in creating the climate crisis, the promise made in 2009 to provide at least $100 billion per year in climate finance remains unfulfilled.

- **The China challenge:** China has opted for rival set of multilateral institutions. China's Belt and Road Initiative (BRI) seeks to achieve policy, infrastructure, trade, financial, and people to people connectivity by building a new platform for international cooperation to create new drivers of shared development, and covers half the world population with one third the GDP and investment of $930 billion.
- **Challenge of non-traditional security:** China's Global Development Initiative 2021, and linked Global Security Initiative, 2022, is developing a conceptual frame responding to an urbanising world, i.e., digital governance and non- traditional security, which the international system has not covered.
- **A divide within the UN:** More significant than the clash of institutions reflecting the deepening divide between the Atlantic powers and the Russia-China combine is the diffusion of wealth, technology and power. The 'rest', despite threats, are now capable of not taking sides and are looking for leadership within the United Nations, for what the UNSG characterised as "coalition of the world".

Reinventing the United Nations: Road ahead

- Strategists in major powers see the world in binary terms around rules. In a multipolar world, the question is the kind of rules needed for human wellbeing and whether principles would serve the purpose better.
- The time is ripe for a big idea that both keeps away from the current multilateral focus on global rules, amount of aid and inviolability of IPR's as well as recognises a role for competing institutions as countries can now secure the best terms themselves without bargaining.
- Just as the 'Rio principles' continue to guide climate change, Vasudhaiva Kutumbakam, or 'world as one family', focusing on comparable

levels of wellbeing can be the core of a set of universal socio-economic principles for a dialogue between the states.
- To the current global consensus around equitable sustainable development, Prime Minister Narendra Modi has added a clearer societal purpose to flesh out a universal Civilizational principle. He emphasised "Lifestyle for Environment" seeing climate change as a societal process.

Reinventing the United Nations: India's Role
India's Presidency of the Group of 20, UN Security Council (UNSC)in 2022, and the Shanghai Cooperation Organisation (SCO) in 2023 when major powers are not even talking to each other and India alone, now the fifth largest economy, is interacting with each of them, presents a historic opportunity.

Conclusion

United Nations, however dysfunctional, the only global platform for world governance. No country would gain by falling UN. Even if we dissolve UN, there is no alternative than reinventing the UN again. India's and global interest lie in preserving the UN rather than dismantling of UN.

UNESCO-MONDIACULT 2022 World Conference

Minister of State for Culture will represent India in the UNESCO World Conference on Cultural Policies and Sustainable Development- MONDIACULT 2022.
- The Indian Minister is expected to address the MONDIACULT 2022 conference on burning issues and concerns of the Cultural sector policies.

MONDIACULT 2022 World Conference

- **About:** The UNESCO World Conference on Cultural Policies and Sustainable Development- MONDIACULT 2022 is convened by UNESCO forty years after the first Mondiacult World Conference on Cultural Policies.

- o First UNESCO- MONDIACULT 2022 was held in Mexico City (Mexico) in 1982.
  - o MONDIACULT 2022 World Conference is being held 24 years after the UNESCO World Conference on Cultural Policies for Development held in Stockholm (Sweden) in 1998.
  - o **UNESCO-MONDIACULT 2022 World Conference** is the third such conference.
- **Participation:** In UNESCO-MONDIACULT 2022 World Conference, Culture Ministers of more than 100 countries will participate on this multilateral forum to decide on the global cultural discourse.
- **Mandate:** The main goal of the **MONDIACULT 2022 World** conference is-
  - o To shape a more robust and resilient cultural sector, fully anchored in the perspectives of sustainable development as well as
  - o Promotion of solidarity, peace, and security, in line with the vision enshrined in the UN Secretary-General's report 'Our Common Agenda' (September 2021).
  - o UN Secretary-General's report 'Our Common Agenda' refers to culture as a 'global public good, the good of us all.'
- **Significance:** UNESCO has convened its Member States and the global community to embark jointly on a continuous reflection on cultural policies to tackle global challenges and outline immediate and future priorities.

What are Sustainable Development Goals?
• First discussed in United Nations Conference on Sustainable Development in Rio de Janeiro in 2012, the Sustainable Development Goals (SDGs), also known as the Global Goals, were adopted by all United Nations Member States in 2015.
• Sustainable development goals of UN were adopted as a universal call to action to end poverty, protect the planet and ensure that all people enjoy peace and prosperity by 2030.
• In 2015, 3-landmark agreement was signed. Sustainable development goals by UN, COP 15 or Paris Climate Conference and Sendai Framework for Disaster Risk Reduction.

UNWGIC 2022

Recently, the Second United Nations World Geospatial Information Congress (UNWGIC 2022) began in Hyderabad.
- In his inaugural address, the Hon'ble Prime Minister of India, Shri Narendra Modi, said "There is a need for an institutional approach by the international community to help each other during a crisis".
- He cited that the geospatial technology has been driving inclusion and progress in national development projects like SVAMITVA, PM Gati Shakti master plan, JAM Trinity, etc.

UN World Geospatial Information Congress 2022
- **Venue:** UNWGIC 2022 is being held in Hyderabad.
- **Theme:** UN World Geospatial Information Congress 2022 is being organized on the theme of 'Geo-Enabling the Global Village: No one should be left behind,'.
- **Organizing Agency:** The five-day **UNWGIC 2022** conference is being hosted by the Department of Science & Technology, Ministry of Science and Technology.
  - o **UNWGIC 2022 is** convened by the United Nations Committee of Experts on Global Geospatial Information Management.
- **Significance:** Second UNWGIC 2022 will reflect on the importance of integrated geospatial information infrastructure and knowledge services to support the implementation and monitoring of sustainable development goals.
  - o It will also mirror the well-being of society, address environmental and climate challenges, embrace digital transformation and technological development, and catalyze a vibrant economy.

Importance for India
- The Congress will discuss the **liberalized geospatial policy** of India and how it has impacted the geospatial ecosystem.

- To achieve India's vision of Atmanirbhar Bharat and the objective of a $5 trillion economy, geospatial data and map restrictions are being **completely liberalised**, with major changes to India's mapping policy this year, primarily for Indian firms.
- What is freely available around the world does not need to be restricted in India, therefore geospatial data that was previously restricted will be freely available now.

UN World Geospatial Information Congress

- **About:** UN World Geospatial Information Congress is conducted **every 4-years to ensure collaboration and cooperation in the field of** geospatial information **among member countries**.
  - In **October 2018, China** hosted the first United Nations World Geospatial Information Congress (UNWGIC 2018).
- **Organizing Body:** The Congress is hosted by United Nations Committee of Experts on Global Geospatial Information Management **(UN-GGIM)**.
- **Mandate:** The objective is to **improve international collaboration** in geospatial information management and capacity among the member states and all the concerned stakeholders.

What is Geospatial Data?
• Geospatial data, known as geodata has **location information**, such as an address, area, or ZIP code, linked to a dataset.
• They can also come from Global Positioning System **(GPS)** data, **geospatial satellite imagery**, telematics devices, Internet of Things (IoT), and geotagging.

OPEC Plus

Oil prices rose about 1%, as OPEC+ members agreed to its deepest cuts to output since the 2020 COVID pandemic, despite a tight market and opposition to cuts from the United States and others.

What is OPEC+?
• The non-OPEC countries which export crude oil along with the 14 OPECs are termed as OPEC plus countries.
• OPEC plus countries include Azerbaijan, Bahrain, Brunei, Kazakhstan, Malaysia, Mexico, Oman, Russia, South Sudan, and Sudan.
• Saudi and Russia, both have been at the heart of a three-year alliance of oil producers known as OPEC Plus — which now includes 11 OPEC members and 10 non-OPEC nations — that aims to shore up oil prices with production cuts.

OPEC Plus: Slashing production

- Oil prices skyrocketed after Russia's invasion of Ukraine.
- The cut made recently is the biggest of its kind since 2020 when OPEC+ members slashed outputs by 10 million bpd during the Covid-19 pandemic.
- The reductions would boost prices and be extremely beneficial for the Middle Eastern member states, to whom Europe has turned for oil after levelling sanctions against Russia since it invaded Ukraine.
- OPEC+ members are concerned that a faltering global economy would reduce the demand for oil, and the cuts are seen as a way to protect profits.

OPEC Plus: Concerns for India

- Even after importing cheap Russian oil, India has not seen any cut in fuel prices.
- Rising oil prices are posing fiscal challenges for India, where heavily-taxed retail fuel prices have touched record highs, threatening the demand-driven recovery.
- India imports about 84% of its oil and relies on West Asian supplies to meet over three-fifths of its demand.
- As one of the largest crude-consuming countries, India is concerned that such actions by producing countries have the potential to undermine consumption-led recovery.
- This would hurt consumers, especially in our price-sensitive market.

Black Sea Grain Deal

Russia pulled out of the UN-brokered agreement, alleging that Ukraine had used a safety corridor in the Black Sea to attack its fleet.

Black Sea Grain Deal: Background

- After Russia invaded Ukraine, its navy imposed a blockade on Ukraine's Black Sea ports, trapping about 20 million tonnes of grain meant for export inside the country, along with other foodstuffs such as maize and sunflower oil.
- Since Ukraine is one of the world's largest exporters of food, this caused food prices to soar worldwide.
- However, the two sides signed the Black Sea initiative on 22 July, allowing for a safe corridor for shipping.

About Black Sea Grain Deal

- On 22 July, the UN, the Russian Federation, Türkiye and Ukraine agreed the Black Sea Grain Initiative, at a signing ceremony in Türkiye's largest city, Istanbul.
- The deal allowed exports from Ukraine of grain, other foodstuffs, and fertilizer, including ammonia, to resume through a safe maritime humanitarian corridor from three key Ukrainian ports: Chornomorsk, Odesa, and Yuzhny/Pivdennyi, to the rest of the world.
- To implement the deal, a Joint Coordination Centre (JCC) was established in Istanbul, comprising senior representatives from the Russian Federation, Türkiye, Ukraine, and the United Nations.
- According to procedures issued by the JCC, vessels wishing to participate in the Initiative will undergo inspection off Istanbul to ensure they are empty of cargo, then sail through the maritime humanitarian corridor to Ukrainian ports to load.
- The corridor is established by the JCC and monitored 24/7 to ensure the safe passage of vessels. Vessels on the return journey will also be inspected at the inspection area off Istanbul.

- Since Russia and Ukraine signed the UN-backed Black Sea Grain Initiative in Turkey on July 22, more than 9 million tonnes of corn, wheat, sunflower products, barley, rapeseed and soya have been exported.

Where has the food been sent through the Black Sea route?

- Some food has gone directly to the poorest countries in the world, and some has been shipped to countries where people are at risk of starvation, under UN humanitarian relief programmes.
- However, UN figures show that the bulk of Ukrainian food exported in the last three months has been going to Spain, Turkey, Italy, China and Netherlands.
- In pre-war years, the top importers of Ukrainian wheat were Egypt, Indonesia and Bangladesh.
- The UN said in September that just under 30% had gone to lower-income countries, while 44% had been shipped to high-income countries.
- However, the resumption of Ukrainian food exports across the world helped to lower international food prices between July and the end of October, judging by the UN's FAO food price index.

Why did Russia pull Out?
- According to Russia, Ukraine has launched a massive drone attack on the Black Sea Fleet in Sevastopol, Crimea.
- Russia also accused British troops of being involved in recent attack and blown out gas pipeline. Ukraine, so far, has denied all these allegations of the attack and called it move 'rather predicatable'.

How Russia's Pull Out will impact the world?

- The deal has helped to avert the food crisis by exporting staple food and fertilizers from Ukraine to the rest of the world.
- It has been touted as a very critical deal for bringing food security around the globe.
- The global prices of food, which was eased earlier, will increase again and the inflation will import to other countries like India.

How could Ukraine export food without using the Black Sea?

- When Russia blockaded Ukraine's ports following it invasion in February, Ukraine tried to export as much produce as it could by land, using lorries and trains.

- The EU set up what it called "solidarity lanes," so that Ukrainian grain could be shipped from ports on the Baltic Sea, and also from the Romanian port of Constanta.

- However, a lack of road and rail capacity means that Ukraine can export only 10% of its grain at most by land.

Economy

5G Economy

India is at the cusp of a digital revolution powered by increasing broadband and internet penetration, exponential data uptake, the Government's focus on digitalisation and increasing trend of technology adoption across industries.

- This revolution is likely to generate new growth avenues, boost industrial productivity and has the potential to transform the socio-economic fabric of the country.

About 5G

- 5G is the fifth-generation mobile technology — first introduced in South Korea three years ago.
- It's the next generation of mobile internet connection and offers much faster data download and upload speeds.
- Through greater use of the radio spectrum it will allow far more devices to access the mobile internet at the same time.
- The big improvement in speed and latency will come when service providers roll out standalone 5G networks, where both the core and radio networks use 5G tech.

How will 5G bring transformational changes technology-wise?

- The 5G technology can bring affordable, superior education and skill development to ordinary Indians and deliver high-quality healthcare to rural and remote areas.
- Offering low latency and data speeds about 100 times faster than 4G, the technology has the potential to enable a variety of advanced applications such as holograms, 3D avatars of people in metaverses, and telemedicine, in which near-instantaneous transmission of video and data would allow surgeons to operate remotely using a robotic scalpel.

Applications of 5G

- In precision drone-based farming; high-security routers and AI-based cyber threat detection platforms; automated guided vehicles; smart ambulances; augmented reality/virtual reality /mix reality in education and skill development; sewage monitoring system; smart-agri programmes and health diagnostics.
- Can enable solutions such as e-health, connected vehicles, more-immersive augmented reality and metaverse experiences, life-saving use cases, and advanced mobile cloud gaming.
- Will help in connecting billions of Internet of Things devices, allow higher quality video services with mobility at high speed, and delivery of critical services such as telesurgery and autonomous cars.
- Will help in real-time monitoring of disasters and in minimising the role of humans in dangerous industrial operations such as in deep mines, offshore activities etc.
- Will allow tailoring of requirements for each of these different uses within the same network.

How will 5G impact the Indian economy?

- The launch of 5G services by the Hon'ble PM is yet another momentous milestone in the nation's economic journey and will facilitate both ease-of-doing-business and the ease of living.
- It will revolutionise digital sector and will also augment agriculture, disaster management, healthcare, education, logistics and transport, fintech, industry4.0 and is a big push for AatmNirbhar Bharat.
- The government said that the cumulative economic impact of 5G on India is expected to reach $450 billion by 2035.
- Research agency OMDIA projects that with 369 million 5G subscriptions — over half the total global 5G subscriptions currently — India will be just behind China and the US in world rankings by 2026.

- India would have ousted Japan from the third spot with 147 million customers.
- 5G is a generational leap that can help increase the telecom sector's contribution to GDP to 8-9 per cent from 6.5 per cent presently.

What lies ahead

- 5G will progressively cover the entire country over the next couple of years.
- The cumulative economic impact of 5G on India is estimated to reach USD 450 billion by 2035.
- The fifth generation or 5G service is expected to unleash new economic opportunities and societal benefits.

Food Security and Climate Change

The Union Cabinet has approved the extension for the Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY-Phase VII) for a further period of 3 months from October to December 2022.

What is Climate Change?

United Nations defines Climate change as long-term shifts in temperatures and weather patterns. These shifts may be natural, such as through variations in the solar cycle. But since the 1800s, human activities have been the main driver of climate change, primarily due to burning fossil fuels like coal, oil and gas

What is food security?

The Food and Agriculture Organization (FAO)defines food security as , when all people, at all times, have physical and economic access to sufficient, safe and nutritious food to meet their dietary needs and food preferences for an active and healthy life.

Pradhan Mantri Garib Kalyan Anna Yojana

- Pradhan Mantri Garib Kalyan Anna Yojana (PM-GKAY) is a scheme as part of Atmanirbhar Bharat to supply free food grains to migrants and poor.
- Phase-I and Phase-II of this scheme was operational from April to June, 2020 and July to November, 2020 respectively.

- The PMGKAY scheme for Phase VI from April-September, 2022 would entail an estimated additional food subsidy of Rs. Rs. 80,000 Crore.

Food Security and Climate Change: Interlink

- India is going to have extreme events such as heatwaves, droughts, floods, etc. of increasing intensity and frequency.
- We may keep blaming developed economies and ask for climate justice, yet we will have to act fast and boldly to correct our own policies that increase GHG emissions and aggravate the situation.
- Power provided at next-to-nothing prices, free water and highly subsidized fertilizers especially urea are some of the policies that are damaging the natural environment.
- Food ecosystem: Food security is one of the leading concerns associated with climate change. Climate change affects food security in complex ways. It impacts crops, livestock, forestry, fisheries and aquaculture, and can cause grave social and economic consequences in the form of reduced incomes, eroded livelihoods, trade disruption and adverse health impacts.

Food security: A matter of concern

- The fiscal deficit of the Centre may go higher than provisioned in the Budget for FY23. The finance ministry not supporting the extension of this free food beyond September was, economically, a rational recommendation. More so as Covid-19 is behind us and the economy is back to its normal level of activity.
- The PMGKAY was announced in April 2020 in the wake of the pandemic's first wave. At that time, it was perhaps necessary to support all those who lost their jobs. But doubling free rations depleted the bulging stocks of grains. Now with wheat procurement having plummeted, there is a concern about whether stocks are enough to curb inflationary expectations in the country.
- To replenish wheat stocks in FCI godowns, the government will have to raise the minimum support price (MSP) of wheat quite substantially. For rice, the current stocks are ample, but given the

monsoon vagaries, the forthcoming rice harvest is estimated to be about 7 million tonnes less.

- PMGKAY will be difficult to extend beyond December without putting an undue burden on MSPs and the fiscal deficit.

Other reasons

- Even though the RBI has raised the repo rate by 50 basis points, the probability of inflation, as measured by the consumer price index (CPI), remaining higher than the central bank's tolerance band is increasing by the day.
- The RBI has already spent more than $80 billion to support the rupee, and there are limits to which it can go. And, if RBI tries to hold the rupee artificially high, it will adversely hit Indian exports, widening the current account deficit and putting further pressure on the rupee. The best that RBI can and should do is to avoid a sudden and abrupt fall in the rupee, but also let it find its natural level given what is happening globally, especially in the currency markets.
- Long haul: The risks of higher inflation from the falling rupee remain and are likely to continue for at least one year, if not more.

What can be done?

- Government must focus on innovative policies to promote exports and attract more foreign direct investment (FDI).
- Fix the issue prices of PDS supplies at half the MSP and limit the PDS coverage to 30 per cent of the bottom population.
- The best that RBI can and should do is to avoid a sudden and abrupt fall in the rupee, but also let it find its natural level given what is happening globally, especially in the currency markets.
- If we have to tame food inflation, we will have to invest more in climate-smart agriculture, in precision farming, with high productivity and less damage to natural resources.
- Science and technologies can, of course, help us, but they cannot be scaled in a perverse policy ecosystem.
- India needs to step up public investment in development and dissemination of crop varieties

which are more tolerant of temperature and precipitation fluctuations and are more water and nutrient efficient. A four-pronged strategy is recommended for the water sector; Increase irrigation efficiency, Promote micro irrigation in water-deficient areas, Better water resource infrastructure planning, Restoration of water bodies in rural areas, Stronger emphasis on public health.

- A recent report by NITI Aayog suggests that the government should transfer a minimum specified sum of cash to affected farmers and landless workers as an instant relief. For richer farmers who may want insurance above this relief, the report recommends a separate commercially viable crop insurance programme.

Conclusion

So far India has done well to tame the food inflation as compared to other developed and developing economies. Present policy of RBI burning the FOREX and government increasing the deficit is unsustainable in long run. Food security needs to be insured by climate resilient policies for long term sustenance.

International Year of Millets 2023

Recently, a MoU was signed between the Department of Agriculture and Farmers Welfare and the NAFED in New Delhi to boost the initiative visioned by the Prime Minister to promote Millets towards celebration of the International Year of Millets 2023.

- Both organizations will work together for the promotion and marketing of millet-based products, keeping in view the initiative of "International Year of Millets (IYOM)-2023".

About International Year of Millets 2023

- **About:** International Year of Millets 2023 was proposed by the Government of India to the United Nations, which is to be celebrated across the world.

o The Food and Agriculture Organisation (FAO) approved India's proposal in 2018 and the United Nations General Assembly has declared the year 2023 as the International Year of Millets.

o The International Year of Millets 2023 was adopted by a United Nations Resolution for which India took the lead and was supported by over 70 nations.

• **Objective:** The International Year of Millets 2023 aims to promote millets as a key component of the food basket. The International Year of Millets stands to provide a unique opportunity-

o To increase global production,

o Ensure efficient processing and consumption,

o Promote a better utilization of crop rotations, and

o Encourage better connectivity throughout food systems

• **Significance:** The International Year will-

o Elevate awareness of the contribution of millets for food security and nutrition

o Inspire stakeholders on improving sustainable production and quality of millets; and

o Draw focus for enhanced investment in research and development and extension services to achieve the other two aims.

MSP Increased for Rabi Crop

The Cabinet Committee on Economic Affairs chaired by PM Shri Modi has approved the increase in the Minimum Support Prices (MSP) for all mandated Rabi Crops for Marketing Season 2023-24.

• The Ministry of Agriculture had recommended an increase in MSP of certain Rabi crops after it received the recommendations from the MSP committee. It was then sent to the Union Cabinet for approval.

MSP Increased for Rabi Crop: Context

• The increase in MSP for Rabi Crops for Marketing Season 2023-24 is in line with the Union Budget 2018-19 announcement of fixing the MSP at a

level of at lease 1.5 times of the All-India weighted average Cost of Production, aiming at reasonably fair remuneration for the farmers.

• The maximum rate of return is 104 percent for rapeseed & mustard, followed by 100 percent for wheat, 85 per cent for lentil; 66 per cent for gram; 60 per cent for barley; and 50 per cent for safflower.

MSP Committee

• Notified on July 18, 2022, the committee is tasked to give suggestions on making minimum support price (MSP) more effective and transparent, how to give more autonomy to the Commission for Agricultural Costs and Prices (CACP) and measures to make it more scientific, to strengthen the agricultural marketing system, steps needed to promote natural farming, and crop diversification.

• The committee gives "suggestions to make available MSP to farmers of the country by making the system more effective and transparent."

• It gives suggestions on "practicality to give more autonomy to the Commission for Agricultural Costs and Prices (CACP) and measures to make it more scientific".

What is Minimum Support Price(MSP)?
• The MSP is the rate at which the government buys grains from farmers.
• Reason behind the idea of MSP is to counter price volatility of agricultural commodities due to the factors like variation in their supply, lack of market integration and information asymmetry.
• Fixation of MSP: The MSP is fixed for 23 crops based on the recommendations of the Commission for Agricultural Costs and Prices (CACP), Ministry of Agriculture.

MSP for all Rabi Crops for Marketing Season 2023-24

• The MSP for wheat has been increased by Rs 110 from Rs 2,015 in 2022-23 to Rs 2,125 in 2023-24 per quintal, while the MSP for barley has been increased by Rs 100 from Rs 1,635 per quintal to Rs 1,735 per quintal.

- The minimum support price for gram has been increased by Rs 105 from Rs 5,230 per quintal to Rs 5,335 per quintal, while safflower MSP has been increased by Rs 209 from Rs 5,441 to Rs 5,650.
- The MSP for rapeseed and mustard has been increased by Rs 400 from Rs 5,050 to Rs 5,450 per quintal.
- The highest increase in MSP has been approved for masur dal, which has increased by Rs 500 from Rs 5,500 to Rs 6,000.

Increased production & Productivity of Oilseed and Pulses

- From the year 2014-15, there has been a renewed focus on increasing the production of oilseeds and pulses. The efforts have yielded good results.
- Oilseeds production has increased from 27.51 million tonnes in 2014-15 to 37.70 million tonnes in 2021-22 (4th advance estimates). Pulses production has shown similar increasing trend.
- The Seed Minikits programme is a major tool for introducing new varieties of seeds in the farmers' fields and is instrumental for increasing the seed replacement rate.
- The productivity of pulses and oilseeds have increased substantially since 2014-15.
- In case of pulses productivity has been increased from 728 kg/ha (2014-15) to 892 kg/ha (4th Advance estimates, 2021-22) i.e. 22.53% increase. Similarly, in oilseed crops productivity has been increased from 1075 kg/ha (2014-15) to 1292 kg/ha (4th Advance estimates, 2021-22).

What GOI is doing to increase Production & Productivity?

- The Government's priority is on increasing production of oilseeds and pulses and thus fulfilling the objective of Atmanirbhar Bharat.
- The formulated strategies are to increase production through area expansion, productivity through High Yielding Varieties (HYVs), MSP support and procurement.
- Government is also promoting adoption of smart farming methods through the use of technology and innovation in the agriculture sector in the country.
- Government is implementing a Digital Agriculture Mission (DAM), which includes India Digital Ecosystem of Agriculture (IDEA), Farmers Database, Unified Farmers Service Interface (UFSI), Funding to the States on the new Technology (NeGPA), Revamping Mahalnobis National Crop Forecast Centre (MNCFC), Soil health, Fertility and profile mapping.
- Under the NeGPA programme, funding is given to State Governments for Digital Agriculture projects using emerging technologies like Artificial Intelligence and Machine Learning (AI/ML), Internet of Things (IOT), Block chain etc.
- Adoption of drone technologies is being done.
- To promote smart farming, the Government also promotes Startups in the Agriculture sector and nurtures agri-entrepreneurs.

US legislation NOPEC

US legislation NOPEC which could open members of oil producing group OPEC+ to antitrust lawsuits has emerged as a possible tool to tackle high fuel prices

What is US legislation NOPEC?

- NOPEC stands for No Oil Producing and Exporting Cartels (NOPEC).
- It is a bill to protect US consumers and businesses from engineered oil spikes.
- But some analysts warn that implementing it could also have some dangerous unintended consequences.

Need of US legislation NOPEC

- OPEC+, which groups the Organization of the Petroleum Exporting Countries (OPEC) and allies including Russia, agreed to steep production cuts, curbing supply in an already tight market.
- After the decision, the US decided to reduce the group's control over energy prices.

US legislation NOPEC: Key features

- The bipartisan NOPEC bill would tweak US antitrust law to revoke the sovereign immunity that has protected OPEC+ members and their national oil companies from lawsuits.
- If signed into law, the US attorney general would gain the option to sue the oil cartel or its members, such as Saudi Arabia, in federal court.
- It is unclear exactly how a federal court could enforce judicial antitrust decisions against a foreign nation.

US legislation NOPEC: Historical Background

- Previous versions of the NOPEC bill have failed amid resistance by oil industry groups, including the top US oil lobby groups.
- Saudi Arabia has rebuffed repeated lobbying during visits by Biden officials not to cut production.
- Instead, OPEC+ has agreed to cut output by the most since the start of the COVID-19 pandemic.

US legislation NOPEC: Implications

- NOPEC more or less is a knee-jerk reaction from the US against oil hegemony of the OPEC+.
- If passed into law, it could lead to unintended blowback.
- In 2019, for example, Saudi Arabia threatened to sell its oil in currencies other than the dollar if Washington passed a version of the NOPEC bill.
- There is a possibility that other countries could take similar action on the US for withholding agricultural output to support domestic farming, for example.

One Nation, One Fertilizer Scheme

During the two-day event PM Kisan Samman Sammelan 2022, Prime Minister launched Pradhan Mantri Bhartiya Jan Urvarak Pariyojana - One Nation One Fertiliser on October 17, 2022.
- Under the scheme, Prime Minister will launch Bharat Urea Bags, which will help companies market fertilisers under the single brand name 'Bharat'.

About One Nation One Fertiliser Scheme

- Under the scheme, all fertiliser companies, State Trading Entities (STEs) and Fertiliser Marketing Entities (FMEs) will be required to use a single "Bharat" brand for fertilisers and logo under the PMBJP.
- All subsidised soil nutrients - urea, di-ammonium phosphate (DAP), Muriate of Potash (MoP), and NPK - will be marketed under the single brand Bharat across the nation.
- With the launch of this scheme, India will have a common bag design across the country like Bharat urea, Bharat DAP, Bharat MOP, Bharat NPK, and so on.
- The new "Bharat" brand name and PMBJP logo will cover two-thirds of the front of the fertiliser packet
- The manufacturing brands can only display their name, logo, and other information on the remaining one-third space.

Why did the government introduce this scheme?

The government introduced a single 'Bharat' brand for all subsidised fertilisers because:

(1) There are some 26 fertilisers (inclusive of urea), on which government bears subsidy and also effectively decides the MRPs.

(2) Apart from subsidising and deciding at what price companies can sell, the government also decides where they can sell. This is done through the Fertiliser (Movement) Control Order, 1973.

(3) When the government is spending vast sums of money on fertiliser subsidy (the bill is likely to cross Rs 200,000 crore in 2022-23), plus deciding where and at what price companies can sell, it would obviously want to take credit and send that message to farmers.

How will the One Nation One Fertilizer Scheme help farmers?

- The rationale behind bringing One Nation One Fertilizer Scheme is that since fertilizers of a particular category must meet the nutrient-content specifications of the Fertilizer Control Order (FCO),

there is no product differentiation among different brands for each type of fertilizer. For example, DAP should have the same nutrient content, whether it is produced by one company or another.

- So the concept of 'One Nation, One Fertiliser' will help farmers overcome their confusion over brand-specific choices, as all DAP fertilizer brands must have 18% nitrogen and 46% phosphorus.
- Farmers are generally unaware of this fact and prefer certain brands as a result of vigorous marketing strategies adopted by firms with strong retailer networks developed over time.
- It has been found that such brand preferences have resulted in fertilizer-supply delays to farmers and an extra burden on the exchequer due to increased freight subsidies needing to be paid for the long-distance crisscross movement of fertilizers.
- The One Nation One Fertiliser scheme will prevent the criss-cross movement of fertilisers and reduce high freight subsidies.

PM Kisan Samruddhi Kendras (PM-KSK)

- Yesterday the PM also inaugurated 600 PM Kisan Samruddhi Kendras (PM-KSK) that will act as a one-stop-shop for farmers who can buy products and avail of multiple services related to the agriculture sector.
- The PM-KSK will supply agri-inputs like seeds, fertilisers, and farm implements.
- It will also provide testing facilities for soil, seeds and fertilisers. Information about government schemes will also be provided.
- The Centre also intends to convert more than 3.3 lakh fertiliser retail shops in the country into PM-Kisan Samruddhi Kendras (PM-KSK) in a phased manner.

Possible drawbacks of the scheme

- It will disincentivise fertiliser companies from undertaking marketing and brand promotion activities.
- They will now be reduced to contract manufacturers and importers for the government.
- Currently, in case of any bag or batch of fertilisers not meeting the required standards, the blame is

put on the company. But now, that may be passed on fully to the government.

Special MPC Meet on Inflation

The Reserve Bank on October 27, 2022 called a special meeting of the Monetary Policy Committee (MPC) on November 3 to prepare a report on its failure to keep retail inflation below 6 percent for three consecutive quarters.

- This is for the first time since its constitution in 2016 that a six-member interest rate-setting body is meeting for such a purpose.

RBI to Hold Special MPC Meet on Inflation: Background

- Inflation in India has remained above the upper tolerance limit of 6 percent for nine consecutive months or three quarters.
- The consumer price-based index (CPI), or retail inflation, accelerated to 7.4 percent in September from 7 percent in August.
- CPI has been above the Reserve Bank's tolerance band of 2-6 percent since January 2022, resulting in a 190 basis points (bps) increase in repo rate since May this year.
- Retail inflation has consistently been above the upper bound of 6 per cent since January and the RBI has hiked the policy repo by 190 basis points this year to tackle elevated inflation.

Relevant Provisions under RBI Act

- Under the provisions of Section 45ZN of the Reserve Bank of India (RBI) Act, an additional meeting of the MPC is being scheduled on November 3, 2022.

- Section 45ZN of the Act deals with failure to maintain the inflation target.

What is RBI's Mandate on Inflation & has it been failing in its mandate?

- By law, the RBI is supposed to target retail inflation at 4%. The law, however, prescribes some leeway to the RBI; it allows for retail inflation to vary by 2

percentage points on either side. So, in a particular month, the RBI could allow inflation to be 2% or 6%.

- This way, on the whole, inflation should be around 4%. The leeway of 2% to 6% does not mean that the RBI can allow inflation to stay at 6% all through.

- But inflation has been rising for over two years.

- Since October 2019, there's been just one month when retail inflation has been close to 4%. In all other months, even those of the nationwide Covid-19 lockdown in 2020, saw inflation staying well above 4%, and often even above the 6% mark.

- This is central to understanding how the RBI has been failing in its mandate.

RBI to Hold Special MPC Meet on Inflation: What will happen in the meeting?

- This time RBI's MPC members will not be scratching their heads to decide whether or not to raise interest rates to slay the spectre of inflation.

- Instead, the panel will be meeting to compose a nuanced, and possibly elaborate, letter to explain why they slipped up on their mandate to hold inflation within the mandated range of 2 to 6 percent for three consequent quarter.

Tokenization in online purchase

The RBI's deadline for tokenization of cards used in online payments passed on 30 September.

What is Tokenization?

- Tokenization refers to the replacement of credit and debit card details with an alternative code called a 'token'.

- This token is unique for a combination of card, token requestor (the entity that accepts a request from the customer for tokenization of a card and passes it on to the card network to issue a token) and the device.

Tokenization: Working

- Tokenizing credit and debit cards is a way to reduce the number of places where your card data can be found.

- For instance, payments on Uber showed a warning that your card data will be saved with payment gateways such as Visa and Mastercard.

- What it is saying is that a merchant like Uber will have to work with payment networks like Visa to convert the card details into a digital token, which is then used to validate transactions.

- As a result, the card details you enter on the Uber app, or any online platform, are not stored on the company's cloud servers, and are hence more secure.

What is the digital token being used?

- The digital token is a randomized string, usually alphanumeric. So, a 16-digit card number gets converted to something like 8f9%yf57ljTa.

- It is generated by computer programmes, and the card network tags the token to your actual card details, and relays the token to the merchant.

- When payments are to be requested, the merchant sends this token to the card network, which matches it against the saved details and validates the transaction.

- A third party accessing the token won't have use for it, since tokens will be unique across combinations of card, token requestor and merchants.

Tokenization services

- Tokenization can be performed only by the authorized card network and recovery of original Primary Account Number (PAN) should be feasible for the authorized card network only.

- Adequate safeguards have to be put in place to ensure that PAN cannot be found out from the token and vice versa, by anyone except the card network.

- RBI has emphasized that the integrity of the token generation process has to be ensured at all times.

Tokenization: Benefits

- Transaction safety: Tokenization reduces the chances of fraud arising from sharing card details.

- Easy payments: The token is used to perform contactless card transactions at point-of-sale (PoS) terminals and QR code payments.

- Data storage: Only card networks and card-issuing banks will have access to and can store any card data.

Difference between Tokenization and Encryption

- The primary difference is that the token cannot lead one to the card details.
- In encryption, a computer program obfuscates data using an encryption key, and this key can turn the data back to its original form.
- In tokenization, however, there is no way to know what data a token represents unless one has access to the databases of the actual issuer of that token.
- In many cases, laws do not consider tokens as "sensitive data", and hence, companies don't have to ensure the same compliance to protect them.

Unified Logistics Interface Platform (ULIP)

Recently launched Unified Logistics Interface Platform (ULIP) (as part of the National Logistics Policy) received tremendous response as 13 organisations sign Non-Disclosure Agreement (NDA) to access data on ULIP.

- National Logistics Policy (NLP) aims to bring ease of doing business in the logistics sector by simplifying the logistics processes, improving its efficiency, bringing in transparency and visibility, and reducing logistics cost & time.

Unified Logistics Interface Platform (ULIP)
• **About:** Unified Logistics Interface Platform (ULIP) was launched by Prime Minister Shri Narendra Modi, as part of the 'National Logistics Policy (NLP)' on September 17, 2022.
• **Mandate**: ULIP aims to enable the industry players for creating a market for revenue generation as well as abolition of monopoly and un-levelled advantage.
• **Significance:** The ULIP platform will enable the industry players to get secure access to the information related to logistics and resources available with various Ministries.
o At present 30 systems from seven ministries are integrated through more than 100 APIs covering

more than 1600 data fields for usage by the stakeholders.

Unified Logistics Interface Platform (ULIP) Working

- ULIP has a dedicated portal that makes the process of data request simpler, faster, and transparent.
- **ULIP Portal:** The portal can be accessed through "https://goulip.in/".
  - o A dedicated support team is working round the clock to provide support to the industry players for registration on the portal.
  - o After the registration, users need to submit their use-cases, which will then be reviewed based on the proposed usage of the requested data.
  - o After the successful review, users requesting for data will have to sign a 'Non-Disclosure Agreement (NDA)'.
- With signing of the NDAs, industry players can develop APIs for integration with ULIP.
- After the system security check and thorough testing of the integration, the users can fetch authentic data through ULIP from various government sources.

Unified Logistics Interface Platform (ULIP) Benefits

- ULIP will give direct and indirect benefits to all logistics stakeholders like-
  - o Verification of drivers and vehicles details in a single click,
  - o Tracking & tracing of consignment,
  - o Route Optimization Planning,
  - o Timely update on the destination of the consignment,
  - o Reduce paper works,
  - o Empty carrier & container visibility,
  - o Inventory management etc.
- By reducing regulatory, documentary and other delays, ULIP will enable structured planning by helping in decision making on optimum use of modes of logistics thereby saving cost and time.

National Logistics Policy (NLP)

- **Background:** Finance Minister Nirmala Sitharaman mentioned the need of a comprehensive National

Logistics Policy (NLP) in her Union Budget 2020-21 Speech.

- **Need:** The need for a national logistics policy was felt since the logistics cost in India is high as compared to other developed economies.
  - o It is imperative to reduce the logistics cost in India for improving the competitiveness of Indian goods both in domestic as well as export markets.
  - o Reduced logistics cost improves efficiency cutting across various sectors of the economy, encouraging value addition and enterprise.
- **About:** National Logistics Policy is a comprehensive effort to address issues of high cost and inefficiency by laying down an overarching interdisciplinary, cross-sectoral and multi-jurisdictional framework for the development of the entire logistics ecosystem,
- **Key Objectives:** National Logistics Policy 2022 aims to ensure seamless movement of goods and services across the country and cut elevated logistics costs, often considered the biggest structural bottleneck for both external and internal trade in India.
  - o National Logistics Policy 2022 aims to trim the country's logistics costs from as much as 13-14 per cent of its GDP to a single digit over the next few years.
- **Parent Ministry:** The National Logistics Policy formulated by the Commerce and Industry Ministry.

CRAR

The Reserve Bank of India (RBI) has placed Dhanlaxmi Bank under tight monitoring with the Thrissur-based private bank's financial position coming under greater public scrutiny.
- Dhanlaxmi Bank's capital-to-risk-weighted assets ratio (CRAR) dropped to around 13% at the end of March this year from 14.5% a year ago, prompting the RBI to take stock of the financial health of the bank.

What do Basel III norms say about CRAR?

The capital adequacy ratio measures a bank's capital in relation to its risk weighted assets.

- Under Basel III norms, which were adopted by financial regulators across the globe in the aftermath of the financial crisis of 2007 08 that involved major failures in the banking system, banks are supposed to maintain their CRAR at 9% or above.

What is CRAR: What is the prompt corrective action framework (PCA)?

- Prompt Corrective Action (PCA) is a framework under which banks with weak financial metrics are put under watch by the Reserve Bank of India (RBI).
- The RBI introduced the PCA framework in 2002 as a structured early-intervention mechanism for banks that become undercapitalised due to poor asset quality, or vulnerable due to loss of profitability.
- It aims to check the problem of Non-Performing Assets (NPAs) in the Indian banking sector.
- The framework was reviewed in 2017 based on the recommendations of the working group of the Financial Stability and Development Council on Resolution Regimes for Financial Institutions in India and the Financial Sector Legislative Reforms Commission.
- PCA is intended to help alert the regulator as well as investors and depositors if a bank is heading for trouble.
  The idea is to head off problems before they attain crisis proportions.
- Under the PCA, the RBI places restrictions on lending by troubled banks and keeps a close eye on them until their financial position improves sufficiently.

Why is capital adequacy important for a bank?

- Capital adequacy ratio is an indicator of the ability of a bank to survive as a going business entity in case it suffers significant losses on its loan book.
- A bank cannot continue to operate if the total value of its assets drops below the total value of its liabilities as it would wipe out its capital (or net worth) and render the bank insolvent.
- So, banking regulations such as the Basel-III norms try to closely monitor changes in the capital

adequacy of banks in order to prevent major bank failures which could have a severe impact on the wider economy.

• The capital position of a bank should not be confused with cash held by a bank in its vaults to make good on its commitment to depositors.

• The CRAR, which is a ratio that compares the value of a bank's capital (or net worth) against the value of its various assets weighted according to how risky each asset is, is used to gauge the risk of insolvency faced by a bank.

• The riskier a type of asset held in a bank's balance sheet, the higher the weightage given to the value of the asset while calculating the bank's capital adequacy ratio.

• This causes the capital adequacy ratio of the bank to drop, thus signalling a higher risk of insolvency during crises.

• In other words, the CRAR tries to gauge the risk posed to the solvency of the bank by the quality or riskiness of the assets on the bank's balance sheet.

World Economy Report

The International Monetary Fund's latest World Economic Outlook report has slashed India's economic growth forecast to 6.8% for 2022.
• In July 2022 the IMF projected a 7.4%, growth rate for the Indian Economy.

What is World Economic Outlook (WEO)?
• The World Economic Outlook (WEO) is a survey report by the International Monetary Fund, published twice a year.
• The report provides analysis and forecasts of economic developments and policies in member countries of IMF.
• The report encapsulates the state of the global economy and highlights risks and uncertainty that could threaten growth.
• The IMF surveys economists and other experts twice a year to publish the WEO report, in the months of April & October.

IMF's Forecast on Growth
• The IMF has sharply cut the forecast for global growth — from 6.0 per cent in 2021 to 3.2 per cent in 2022 and 2.7 per cent in 2023.
• Barring the global financial crisis of 2008 and the sharp fall immediately after the Covid-19 pandemic in 2020, this is the weakest growth profile for the world since 2001.

IMF's Forecast on Inflation
• Global inflation is now expected to peak at 9.5 per cent in late 2022.
• It is expected to remain elevated for longer than previously imagined and is likely to decrease to 4.1 per cent only by 2024.

What IMF projected for India?
• In its October edition of the World Economic Outlook report, the IMF has said that India's growth forecast has been slashed to 6.8% in 2022.
• This is due to a weaker than expected outturn in the second quarter and more subdued external demand.
• For the next year 2023, India has been projected to grow at 6.1%.

How does the World Economic Outlook report matter for India?
• At first glance, India appears better placed. India's GDP growth rate is better and inflation (7.41 per cent in September 2022) is not as high.
• However, India is barely out of the contraction it suffered in 2020 due to the Covid-19 pandemic.
• The country was home to the most people (5.6 crore, according to World Bank) pushed below abject poverty in 2020.
• India faces the following four major challenges which hamper her growth trajectory –
• Higher crude oil and fertiliser prices will spike domestic inflation;
• Global slowdown will hurt exports, dragging down domestic growth and worsening the trade deficit;
• A strong dollar will put pressure on the rupee's exchange rate, which will likely result in reducing its forex reserves and reducing the capacity to import goods when the going gets tougher;
• Given the low demand among most Indians, the government might be forced to spend more towards providing basic relief in the form of food and fertiliser subsidies.

Social Issues

Poshan Maah 2022

The Ministry of Women and Child Development is celebrating the 5th edition of Rashtriya Poshan Maah 2022.
- Rashtriya Poshan Maah is celebrated annually in the month of September since last five years.

Rashtriya Poshan Maah 2022
- **Background:** Prime Minister's Overarching Scheme for Holistic Nutrition (POSHAN) Abhiyaan aka National Nutrition Mission was launched in 2018.
  - POSHAN Abhiyaan was launched with the aim of providing good nutrition to children under 6 years of age, pregnant women, lactating mothers and adolescent Girls.
  - Since 2018, the month of September is celebrated as the Poshan Maah for generating awareness and promote women and child healthcare.
- **About:** Poshan Maah 2022 is celebrated to develop practices that nurture health, fitness and immunity to disease as well as end the menace of malnutrition in the nation.
- **Mandate:** the objective is to activate Poshan Maah by reaching the ground level with the help of Gram Panchayats.
- **Theme:** Rashtriya Poshan Maah 2022 theme is "Mahila aur Swasthya" (Woman and Health) and "Bacha aur Shiksha" (Child and Education). Poshan Maah 2022

Poshan Maah 2022- Key Activities
- The focus will also be on the importance of rainwater harvesting and women will be educated at Anganwadi centres.
- Information related to traditional food items for healthy mothers and children in tribal areas will be provided.
- 'Amma ki Rasoi', an activity to give importance to traditional nutritious dishes, will also be organised.
- Traditional foods will be promoted by integrating them with local festivals during Poshan Maah.

- Toy manufacturing workshops will also be organized on a national level to promote the use of indigenous and local toys for teaching children in Anganwadi centres.

POSHAN Abhiyaan 2022
- POSHAN Abhiyaan is a programmatic approach in addressing the life cycle issues of malnutrition.
  - Reduction of anemia is one of the important objectives of the POSHAN Abhiyaan in convergence with key Ministries/ Departments, mainly Ministry of Health & Family Welfare (MoH&FW).
  - A range of efforts are underway to improve the integration of nutrition interventions into the existing health platforms through various strategic measures.
- Under POSHAN Abhiyaan, efforts are also being made to-
  - Strengthen processes for community engagement,
  - Empowerment of beneficiaries and
  - Behavioural change towards better nutrition for which the Abhiyaan provides a platform for organizing Community Based Events (CBEs) in Anganwadi Centres.
- Under Community Based Events, messages related to public health for improvement of nutrition and to reduce illness, prevention of anemia, importance of nutritious food, diet diversity etc. are being conducted.
- Many States/UTs have developed indigenous best practices like use of iron utensils for cooking to reduce iron deficiency, integrating Ayurveda products and formulations with supplementary nutrition etc.

Global Hunger Index

Recently, India has ranked 107th out of 121 countries in the Global Hunger Index (GHI) 2022.
- India's performance in Global Hunger Index 2022 went down from the 101st position the previous year's Global Hunger Index 2021.

Key Findings of Global Hunger Index 2022

- Yemen has ranked in the lowest position at 121, while the top of the list is dominated by European nations including Croatia, Estonia and Montenegro.
  - Among Asian nations, China and Kuwait have ranked the highest.
- **India's Performance:** Of the 121 countries on the GHI, India is ranked behind its neighbours Nepal (81), Pakistan (99), Sri Lanka (64), and Bangladesh (84).
  - The GHI, which lists countries by 'severity', has given India a score of 29.1, which falls in the 'serious' category of hunger level.
- **India's Performance Over the Year:** India has been recording decreasing GHI scores over the years. In 2000, it recorded an 'alarming' score of 38.8, which reduced to 28.2 by 2014. The country has started recording higher scores since then.
  - While India has been consistently recording lower values for the four indicators, it started going up in 2014 for undernourishment and the prevalence of wasting in children.
  - The proportion of undernourishment in the population went from 14.8 in 2014 to 16.3 in 2022, and the prevalence of wasting in children under five years jumped from 15.1 in 2014 to 19.3 in 2022.
  - India also witnessed an improvement in the other two indicators.
  - Stunning in children under five has reduced from 38.7 in 2014 to 35.5 in 2022, and under-five mortality reduced from 4.6 in 2014 to 3.3 in 2022.

What is Global Hunger Index?
• **About:** Global Hunger Index has been brought out almost every year since 2000 to map situation of hunger in various countries.
○ Global Hunger Index 2022 is the 15th in the series of report.
• **Publishing Organizations:** Global Hunger Index is Jointly published by Concern Worldwide and Welthungerlife.

• **Mandate:** The reason for mapping hunger is to ensure that the world achieves "Zero Hunger by 2030"- one of the Sustainable Development Goals laid out by the United Nations.
○ It is for this reason that GHI scores are not calculated for certain high-income countries.
• **Parameters Used:** Global Hunger Index tracks the performance of different countries on four key parameters.
○ These parameters capture multiple dimensions- such a deficiency of micronutrients- of hunger, thus providing a far more comprehensive measure of hunger.

How Global Hunger Index 2022 is calculated?

Indicators used: The GHI looks at four main indicators:

- **Undernourishment (which reflects inadequate food availability):** calculated by the share of the population that is undernourished (that is, whose caloric intake is insufficient);
- **Child Wasting (which reflects acute undernutrition):** calculated by the share of children under the age of five who are wasted (that is, those who have low weight for their height);
- **Child Stunting (which reflects chronic undernutrition):** calculated by the share of children under the age of five who are stunted (that is, those who have low height for their age);
- **Child Mortality (which reflects both inadequate nutrition and unhealthy environment):** calculated by the mortality rate of children under the age of five (in part, a reflection of the fatal mix of inadequate nutrition.

Ranking of Countries on Global Hunger Index (GHI)

- **Weightage of Indicators:** Each country's data are standardised on a 100-point scale and a final score is calculated after giving 33.33% weight each to Indicators 1 and 4, and giving 16.66% weight each to Indicators 2 and 3.
- **Categorization:** Countries scoring less than or equal to 9.9 are slotted in the "low" category of hunger, while those scoring between 20 and 34.9 are in the "serious" category and those scoring above 50 are in the "extremely alarming" category.

Environment & Biodiversity

Agni Tattva under LiFE Campaign

Power Foundation of India in association with Vijnana Bharati (VIBHA) is currently running a campaign to create awareness on Agni Tattva under LiFE - Lifestyle for environment.

Agni Tattva under LiFE Campaign

- **About:** The Agni Tattva campaign - Energy for LiFE, an initiative under the umbrella campaign of Sumangalam.
- **Parent Ministry**: Agni Tattva under LiFE Campaign was launched by Shri R K Singh, Union Minister of Power and New & Renewable Energy, in New Delhi September 2022.
- **Objective:** Agni Tattva under LiFE Campaign aims to create awareness of the core concept of Agni Tattva, an element that is synonymous with energy and is amongst the five elements of Panchmahabhoot.
- **Theme:** The first conference of the Agni campaign was organised in Leh, on the theme of 'Sustainability and Culture'.
- **Key Activities:** A series of seminars spanning the length and breadth of the country have been planned as a part of the **Agni Tattva** campaign.
  - This campaign includes conferences, seminars, events, and exhibitions across the country involving educational institutions, communities, and relevant organisations.

What is LiFE Movement?

- **About:** The idea of LiFE promotes an environment-conscious lifestyle that focuses on 'mindful and deliberate utilisation' instead of 'mindless and destructive consumption.
  - The LiFE Movement is a global initiative for ensuring sustainable lifestyle of human beings and protecting the planet.
  - LiFE Movement global initiative was proposed by the Prime Minister of India at COP26, he UN's climate summit in Glasgow.
- **Vision**: The vision of LiFE is to live a lifestyle that is in tune with our planet and does not harm it.

- Those who live such a lifestyle are called "Pro-Planet People".
- **Mission:** Mission LiFE borrows from the past, operates in the present and focuses on the future.
  - LiFE initiative uses the concept of Reduce, Reuse and Recycle that are woven into our life.
  - The Circular Economy has been an integral part of India's culture and lifestyle and LiFE initiative's mission is to harness this.

Blue Flag Certification

Recently, Prime Minister, Shri Narendra Modi has congratulated, particularly the people of Lakshadweep as Minicoy, Thundi Beach and Kadmat Beach make it to coveted list of Blue Beaches.
- This takes the number of beaches certified under the Blue Flag certification to twelve (12).
- He also highlighted India's remarkable coastline and lauded the passion among Indians to further coastal cleanliness.

List of Blue Beaches in India

State/UT	Blue Beaches
Gujrat	Shivrajpur
Karnataka	Kasarkod and Padubidri
Kerala	Kappad
Andhra Pradesh	Rushikonda
Odisha	Golden beach
Tamil Nadu	Kovalam
Andaman and Nicobar	Radhanagar
Puducherry	Eden
Diu	Ghoghla
Lakshadweep	Thundi Beach Kadmat Beach

Key Points about Thundi Beach and Kadmat Beach

- **Thundi Beach:** It is one of the most pristine and picturesque beaches in the Lakshadweep

archipelago where white sand is lined by turquoise blue water of the lagoon.

o It is a paradise for swimmers and tourists alike.

• **Kadmat Beach:** It is especially popular with cruise tourists who visit the island for water sports.

o It is a paradise for nature lovers with its pearl white sand, blue lagoon waters, its moderate climate and friendly locals.

• Both the beaches comply with all the 33 criteria as mandated by the Foundation for Environment Education (FEE).

• Both the beaches have designated staff for beach cleanliness and maintenance; and for safety and security of swimmers.

What is Blue Flag Certification?

• **Background:**

o **1985:** Blue flag program started in France.

o **1987:** It was presented to FEE and became the European Blue Flag.

o **2001:** South Africa became the first country outside of Europe to join the program and this led to its changed name- International Blue Flag.

• **About:** Blue Flag Certification is an internationally recognized eco-label awarded by a non-profit organization called the Foundation for Environment Education (FEE), Denmark.

o The Blue Flag recognition is awarded by a jury comprising members from the IUCN, UNWTO, UNEP, and UNESCO after considering 33 parameters.

• **Parameters used:** The certification is based on 33 parameters which are then divided into 4 major categories. They are-

1. Environmental education and information
2. Bathing water quality
3. Environmental management
4. Conservation and safety services on the beaches

• **Global scenario:** There are more than 4000 blue flag beaches worldwide with Spain leading the number of beaches per country with this certification.

• **Significance:**

o Promote clean and sustainable tourism: blue flag beaches should provide clean and hygienic bathing water, along with basic infrastructure for tourists.

o It also advocates against inequality, disparity, unemployment, depletion of natural resources, health and environmental threats, pollution as well as general environmental degradation.

Stubble Burning

Commission for Air Quality Management in NCR and Adjoining areas has recently held review meetings to address stubble burning.

• Commission for Air Quality Management in NCR and Adjoining areas has issued Statutory Directions for implementation of the State Specific Action Plan.

o This comes in the light of increased incidents of stubble burning in Punjab this year.

About CAQM on Stubble Burning

• As per the satellite remote sensing data, up to 24/10/2022, only about 39% of sown area in Punjab had been harvested and thus rising number of fire events is a matter of concern.

• As per the Standard Protocol developed by ISRO for CAQM, for the period 15th September, 2022 to 26th October, 2022, total paddy residue burning events reported in Punjab are 7,036 compared to 6,463 for the same period during the last year.

• CAQM further stated that about 70 % of farm fires during the current paddy harvesting season were reported only from six districts namely Amritsar, Firozpur, Gurdaspur, Kapurthala, Patiala and Tarn Taran.

o These Districts account for 4,899 cases as against a total of 7,036 incidents in Punjab.

o These traditional six hotspot Districts had also accounted for about 65% of the total burning incidents during the last year for the same period.

Major Pillars of CAQM Comprehensive Action Plan for Punjab

- Diversification to other crops, diversification to low straw generating and early maturing paddy varieties;
- In-situ crop residue management including bio-decomposer application;
- Ex-situ crop residue management;
- IEC activities;
- Monitoring and effective enforcement.

Steps taken in CAQM meeting 2022

Key areas and action points stressed upon during the meetings were:

- Speedy procurement of additional farm machinery through fund allocations made by MoAFW under the Crop Residue Management (CRM) Scheme during 2022-23.
- Mapping of available machinery in Custom Hiring Centres and cooperatives.
- Optimised use of available CRM machinery including staggering harvesting schedule at village/ cluster level.
- Expanding bio-decomposer application to supplement in-situ stubble management measures.
- Facilitating robust supply chain towards ex-situ utilisation.
- Intensifying campaigns and IEC activities against stubble burning.
- Intensifying monitoring and enforcement actions.

Commission for Air Quality Management in NCR and Adjoining Areas- Key Points

- **About:** The Commission for Air Quality Management (CAQM) is a statutory body formed under the Commission for Air Quality Management in National Capital Region and Adjoining Areas, Act 2021.
  - Earlier, the commission was formed through the promulgation of the Commission for Air Quality Management in National Capital Region and Adjoining Areas Ordinance, 2021.
  - The Commission for Air Quality Management in National Capital Region and Adjoining Areas, Act 2021 also dissolved the Environment Pollution Prevention and Control Authority (EPCA) established in the NCR in 1998.

- **Mandate:** To ensure better coordination, research, identification and resolution of problems surrounding the air quality index and for matters connected therewith or incidental thereto.

- **Scope:** Adjoining areas have been defined as areas in the states of Haryana, Punjab, Rajasthan, and Uttar Pradesh adjoining the NCR where any source of pollution may cause an adverse impact on air quality in the NCR.

- **Composition:** The Commission for Air Quality Management in NCR and Adjoining Areas will consist of:

1. A Chairperson,
2. An officer of the rank of a Joint Secretary as the member-secretary and Chief Coordinating Officer,
3. A currently serving or former Joint Secretary from the central government as a full-time member,
4. Three independent technical members with expertise related to air pollution, and
5. Three members from non-government organizations.

- **The Commission will also include ex-officio members:**
  - From the central government and concerned state governments, and
  - Technical members from CPCB, Indian Space Research Organisation, and NITI Aayog.
  - May also appoint representatives of certain ministries.

- **Tenure:** The Chairperson and members of the Commission will have a tenure of three years or till the age of seventy years, whichever is earlier.

- **Selection Committee for appointment:** will be constituted by the central government for recommending appointments of members of the Commission. The Committee will include-
  - **Chairperson-** Minister in charge of the Ministry of Environment, Forest and Climate Change.
  - **Members of the Committee will include-**
- Minister of Commerce and Industry,
- Minister of Road Transport and Highways,
- Minister of Science and Technology, and
- Cabinet Secretary.

o **Sub-Committees:** The Commission for Air Quality Management in NCR and Adjoining Areas is required to form sub-committees on-

▪ Monitoring and identification headed by a Member of the Commission.

▪ Safeguarding and enforcement headed by the Chairperson of the Commission and

▪ Research and development headed by a technical member of the commission.

Desert National Park

As Rajasthan shares the international border with Pakistan's Sindh and Punjab provinces, it is suspected that the GIBs might have flown across to the neighbouring country's desert amid fears that they could become easy prey for the poachers there.

Desert National Park: Introduction
• The Desert National Park (DNP) covers an area of 3162 km² of which 1900 km² is in Jaisalmer district and remaining 1262 km² is in Barmer district of Rajasthan State.
• The area falls in the extreme hot and arid region of very low rainfall zone (<100mm) of the country.
• DNP was gazetted in the year 1980.

Desert National Park: Background

• The GIB was added to the world list of protected species of the 'Convention on the Conservation of Migratory Species of Wild Animals' during its 13th conference in Gandhinagar in 2020.

• Pakistan is a signatory to the Conference of the Parties (COP) to the convention.

About Thar Desert

• The Thar Desert in north-western India is a unique and the only habitat of its type in the Indian subcontinent.

• The Aravalli hills mark the eastern-most boundary limit of the Thar desert while the western limit is defined by the fertile plains of the Indus.

• The Great Rann of Kutch forms a sharp boundary in the south while its northern limits are formed by the riparian sub-Himalayan plains.

Desert National Park: A Unique National Park in India

• DNP is spectacular representative of the desert ecosystem with exceptional beauty with endless expanse of sand, sand dunes, broken rock formations and an interesting array of unique flora and fauna.

• The DNP is the most important site for the long-term survival of the Globally Threatened Great Indian Bustard and other endemic fauna and flora.

• Other birds of significance include the endangered Oriental White-backed vulture Gyps bengalensis and Long-billed Gyps indicus, Stoliczka's Bushchat Saxicola macrorhyncha, Green Munia Amandava formosa MacQueen's or Houbara Bustard Chlamydotis maqueeni.

• Eleven bird species representative of Biome-13 have been identified by BirdLife International. The Thar desert is rich in herpetofauna, being the home of 11% of the 456 reptile species found in India.

• The prominent among them are Toad-headed Agama, Sindh Awl-headed Snake, Indian Spiny-tailed Lizard, Dwarf Gecko, Persian Gecko, Desert Monitor and Saw-scaled Viper.

Presence of fossils from the Jurassic Period

• One of the most interesting features of the Desert National Park is the presence of fossils from the Jurassic Period. The desert is several thousand years old.

• The Wood Fossil Park at Akal has significant fossil evidences dating back to the Jurassic period.

Haven for birds

• The park is a haven for migratory and desert's resident birds. Mostly they are raptors. Avid birders come here to get a good look of the Short-toed eagle, tawny eagle, spotted eagle, laggar falcon and kestrel.

• These are the top birds of prey found in this region.

• It's a great place to see demoiselle cranes and MacQueen's bustard. But none of them are as famous and as important as the Critically endangered great Indian bustard.

Desert National Park: Home to Great Indian Bustard

• The GIB, which is the State bird of Rajasthan, is also considered India's most critically endangered bird and is protected under the Wildlife Protection Act.

• Its population of about 150 in Rajasthan accounts for 95% of its total world population.

• The captive breeding of GIBs was taken up in the DNP through a project executed by the Dehradun-based Wildlife Institute of India in 2019.

JALDOOT App

Recently, Union Minister of State for Rural Development and Steel, Shri Faggan Singh Kulaste launched the "JALDOOT App and JALDOOT App e-brochure" at a function in New Delhi.

About JALDOOT App

• **About:** Jaldoot Application has been developed to be used across the country to capture the water level of selected 2-3 wells in a village.

• **Design and Development:** JALDOOT app has been jointly developed by Ministry of Rural Development and Panchayati Raj.

Implementation

• Manual monitoring of water levels in open wells will be measured twice in a year, from 1st May to 31st May as pre-monsoon water level and from 1st October to 31st October for post-monsoon level for the same well.

• Jaldoots, that is, officers assigned to measure the water levels, should also upload the geo-tagged photographs through the app on every occasion of measurement.

• Jaldoot Mobile app will work in both online and offline mode.
  o So water level can be captured even without internet connectivity and captured date will be stored in mobile and when mobile comes in the connectivity area, data will synchronize with the central server.

• The regular data to be input by the Jaldoots would be integrated with the database of National Water Informatics Centre (NWIC), which can be utilised for analysis and display of various useful reports for the benefit of various stakeholders.

• Water level report, Monsoon Report and Registered user report are available at JALDOOT web portal.

Need for Jaldoot App

• Despite promoting watershed development, afforestation, waterbody development and renovation, rainwater harvesting like initiatives, the ground water level in various parts of the country has depleted.

• Withdrawal of ground water has reached critical levels in many parts of the country and addressing this issue is a priority. Therefore, measurement and observation of the levels of water tables across the country has become necessary.

Importance of JALDOOT App

• With the newly launched app, the State Government/UTs and gram panchayats should involve themselves towards systematically collecting ground water level data and assimilation of the same in the central digital database for analysis.

• Jaldoot app will facilitate in observing water tables across the country and the resulting data can be utilised for Gram Panchayat Development Plan and Mahatma Gandhi NREGA Plans.

Mission LiFE

Recently, the Prime Minister, Shri Narendra Modi attended a bilateral meeting with UN Secretary-General, H.E. Mr Antonio Guterres and subsequently launched Mission LiFE at the Statue of Unity, Ekta Nagar, Kevadia, Gujarat.

• Congratulatory video messages on the launch of Mission LiFE by the heads of 11 nations representing all regions of the United Nations were also relayed.

How was the concept of LiFE Evolved?

- The concept of LiFE was introduced by the Prime Minister at COP26 at Glasgow on 1 November 2021.
- On 5 June 2022, on World Environment Day, India furthered the vision of LiFE by launching the LiFE Global Movement, inviting academicians, researchers and start-ups across the world to think about specific and scientific ways in which the full potential of collective action can be harnessed to address the environment crisis.
  - The LiFE movement received record support from global leaders.

What is the LiFE movement?

- **About:** The idea of LiFE promotes an environment-conscious lifestyle that focuses on 'mindful and deliberate utilisation' instead of 'mindless and destructive consumption.
  - The LiFE Movement is a global initiative for ensuring sustainable lifestyle of human beings and protecting the planet.
  - LiFE Movement global initiative was proposed by the Prime Minister of India at COP26, he UN's climate summit in Glasgow.
- **Vision**: The vision of LiFE is to live a lifestyle that is in tune with our planet and does not harm it.
  - Those who live such a lifestyle are called "Pro-Planet People".
- **Mission:** Mission LiFE borrows from the past, operates in the present and focuses on the future.
  - LiFE initiative uses the concept of Reduce, Reuse and Recycle that are woven into our life.
  - The Circular Economy has been an integral part of India's culture and lifestyle and LiFE initiative's mission is to harness this.

Mission LiFE
- Mission LiFE will action the ideas and ideals of LiFE through a mission-mode, scientific and measurable programme and demonstrate India's commitment to walk the talk on climate change.
- Mission LiFE is designed with the objective to mobilise at least one billion Indians and other

global citizens to take individual and collective action for protecting and preserving the environment in the period 2022 to 2027.
- Within India, at least 80% of all villages and urban local bodies are aimed to become environment-friendly by 2028.

Three-Pronged Strategy of Mission LiFE

Mission LiFE aims at following a three-pronged strategy for changing our collective approach towards sustainability.

- First is by nudging individuals to practise simple yet effective environment-friendly actions in their daily lives (demand);
- Second is by enabling industries and markets to respond swiftly to the changing demand (supply) and;
- Third is to influence government and industrial policy to support both sustainable consumption and production (policy).

PUC Certificate

Motorists will not be able to buy fuel in Delhi without a valid Pollution Under Control (PUC) certificate from October 25.

About PUC Certificate
- The PUC certificate is a document that any person driving a motor vehicle can be asked to produce by a police officer in uniform authorized by the state government.
- These issue certificates if a vehicle is found complying with the prescribed emission norms.
- Since the Motor Vehicles (Amendment) Act, 2019 came into force, PUC certificate has been made mandatory.
- A PUC certificate contains information such as the vehicle's license plate number, PUC test reading, date on which the PUC test was conducted and the expiry date.

PUC Certificate: Compliance Rules

- According to Central Motor Vehicles Rules, 1989, every motor vehicle is required to carry a valid PUC Certificate after the expiry of period of one year from the date of its first registration.
- This includes those conforming to BS-I/ BS-II/ BS-III/BS-IV /BS-VI as well as vehicles plying on CNG/LPG.
- However, the validity of four-wheeled BS-IV compliant vehicles is one year and for other vehicles it is three months.

How is a pollution control check carried out?

- The computerized model for pollution check was developed by the Society of Indian Automobile manufacturers.
- A gas analyzer is connected to a computer, to which a camera and a printer are attached.
- The gas analyzer records the emission value and sends it to the computer directly, while the camera captures the license plate of the vehicle.
- Subsequently, a certificate may be issued if the emission values are within the limits.

PUC Certificate: Need

- Emissions from automobiles are major contributors to air pollution all over the world.
- The smoke emitted from vehicles contains the following pollutants:

1. Hydrocarbons (HC)
2. Carbon Monoxide (CO)
3. Oxides of Nitrogen (NO_x)
4. Particulate Matter (PM)
5. Sulphur Dioxide (SO_2)
6. Carbon Dioxide (CO_2)
7. Nitrous Oxide (N_2O)

Sustainable Mountain Development Summit (SMDS)

Union Minister for Environment, Forest and Climate Change attended the inaugural session of Sustainable Mountain Development Summit-XI, (SMDS-XI) being held at Leh, Ladakh UT from 10-12 October, 2022.

Sustainable Mountain Development Summit (SMDS)

- **About:** The Sustainable Mountain Development Summit (SMDS) is a flagship annual event of Integrated Mountain Initiative (IMI), a civil society-led forum working across the Indian Himalayan Region (IHR).
  - Indian Himalayan Region (IHR) comprises 10 mountain states, two union territories and four hill districts.
  - Every year 3-5 salient themes engaging the immediate attention of and relevant to the mountains and hills are taken up for threadbare discussion and debate.
  - Conclusions and recommendations emerging from this exercise are pursued by IMI subsequently for actionable output.
- **Components:** In addition to the central event, two integral components of the Sustainable Mountain Development Summit (SMDS) include-
  - The Mountain Legislators' Meet (MLM) and
  - The Indian Himalayan Youth Summit.
- **Theme:** The theme for SMDS-XI is **'Harnessing tourism for sustainable mountain development'**.
- **Focus Area:** The main focus of the SMDS 2022 summit is to reduce the negative impacts of tourism while harnessing its positive contributions to building climate and socio-ecological resilience and sustainability.
- **Participation:** Each summit had 200-300 participants, representing a diverse mix of policymakers, eminent scientists, researchers, academics, research and educational institutions, government representatives, legislators, etc.

Previous Sustainable Mountain Development Summits

SMDS	Thematic Focus
SMDS-I (2011), Nainital	Hydropower, Adaptation measures under Climate Change, Rural Tourism, Community forestry
SMDS-II (2012), Gangtok	Water, Forests & Communities, Mountain Livelihoods
SMDS-III (2013), Kohima	Forests, Water: Rivers, streams & springs, Mountain agriculture

SMDS-IV (2015), Itanagar	Disaster Risk Reduction, Mountain Agriculture, Forests
SMDS-V (2016), Leh	Water Security, Skills for development in the mountains
SMDS-VI (2017), Aizawl	Climate Change & Sustainable Mountain Cities
SMDS-VII (2018), Solan	Well-being of Next Generation of Farmers in the Indian Himalayan Region
SMDS-VIII (2019), Shillong	Livelihood & Entrepreneurship for Youth

International Solar Alliance (ISA)

The 5th Assembly of International Solar Alliance (ISA) held in New Delhi under India's Presidentship.

About 5th Assembly of International Solar Alliance (ISA)
• The Assembly is the apex decision-making body of the International Solar Alliance makes decisions concerning the implementation of the ISA's Framework Agreement.
• The Assembly meets annually at the ministerial level at the ISA's seat.

Paris Declaration on the International Solar Alliance

- The launch of the International Solar Alliance (ISA) was announced by Shri Narendra Modi, the Hon'ble Prime Minister of India and Shri Francois Hollande, former Hon'ble President of France on 30th November 2015, at the 21st session of United Nations Climate Change Conference of the Parties (COP-21) in Paris, France.
- Former UN Secretary-General Ban Ki-moon attended the launch, alongside the Heads of about 120 nations who affirmed their participation in the Alliance to dedicate efforts for promotion of solar energy.

Focus area of this year's Meeting of Assembly of International Solar Alliance (ISA)

- The key focus area of the 5th Assembly of International Solar Alliance (ISA) is streamlining the solar sector investments in countries where investments are not flowing at present.
- The assembly will also deliberate on creating a Risk Mitigation Facility for solar projects with a Payment Guarantee Mechanism.
- Participants from 109 countries will be sharing their experiences towards a low-carbon economy through the promotion of solar energy at the 4-day event.

One Sun One World One Grid initiative

- The One Sun One World One Grid Declaration (OSOWOG) was jointly released by Prime Minister Narendra Modi and UK Prime Minister Boris Johnson at the COP26 Climate Meet in Glasgow.
- While the sun is the source of all energy and solar energy is totally clean and sustainable, it is available only during the day time and is dependent on the weather. OSOWOG is the solution to this challenge.
- Its objective is to aid in developing a worldwide grid through which clean energy can be transmitted anywhere, anytime (use power at night in one part of the world from solar energy generated on other side of the world where it is day time).
- It also aims to help in reducing storage needs and enhancing the viability of solar projects. Its ultimate goal is to reduce carbon footprints and energy costs.

Solar mini-grids
• A mini-grid is a set of small-scale electricity generators interconnected to a distribution network that supplies electricity to a small, localized group of customers.
• It usually operates independently from the national transmission grid.
• Renewable energy mini-grids, powered by solar, wind or hydro, are emerging as the superstars of energy access, particularly in rural areas, where

they have become a viable option for providing reliable and high-quality electricity to rural populations and businesses.

What is ISA?

- The International Solar Alliance (ISA) is an action-oriented, member-driven, collaborative platform for increased deployment of solar energy technologies as a means for bringing energy access, ensuring energy security, and driving energy transition in its member countries.
- The ISA strives to develop and deploy cost-effective and transformational energy solutions powered by the sun to help member countries develop low-carbon growth trajectories, with particular focus on delivering impact in countries categorized as Least Developed Countries (LDCs) and the Small Island Developing States (SIDS).
- The ISA is guided by its 'Towards 1000' strategy which aims to mobilise USD 1,000 billion of investments in solar energy solutions by 2030, while delivering energy access to 1,000 million people using clean energy solutions and resulting in installation of 1,000 GW of solar energy capacity.
- This would help mitigate global solar emissions to the tune of 1,000 million tonnes of CO_2 every year.

How ISA was conceived?

- The ISA was conceived as a joint effort by India and France to mobilize efforts against climate change through deployment of solar energy solutions.
- It was conceptualized on the sidelines of the 21st Conference of Parties (COP21) to the United Nations Framework Convention on Climate Change (UNFCCC) held in Paris in 2015.
- With the amendment of its Framework Agreement in 2020, all member states of the United Nations are now eligible to join the ISA.
- At present, 110 countries are signatories to the ISA Framework Agreement, of which 90 countries have submitted the necessary instruments of ratification to become full members of the ISA.

Science and Technology

African Swine Flu

Kerala confirms African Swine Flu at pig farm in Kottayam district.

- The virus infection was confirmed after samples taken from the farm were tested at the National Institute of High-Security Animal Diseases in Bhopal.
- A one-kilometer stretch around the farm has been declared infected where 48 pigs have been culled as a preventive measure. A ten-kilometer radius around the farm is being closely monitored.

African Swine Flu: Background

- Since emerging from East Africa in the early 1900s, African Swine Fever has moved through sub-Saharan Africa and has been reported in 32 countries since 2005.
- 2022 has seen the disease detected worldwide including in India.
- The disease has reached multiple countries across Asia, the Caribbean, Europe, and the Pacific, affecting both domestic and wild pigs.

About African Swine Flu

- ASF is a severe viral disease that affects wild and domestic pigs typically resulting in an acute haemorrhagic fever.
- The disease has a case fatality rate (CFR) of about 100 percent.
- Its routes of transmission include direct contact with an infected or wild pig (alive or dead), indirect contact through ingestion of contaminated material such as food waste, feed or garbage or through biological vectors such as ticks.
- The disease is characterised by the sudden deaths of pigs.
- Other manifestations of the disease include high fever, depression, anorexia, loss of appetite, haemorrhages in the skin, vomiting and diarrhoea among others.
- It is important that determination of ASF is made through laboratory testing and it is differentiated from Classical Swine Fever (CSF), whose signs may be similar to ASF, but is caused by a different virus for which a vaccine exists.
- Even so, while ASF is lethal, it is less infectious than other animal diseases such as foot-and-mouth disease.
- But as of now, there is no approved vaccine, which is also a reason why animals are culled to prevent the spread of infection.

African Swine Flu: Is it threatful for Humans?

- African Swine Flu is not a zoonotic disease. It will not spread from pigs to other animals or human beings.
- Even though the disease is highly contagious it is not a threat to humans as it can not be transmitted from animals to humans.
- The disease can only spread from one pig to another.

African swine flu: A threat to food security and biodiversity

- Pigs are a primary source of household income in many countries.
- The spread of ASF across the world has devastated family-run pig farms, often the mainstay of people's livelihoods and a driver of upward mobility.
- It has also reduced opportunities to access healthcare and education.
- Moreover, pork meat is one of the primary sources of animal proteins, accounting for more than 35% of the global meat intake.
- Hence, this disease poses a serious problem for food security worldwide.
- This disease is also a concern for biodiversity and the balance of ecosystems, as it affects not only domestic farmed pigs, but also wild boars, including native breeds.

African Swine Flu: Measures to Control ASF spread

- During outbreaks and in affected countries, controlling the spread of African swine fever can be difficult and must be adapted to the specific epidemiological situation.
- General sanitary measures that may be implemented include:
  o Early detection and humane killing of animals (with proper disposal of carcasses and waste),
  o Thorough cleansing and disinfection,
  o Zoning/compartmentalisation and movement controls,
  o Surveillance and detailed epidemiological investigation, and
  o strict biosecurity measures on farms.

Scientists from ISRO have mapped out the global distribution of sodium on the Moon's surface using the CLASS instrument (Chandrayaan-2 large area soft X-ray spectrometer) onboard of the Chandrayaan-2 mission.
- This is the first effort to provide a global-scale measurement of sodium on the lunar surface using X-ray fluorescent spectra.

About Chandrayaan-2

- Chandrayaan-2 consisted of an Orbiter, Lander and Rover, all equipped with scientific instruments to study the moon.
- The Orbiter would watch the moon from a 100-km orbit, while the Lander and Rover modules were to be separated to make a soft landing on the moon's surface.
- ISRO had named the Lander module as Vikram, after Vikram Sarabhai, the pioneer of India's space programme, and the Rover module as Pragyaan, meaning wisdom.
- The Orbiter part of the mission has been functioning normally. It is carrying eight instruments.

- Each of these instruments has produced a handsome amount of data that sheds new light on the moon and offers insights that could be used in further exploration.

X Ray Fluorescence
It is commonly used to study the composition of materials in a non destructive manner.
When the sun gives out solar flares, a large amount of X ray radiation falls on the moon, triggering X ray fluorescence.
The CLASS measures the energy of the X ray photons coming from the moon and counts the total number.
The energy of the photons indicates the atom (for instance, sodium atoms emit X ray photons of 1.04 keV) and the intensity is a measure of how many atoms are present.

Presence of Sodium on Moon: Significance

- Sodium can be used as a tracer of the volatile history of the moon.
- When compared to Earth, the moon is significantly depleted of volatile elements such as sodium.
- The amount of volatiles on the moon today can be used to test formation scenarios of the Earth-Moon system.

Critical Minerals

Concerns over the pricing and availability of oil and gas in the wake of the Ukraine crisis continue to fuel global policy debates on energy security.
- Securing access to key critical minerals such as lithium, cobalt, nickel and rare earth metals is critical for building resilient and indigenous supply chains for clean energy technologies.

About Critical Minerals

- Critical minerals are elements that are the building blocks of essential modern-day technologies, and are at risk of supply chain disruptions.

- These minerals are now used everywhere from making mobile phones, computers to batteries, electric vehicles and green technologies like solar panels and wind turbines.
- Based on their individual needs and strategic considerations, different countries create their own lists though such lists mostly include graphite, lithium, cobalt and silicon which is a key mineral for making computer chips, solar panels and batteries.

Critical Condition

- As countries around the world scale up their transition towards clean energy and digital economy, these critical resources are key to the ecosystem that fuels this change.
- Any supply shock can severely imperil the economy and strategic autonomy of a country over-dependent on others to procure critical minerals but these supply risks exist due to rare availability, growing demand and complex processing value chain.
- Many times, the complex supply chain can be disrupted by hostile regimes, or due to politically unstable regions.
- They are critical as the world is fast shifting from a fossil fuel-intensive to a mineral-intensive energy system.

About Rare Earth Metals
• The rare earth elements (REE) are a set of seventeen metallic elements which includes the fifteen lanthanides on the periodic table plus Scandium and Yttrium.
• Rare earth elements are an essential part of many high-tech devices.
• They have a wide range of applications, especially high-tech consumer products, such as cellular telephones, computer hard drives, electric and hybrid vehicles, and flat-screen monitors and televisions.
• Significant defence applications include electronic displays, guidance systems, lasers, and radar and sonar systems.
• Rare earth minerals, with names like neodymium, praseodymium, and dysprosium,

are crucial to the manufacture of magnets used in industries of the future, such as wind turbines and electric cars.

Challenges in accessing

- Reserves are often concentrated in regions that are geopolitically sensitive or fare poorly from an ease of doing business perspective.
- A portion of existing production is controlled by geostrategic competitors. For example, China wields considerable influence in cobalt mining in the Democratic Republic of Congo through direct equity investments and its Belt and Road Initiative.
- Future mine production is often tied up in off take agreements, in advance, by buyers from other countries to cater to upcoming demand.

Khanij Bidesh India Limited (KABIL)
• For sourcing of strategic minerals, the Indian government established Khanij Bidesh India Limited (KABIL) in 2019 with the mandate to secure mineral supply for the domestic market.
• A joint venture company namely Khanij Bidesh India Ltd. (KABIL) set up with the participation of three Central Public Sector Enterprises namely, National Aluminium Company Ltd. (NALCO), Hindustan Copper Ltd. (HCL) and Mineral Exploration Company Ltd. (MECL).
• The objective of constituting KABIL is to ensure a consistent supply of critical and strategic minerals to Indian domestic market. While KABIL would ensure mineral security of the Nation, it would also help in realizing the overall objective of import substitution.

Suggestions based on Council on Energy Environment and Water (CEEW) to achieve the objective of KABIL

- Figure out the mineral requirements of the domestic industry.
- Five-year road maps with clear targets for deployment and indigenous manufacturing across clean energy applications would provide visibility to domestic investors.

- Coordinate with the domestic industry to determine where strategic interventions by the government would be necessary for the purpose.
- KABIL could collaborate with industry to bolster its market intelligence capabilities for tracking global supply side developments.
- If conducive investment opportunities don't exist KABIL should pre-emptively sign agreements with global mineral suppliers to secure future production. It could aggregate reliable supply of minerals for domestic requirements and sign back to back sales agreements with the domestic industry. Such large scale centralised national procurement could be done at preferential terms.
- The government should jointly invest in mining assets with geostrategic partners.
- KABIL should make equity investments in mining jurisdictions that private sector investors may deem too risky.
- Technologies such as sodium ion batteries could reduce requirements for sourcing minerals from beyond India's borders.
- Develop policies on urban mining aimed at recycling mineral inputs from deployments that have completed their useful life. This could help in reducing the dependence on international sourcing.

Conclusion

Besides Ukraine, other potential geopolitical flash points also exist against a backdrop of dwindling multilateral cooperation. India must act immediately and decisively to mitigate these risks to its energy security.

India's Dark Sky Reserve

The union territory of Ladakh will host India's first Dark Sky Reserve which will be set up in Hanle area in the next three months.
The Dark Sky Reserve is being built as part of Ladakh's high-altitude Changthang Wildlife Sanctuary.

About Dark Sky Reserve (DSR)

- Definition of Dark Sky Reserve: The International Dark Sky Association (IDSA) defines an international dark sky reserve (IDSR) as "a public or private land of substantial size (at least 700 km^2, or about 173,000 acres) possessing an exceptional or distinguished quality of starry nights and nocturnal environment, and that is specifically protected for its scientific, natural, educational, cultural heritage, and/or public enjoyment.

- A dark sky reserve requires a "core" area that has clear sky without any light pollution, which can enable telescopes to see the sky in its natural darkness.

India's Dark Sky Reserve: Ideal Location

- Ladakh is ideal for long-term observatories and dark-sky sites because of its large arid area, high elevation, and sparse population, extreme cold and minimum temperature drops to minus 40 Degree Celsius.
- The Changthang wildlife Sanctuary, the DSR site is situated around 4,500 metres
- The Department of Science and Technology and Indian Institute of Astrophysics (IIA) in Bengaluru are providing support for the facility. The IIA already manages the Indian Astronomical Observatory (IAO) complex in Hanle, Ladakh.

India's Dark Sky Reserve: International Standards

- International Dark Sky Association's Recognition: The IDSA recognizes and accredits dark-sky areas worldwide, in three categories. The Mont Mégantic Observatory in Quebec is the first such site to be recognized (in 2007) as an International Dark Sky Reserve.
- Individuals or groups can nominate a site for certification to the International Dark Sky Association (IDSA). There are five designated categories, namely International Dark Sky parks, communities, reserves, sanctuaries and Urban Night Sky Places.
- The certification process is similar to that of a site being awarded the UNESCO World Heritage Site tag or getting recognised as a Biosphere Reserve. Between 2001 and January 2022, there have been 195 sites recognised as International Dark Sky Places globally, the IDSA said.

- IDSA recognized Natural Bridges National Monument in Utah as the world's first International Dark Sky Park.
- In 2015, the IDSA introduced the term "Dark Sky Sanctuary" and designated the Elqui Valley of northern Chile as the world's first International Dark Sky Sanctuary. The Gabriela Mistral Dark Sky Sanctuary is named after a Chilean poet.

India's Dark Sky Reserve: India's Objective

- The primary objective of the proposed Dark Sky Reserve is to promote astronomy tourism in a sustainable and environment-friendly manner. Scientific methods will be used here to preserve the night sky from ever-increasing light pollution.
- With metros, cities and peripheral areas experiencing light pollution and remaining constantly lit up, there are diminishing areas that offer a view of clear skies on cloudless nights.
- In the pilot phase, the Indian Institute of Astrophysics (IIA), has procured ten small and easy-to-handle telescopes and light-reflecting shields. IIA's scientists and outreach experts will identify locals and train them to use these telescopes.
- This will include basic sky gazing, identification of constellations, and locating the pole star, among others. These telescopes will be installed at the homestays, which is a popular option for tourist accommodation in Ladakh.

Conclusion

The Dark Sky Reserve is likely to boost Astro tourism in India where there has been no such reserve. Once set up, the reserve will be the highest-located site in the country for infrared, gamma-ray, and optical telescopes.

MeFSAT Database

An analytical study of medicinal fungi using MeFSAT carried out by researchers from Chennai shows that some chemicals they secrete may find use as novel drugs.
- Chennai-based researchers analysed the structure of 1,830 secondary metabolites of medicinal fungi.

- Secondary metabolites are chemical compounds that fungi produce when they are stressed.
- They enhance the fungus' ability to survive.

About MeFSAT

- MeFSAT (Medicinal Fungi Secondary Metabolites and Therapeutics) is a database that compiles information on 184 medicinal fungi, including mushrooms.
- It is a manually curated database that compiles information on secondary metabolites and reported therapeutic uses of medicinal fungi from published research articles and specialized books on the subject.

About Medicinal Fungi
• Medicinal fungi belong to two taxonomic divisions namely, basidiomycota and ascomycota.
• Mushrooms belong to the basidiomycota division. An example is Agaricus bisporus, the button mushroom, which can be consumed.
• Fungi belonging to the ascomycota division are generally not mushrooms.

Examples of fungi-based medicines

- Cordycepin, a secondary metabolite produced by Cordyceps species of fungus, is known to have anti-tumor properties.
- Not only cordycepin, in general, but several secondary metabolites are also known to be beneficial for humans in terms of both therapy and health.

Orionids Meteor Shower

This year, the peak of the Orionids meteor shower will be between the night of October 20 and the morning of October 21, according to EarthSky.
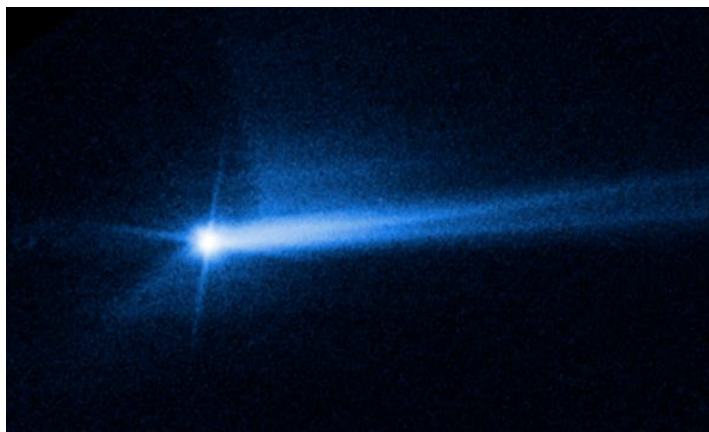- The Orionids meteor shower is caused by Halley's comet and happens in October every year.

About Orionids Meteor Shower
• For a few days centred on Oct. 21 each year, the Earth sweeps through a swarm of meteoroids known as the Orionids; widely scattered bits and pieces shed by the most famous of all comets, Halley's Comet.
• During its peak, we can expect to see up to 20 meteors per hour.
• Unfortunately, the peak happens when the Moon will be about 20 per cent full, but that will not completely interfere with the viewing.

What is special about Orionids?

- The Orionids are generally considered to be the third most reliable meteor display after the December Geminids and the August Perseids.
- Ancient Chinese chronicles suggest that the Orionids may have been first recorded in 288 AD.
- The Orionids, which peak during mid-October each year, are considered to be one of the most beautiful showers of the year. Orionid meteors are known for their brightness and for their speed.
- These meteors are fast – they travel at about 148,000 mph (66 km/s) into Earth's atmosphere. Fast meteors can leave glowing "trains" (incandescent bits of debris in the wake of the meteor) which last for several seconds to minutes.
- Fast meteors can also sometimes become fireballs: Look for prolonged explosions of light when viewing the Orionid meteor shower.
- The Orionids are also framed by some of the brightest stars in the night sky, which lend a spectacular backdrop for these showy meteors.

What are Meteors?

Where do Meteors come from?

- Meteors come from leftover comet particles and bits from broken asteroids.
- When comets come around the sun, the dust they emit gradually spreads into a dusty trail around their orbits.
- Every year the Earth passes through these debris trails, which allows the bits to collide with our atmosphere where they disintegrate to create fiery and colorful streaks in the sky.

Orionids Meteor Shower: The Comet Halley

- The pieces of space debris that interact with our atmosphere to create the Orionids originate from comet 1P/Halley.
- Each time that Halley returns to the inner solar system its nucleus sheds ice and rocky dust into space.
- The dust grains eventually become the Orionids in October and the Eta Aquarids in May if they collide with Earth's atmosphere.
- Comet Halley takes about 76 years to orbit the Sun once.
- The last time comet Halley was seen by casual observers was in 1986. Comet Halley will not enter the inner solar system again until 2061.
- The comet is named for Edmond Halley, who discovered in 1705 that three previous comets seemed to return every 76 years or so and suggested that these sightings were infact all the same comet. The comet returned as he predicted, and it was named in Halley's honor.

Meteors appear as streaks of light that are popularly referred to as "shooting stars" or "falling stars," though they are not really starring at all.
- In reality they are grains of dust, which have been gliding for countless thousands of years in the spaces between the planets.
- When one of them happens to impact the Earth's atmosphere, the flaming flash that is ultimately created is not what you might think, for the meteoroid itself is not what lights up at all; it is the incandescence of the air ahead of it that could not get out of the way fast enough!

- Comet Halley's dimensions are 16 x 8 x 8 km. It is one of the darkest, or least reflective, objects in the solar system, with an albedo of 0.03.

Origin of the Orionids meteor shower
- According to Time and Date, the Orionids meteor shower happens when the Earth passes through the debris left behind by Halley's Comet and this debris burns on entry into the planet's atmosphere.
- It is the second meteor shower caused by the comet, with the first one being the Eta Aquarids shower in May.
- Since the comet takes about 76 years to revolve around the Sun once, it will be next seen in 2061.

Halley: Phenomena behind the appearance of Meteor
- Entering the atmosphere at speeds as high as 45 miles (72 km) per second, atmospheric friction releases the kinetic energy of the object in a short-lived streak of light that we momentarily see about 60 miles (100 km) above the ground.
- The energy released per gram of the meteoroid's weight far exceeds the energy efficiency of the most powerful man-made explosives.
- Thus, a pea-sized object can blaze across the sky with a brilliance rivalling Jupiter or Venus.
- Some meteors leave bright trails that remain in the sky for a few seconds or more, but most appear as just faint streaks.

PM Launches 5G Services

Recently, the Prime Minister, Shri Narendra Modi launched 5G services in Pragati Maidan, New Delhi, ushering in a new technological era.
- He also inaugurated the sixth edition of the India Mobile Congress and also witnessed the IMC Exhibition that was put on the occasion.

5G Services- Demonstration by Major Telecom Operators
The three major telecom operators of the country demonstrated one use case each in front of the Prime Minister to show the potential of 5G technology in India.

- **Reliance Jio:** It connected a teacher from a school in Mumbai, with students in three different locations in Maharashtra, Gujarat and Odisha.
  o This demonstrated how 5G will facilitate education by bringing teachers closer to students, obliviating the physical distance between them.
  o It also demonstrated the power of Augmented Reality (AR) on screen and how that is being used to teach children across the country, remotely, without the need for an AR device.
- **Vodafone Idea:** Its test case demonstrated the safety of workers in an under-construction tunnel of Delhi Metro through the creation of a Digital Twin of the tunnel on the dias.
  o Digital Twin will help give safety alerts to workers in real time from a remote location.
- **Airtel demo:** students from Dankaur, Uttar Pradesh witnessed a lively and immersive education experience to learn about the solar system with the help of Virtual reality and Augmented reality.

5G Services- Four Pillars of Digital India
Digital India focuses on 4 Pillars, in four directions at once. The four pillars are as follows-
- **Price of the Device:** The low cost of devices can only be achieved through Aatmnirbharta. The mobile manufacturing units have now gone up to 200.
  o From exporting zero mobile phones in 2014, today India has become a mobile phone exporting country worth thousands of crores.
  o All these efforts have had an impact on the cost of the device. The government is further working on ensuring more features at a lower cost.
- **Digital Connectivity:** From less than 100 panchayats in 2014 now 1.7 lakh panchayats are connected by optical fiber.
  o Government is working on the goal of Internet for all.
- **Cost of Data:** the industry was given a slew of incentives and technologies like 4G received

policy support. This brought down the price of data and a data revolution was ushered in the country.

- **Idea of 'Digital First':** India went ahead and made the way for digital payments easier. The government itself promoted citizen-centric delivery service through the app.

Importance of 5G Services

- 5G technology will offer a wide range of benefits to the common people. It will help in providing seamless coverage, high data rate, low latency, and highly reliable communications.
- Also, it will increase energy efficiency, spectrum efficiency and network efficiency.
- 5G technology will help in connecting billions of Internet of Things devices, will allow higher quality video services with mobility at high speed, and delivery of critical services such as tele surgery and autonomous cars among others.
- 5G will help in real-time monitoring of disasters, precision agriculture, and minimising the role of humans in dangerous industrial operations such as in deep mines, offshore activities etc.
- Unlike existing mobile communication networks, 5G networks will allow tailoring of requirements for each of these different use cases within the same network.

What is 5G technology?
• 5G or fifth generation is the **latest upgrade** in the long-term evolution (LTE) mobile broadband networks. It works in 3 bands, namely **low, mid and high frequency** spectrum — all of which have their own uses as well as limitations.
• The maximum speed in the **low band spectrum** is 100mbps. So, while it can be used and installed for cell phone users who may not have specific demands for very high-speed internet, the low band spectrum may **not be optimal for specialised** needs of the industry.
• The **mid-band spectrum** offers higher speeds compared to the low band. It, however, has **limitations in terms of coverage** area and penetration of signals.

- The **high-band spectrum** offers the **highest speed** of all the three bands, but has **extremely limited coverage** and signal penetration strength.

The race for providing satellite broadband connectivity in India is heating up as companies like Jio, Oneweb, Hughes and Tata-backed Nelco are preparing to provide these services.

- Earlier last month, Hughes Communications India (HCI), a satellite internet service provider launched India's first high throughput satellite (HTS) broadband service powered by ISRO satellites.
- It used Ku-band capacity from ISRO GSAT-11 and GSAT-29 satellites with Hughes JUPITER Platform ground technology to deliver high-speed broadband.

About Satellite Broadband Service
• Broadband essentially means a wide bandwidth, high-capacity data transmission technique, using a broad range of frequencies.
• In the case of a satellite broadband service, broadband services are delivered directly via satellites instead of optical fibre or mobile networks.

How is it different from existing broadband services?

- The main difference is that aggregation of all the data generated and transmitted by users accessing the internet happens in the sky or space that is in the satellite.
- In contrast to this, if we take a look at cellular networks, aggregation happens on the ground, in the base stations through optical fibre, cable, etc.
- Another key difference is that to access satellite services, we will need a dish antenna just like we

do in the case of TV services, so a normal mobile handset cannot directly access satellite broadband.

- For a user to access satellite broadband a clear line of sight to the satellite is needed.

Satellite Broadband Services in India: Advantages

- The main advantage of satellite services is that you can provide high-speed internet services in remote areas, where terrestrial networks cannot be set u.
- In a country with a wide range of geographies such as India, 20-25 per cent of the Indian population resides in areas where it is extremely hard for terrestrial operators to install internet facilities.

Satellite Broadband Services in India: Scope in India

- Currently, VSAT operators offer satellite broadband services at a very limited capacity in India in a few remote locations.
- The utilisation of satellite services for broadband services is restricted to minimal applications — such as disaster management, defence, scientific locations, etc.

How India (undoubtedly, the ISRO) has geared up for adapting to this?

- ISRO's high throughput GEO (Geostationary Equatorial Orbit) satellites – GSAT-11 and GSAT-29 a few years ago, can beam high-speed internet up to 300 gigabytes per second.
- Apart, many global players look to provide satellite broadband services in India by deploying low earth orbit (LEO) satellites.
- They are launching a constellation of satellites very close to the earth's surface in order to reduce the latency of satellite broadband.
- Presently, Elon Musk's Starlink, Sunil Bharti Mittal-backed OneWeb and the Canadian satellite major Telesat are eyeing the Indian market.

When will these services be available in India?

- If things go as planned and the players get the necessary regulatory clearance, these services could become operational in India as soon as next year.

- OneWeb wants to provide backhaul services to telcos by mid-next year, while Starlink wants to provide direct broadband services by December 2022, aiming at 2 lakh terminals.
- Telesat, on the other hand, is eyeing n India launch by 2024.

Cost of Satellite Broadband Services in India

- The provision of direct broadband services through satellites will be pricey.
- According to a user guide for India, provided by Starlink, the first-year cost of a Starlink terminal will be ₹1,58,000 after which it will cost around ₹1,15,000 every year.

Satellite Broadband Services in India: Major hurdles

- **Latency**: Additionally, satellite Internet latency can be a significant problem. This can be a matter of only a second or two, but a delay on that scale can seriously affect real-time applications like video chats.
- **Spatial hurdles**: Users might not be able to connect to a satellite at all if they are located under heavy foliage or surrounded by other obstructions.
- **Limited bandwidth**: Satellite data transfer provides very slow Internet speeds and limited satellite bandwidth because of the distances the signals have to travel and all the potential obstacles in between.
- **Connection times**: This can also be impacted by your surroundings, the length of your message, and the status and availability of the satellite network.
- **High input cost**: This along with the complex equipment like satellite dishes being used to avail these services makes the service expensive.

Way forward

- An urgent re-look at deregulation and privatization is required.
- Advanced space-faring nations have privatized most of these blocks in the value chain.
- There is a need for building systems to help nurture the industry and create an extensive ecosystem to generate a 'Space 2.0' in India.

Tele-MANAS Initiative

Recently, Tele-MANAS initiative of Union Ministry of Health & Family Welfare was launched virtually by Sh. Thawar Chand Gehlot, Hon'ble Governor of Karnataka at National Institute of Mental Health and Neurosciences (NIMHANS), Bengaluru. ele-MANAS Initiative is

About Tele-MANAS Initiative

- **About:** Tele-MANAS aims to provide free tele-mental health services all over the country round the clock, particularly catering to people in remote or under-served areas.
  - **Tele-MANAS Full form:** Full form of Tele-MANAS is Tele Mental Health Assistance and Networking Across States.
- **Nodal Agency:** The programme includes a network of 23 tele-mental health centres of excellence, with NIMHANS being the nodal centre and International Institute of Information Technology-Bangalore (IIITB) providing technology support.
  - Indian Institute of Technology (IIT) Bengaluru and National Health Systems Resource Centre (NHRSC) will provide the technical support.
- **Service Centre:** A toll-free, 24/7 helpline number (14416) has been set up across the country allowing callers to select the language of choice for availing services.
  - Service is also accessible with 1-800-91-4416. The calls would be routed to Tele-MANAS cells in the respective state and union territory.

Tele-MANAS Initiative Implementation

- Tele-MANAS will be organised in two tier system;
- Tier 1 comprises of state Tele-MANAS cells which include trained counsellors and mental health specialists.
- Tier 2 will comprise of specialists at District Mental Health Programme (DMHP)/Medical College resources for physical consultation and/or e-Sanjeevani for audio visual consultation.
- Presently there are 5 regional coordination centres along with 51 State/UT Tele MANAS cells.
- Specialised care is being envisioned through the programme by linking Tele-MANAS with other

services like National tele-consultation service, e-Sanjeevani, Ayushman Bharat Digital Mission, mental health professionals, Ayushman Bharat health and wellness centres and emergency psychiatric facilities.

- Eventually, this will include the entire spectrum of mental wellness and illness, and integrate all systems that provide mental health care. NIMHANS has conducted training for 900 Tele MANAS counsellors from majority of States/UTs.

GSLV MK-III

The Indian Space Research Organisation (ISRO) is in the final phase of preparation to launch 36 satellites as part of a broadband constellation by OneWeb into space.

- This launch will be the first-ever commercial flight of the GSLV Mk3 rocket
- The 36 satellites will be launched into space on a Geosynchronous Satellite Launch Vehicle (GSLV) Mk-III.
- ISRO has redesignated the launch vehicle as LVM-3 from GSLV Mk-III. While the practice of changing the name of the launcher is not uncommon, it is new for India and LVM-3 stands for Launch Vehicle Mark 3.

Why has ISRO changed GSLV MK-III to LVM?

- The sole reason behind changing the name of the vehicle from GSLV to LVM is that the rocket will not deploy the satellites in the geosynchronous orbit. The OneWeb satellites operate in Low Earth orbit (LEO) at an altitude of 1,200 kilometers.
- The geosynchronous orbit, on the other hand, is located 35,786 kilometers above Earth's equator. It is a prograde, low inclination orbit about Earth having a period of 23 hours 56 minutes 4 seconds.
- A spacecraft in geosynchronous orbit appears to remain above Earth at a constant longitude, although it may seem to wander north and south.
- The GSLV-Mk-III has been configured to deploy the satellites in the LEO with two solid strap-on

boosters and a liquid core stage that have been integrated at the second launch pad.

What kind of rocket is GSLV Mk3?
• The GSLV Mk3 rocket is a three-stage heavy-lift launch vehicle developed by ISRO.
• The vehicle has two solid strap-on motors (burns solid fuel), a core-stage liquid booster (burns a combination of liquid fuels) and a cryogenic upper stage (burns liquid hydrogen with liquid oxygen).
• GSLV Mk III is designed to carry four-tonne class satellites into Geosynchronous Transfer Orbit (GTO) or about 10 tonnes to Low Earth Orbit (LEO), which is about twice the capability of its predecessor, the GSLV Mk II.

Why it is important to use GSLV instead of PSLV for a commercial launch?

- Thus far, ISRO has purely relied on its PSLV rocket (that can carry up to 1.75 tonnes to Low Earth Orbit), to do commercial launches.
- The addition of the GSLV MK3 to this list would mean that India can make a greater impact in the international market and thereby earn revenue from launching heavier customer satellites.
- While India's GSLV Mk3 has flown all four Indian national missions successfully to date, this will be the first time that the rocket will be performing the paid service of ferrying customer satellites to space.

GSLV MK-III: ISRO's Launch Vehicles

- ISRO uses two launch vehicles at present – the PSLV and the GLSV (Geosynchronous Satellite Launch Vehicle).
- But these also have several variants. The PSLV is ISRO's most reliable rocket, with 52 successful launches out of 54 attempts.
- The GSLVs are much more powerful rocket and meant to carry heavier satellites deeper into space.
- Till date, ISRO has used 18 GSLV rockets for missions — four of these ended in failure.
- The Indian space research agency has also developed a launch vehicle particularly for small

and micro-satellites — Small Satellite Launch Vehicle, or SSLV — aimed at rising global demand for such satellite launches.

Vyommitra Humanoid

Vyommitra, the humanoid designed and developed by the ISRO to fly aboard unmanned test missions ahead of the Gaganyaan human space-flight mission, is undergoing pre-flight ground tests at the ISRO Inertial Systems Unit (IISU).

About Vyommitra Humanoid
• The AI-based robotic system is developed at a robotics lab at the Vikram Sarabhai Space Centre (VSSC) at Thumba, Thiruvananthapuram.
• The AI-enabled robot is designed to fly aboard a rocket, withstanding vibrations and shock during the flight.
• Vyommitra will fly aboard the first unmanned test flight ahead of the crewed Gaganyaan flight expected in 2024.Functions of the humanoid.
• Vyommitra, equipped with a head, two arms and a torso, is built to mimic crew activity inside the crew module of Gaganyaan.

Vyommitra Humanoid: Facts

- 'Vyommitra', the humanoid designed and developed by the ISRO to fly aboard unmanned test missions ahead of the Gaganyaan human space-flight mission, is undergoing pre-flight ground tests.
- Vyommitra is a half-humanoid lacking lower limbs.
- IISU was responsible for the design, development, and integration of the robot, while sister ISRO centre Vikram Sarabhai Space Centre (VSSC) at Thumba developed its fingers.
- Attaining launch and orbital postures, responding to the environment, generating warnings, replacing carbon dioxide canisters, and operating switches,

monitoring of the crew module, receiving voice commands, and responding via speech (bilingual) are among the functions listed.

Vyommitra Humanoid: Recent developments

- The IISU has successfully integrated it with a computer "brain", which enables it to "read" control panels aboard the unmanned test flights and communicate with the ISRO ground stations.
- It has a certain level of intelligence.
- It is intended to operate and read the display panels and communicate back to ground station using its own voice.

WISER Program

Recently, the first 11 awardees of the Women Involvement in Science and Engineering Research (WISER) programme were felicitated in the presence of the German Ambassador to India & Bhutan and the Vice Chancellor of the Jawaharlal Nehru University.

- The German Ambassador to India & Bhutan appreciated the women researchers' efforts in niche science & technology areas and said that their contribution would strengthen Indo-German collaborations in S&T.

WISER-2022 Awards

- The ten (10) women researchers from India and one (1) from Germany holding regular/long-term research positions in academia, research institutions, or industry were selected under the WISER-2022 programme.
- These 11 awardees will receive financial assistance to participate and collaborate in ongoing R&D & industry projects.
- They will not need to apply for fresh project grants in partnering countries.

What is WISER Program?

- **About:** WISER is one of-its-kind programme, launched to promote women in the field of research and development by lateral entry.

- **Parent Organizations:** WISER Program was launched by Indo-German Science & Technology Centre (IGSTC) to encourage women researchers in R&D projects.
- **Mandate:** IGSTC-WISER intends to build scientific capacity, retain and promote women researchers in India/Germany by utilising complementary expertise in science, technology, innovation, and research partnerships.
- **Eligibility:** The WISER **scheme is designed for women researchers holding a regular/long-term research** position in academia/research institute/industry in India or Germany.
  - WISER Program is open to all areas of STEM (Science, Technology, Engineering and Mathematics/Medicine).
  - There is no requirement of break-in-career or any age limit.
- **Significance:** It is a unique opportunity to be a part of an ongoing research project without applying for a fresh project grant.
  - WISER programme will enable gender equality as well as participation of women in Science & Technology through IGSTC's program.
- **Awards:** IGSTC will support the awardees with a maximum amount of Rs. 39 Lakh from the Indian side and € 48000 from German side.
  - WISER program will offer 20 awards per year.

Indo-German Science & Technology Centre (IGSTC)

- **About:** The Indo-German Science & Technology Centre (IGSTC) is a joint initiative by the Department of Science & Technology (DST), Government of India and the Federal Ministry of Education and Research (BMBF), Government of Germany.
- **Mandate:** It was established to facilitate Indo-German R&D networking through substantive interactions among government, academia/research system and industries, thus fostering innovation for overall economic and societal developments in both the countries.
- **Legal Status:** IGSTC is registered in India as a "society" under Societies Registration Act.
  - The Centre is guided by a Governing Body comprising of equal number of members from

India and Germany with representation from government, academia and industry.

- **Significance:** IGSTC intends to catalyse innovation centric R&D projects by synergising the strength of research/academic institutions and public/private industries from India and Germany.

What is the Mission of IGSTC?
Indo-German Science & Technology Centre (IGSTC) envisions to-

• Advance industrial research partnership with mutuality of interest and respect
• Create platform for cross fertilization of ideas
• Develop knowledge networks for industrial sectors to enhance competitiveness
• Establish joint knowledge pools to address global challenges
• Serve as a nerve centre to promote Indo-German technology partnership.

Defence & Security

C-295 Transport Aircraft

Recently, Prime Minister Shri Narendra Modi laid the foundation stone of C-295 transport aircraft manufacturing facility – the country's first in the private sector – in Vadodara, Gujarat.

- As part of the event, the Prime Minister also visited an exhibition which showcased the technological and manufacturing strides in the aerospace industry under 'Aatmanirbhar Bharat'.

C-295 Transport Aircraft Manufacturing Facility

- **About:** The **C-295 Transport Aircraft Manufacturing** facility will manufacture C-295 aircraft for the Indian Air Force (IAF).
  - It is the first project of its kind in which a military aircraft will be manufactured in India by a private company.
- **Collaboration:** C-295 Transport Aircraft Manufacturing facility is being set up through collaboration between **Tata Advanced Systems Limited and Airbus Defence and Space S.A., Spain.**
- **Cost:** The total cost of the C-295 aircraft manufacturing facility project is Rs 21,935 crore. The aircraft can be used for civilian purposes as well.

About C-295 Transport Aircraft

- **About:** The C-295 is a transport aircraft of 5-10 tonne capacity with contemporary technology that will replace the ageing Avro aircraft of IAF.
- Robust and reliable, it is a versatile and efficient tactical transport aircraft which can perform a number of different missions.
- **Capacity:** The aircraft, with a flight endurance of up to 11 hours, can carry out multi-role operations under all weather conditions.
- It can routinely operate day as well as night combat missions from desert to maritime environments.

- It has a rear ramp door for quick reaction and para dropping of troops and cargo. Short take-off/land from semi-prepared surfaces is another of its features.

C295 MW Transport Aircraft: A Timeline

- The IAF has around 56 Avro transport aircraft procured in the 1960s, which were in the urgent need of replacement.
- The Request For Proposal (RFP) was issued to global firms in May 2013 and the sole bid by Airbus and Tata Group with the C-295 aircraft was approved by the Defence Acquisition Council (DAC) in May 2015.
- However, the Cabinet Committee on Security, headed by Prime Minister Narendra Modi in 2021, finally cleared the procurement of 56 (Fifty-Six) C-295MW transport aircraft for the Indian Air Force (IAF).

C295 MW Transport Aircraft: A Historic Step

- The first of its kind Rs 21,935 crore military aircraft project will be a historic step towards giving fillip to the Indian defence ecosystem, as it is a milestone in terms of debut participation by India's private sector — and probably the most crucially Make-in-India project.
- At least 40 of the 56 aircraft that were contracted in 2021 will be built at the factory.
- 16 aircraft will be delivered in flyaway condition and 40 will be manufactured in India by the Indian Aircraft Contractor, TATA Consortium of Tata Advanced Systems Limited (TASL) and Tata Consultancy Services (TCS) led by TASL.
- The facility would serve as a hub for exports to meet C295 demands in other countries once it gets rolling, with a production rate of at least 8 aircraft per year.
- Notably, as part of the program, over 13,400 parts, 4,600 sub-assemblies and all major assemblies, of the C295 would be sourced from 125 Indian suppliers spread across seven Indian states.

- Further, all 56 aircraft will be fitted with indigenous Electronic Warfare suite of Indian Defence PSUs like Bharat Electronics Ltd (BEL) and Bharat Dynamics Limited (BDL).

C295 MW Transport Aircraft: The Age of the New-Generation Tactical Airlifter
'Buy & Make' category

- The procurement of the new-generation tactical transport airlifter will be done under the 'Buy & Make' category of the Defence Procurement Procedure.
- Out of the 56 aircraft, the first 16 fly-away aircraft are scheduled to be received between September 2023 and August 2025, from Airbus's CASA facility in Spain. While the remaining 40 will be manufactured by 'TATA Consortium' in the upcoming Vadodara facility.

Robustly built and highly reliable

- The 5-10 tonne C-295MW is equipped with contemporary technology that will replace IAF's ageing Avro aircraft.
- The aircraft has a rear ramp door for quick reaction and para dropping of troops and cargo.
- Further, the airlifter can take short take-off/land from semi-prepared surfaces, which will strengthen the logistic capabilities of the IAF in the tough terrains.

Capable of carrying multi-role operations

Capable of carrying multi-role operations worldwide under all weather conditions, the aircraft is fully certified and routinely operates day/night in combat missions in all weather conditions like desert, maritime, extremely hot and extremely cold temperatures. The aircraft will bring the much needed flying capabilities in the difficult terrains like North East, Himalayas, Valley among others.

C295 MW Transport Aircraft: Catalyst for Employment Generation

- With 96% of the total human hour work per aircraft that Airbus employs at its manufacturing facility at Spain, coming to India, the indigenous manufacturing of the aircrafts will create employment opportunities for 600 highly skilled

jobs, over 3,000 indirect jobs and an additional 3,000 medium-skill jobs.
- Augmenting domestic aviation manufacturing will result in reduced import dependence and expected increase in exports.
- Various systems such as engines, landing gear, avionics, EW suite among others will be provided by Airbus Defence & Space and integrated on the aircraft by the TATA Consortium in India.
- Further, the TATA Consortium has identified more than 125 in-country MSME suppliers spread over seven states across India.
- This will act as a catalyst in employment generation in the aerospace ecosystem of the country, with more than 42.5 lakh man-hours of work within the aerospace and defence sector of India.

Importance of C-295 Transport Aircraft Manufacturing Facility

- **Promote Self-Reliance:** The project offers a unique opportunity for the Indian private sector to enter into technology intensive and highly competitive aviation industry.
  - o It will augment domestic aviation manufacturing resulting in reduced import dependence and expected increase in exports.
  - o After completion of delivery of 56 aircraft to IAF, Airbus Defence & Space will be allowed to sell the aircraft manufactured in India to civil operators and export to countries which are cleared by the Government of India.
- **Employment Generation:** The TATA Consortium has identified more than 125 in-country MSME suppliers spread over seven states. This will act as a catalyst in employment generation in the aerospace ecosystem of the country.
  - o This is expected to generate 600 highly skilled jobs directly, over 3,000 indirect jobs and an additional 3,000 medium skill employment opportunities with more than 42.5 lakh man hours of work within the aerospace and defence sector of India.
  - o Nearly 240 engineers will be trained at Airbus facility in Spain.

Pakistan's Removal from FATF 'Grey List'

> The global money laundering and financing watchdog on October 21, 2022 removed Pakistan from its list of countries under "increased monitoring" after four years.

Pakistan's Removal from FATF 'Grey List': Background

- Pakistan has been on the "grey list" of the Financial Action Task Force (FATF) since 2018 because of "strategic counter-terrorist financing-related deficiencies".
- Pakistan's removal from the list was announced after a consensus decision of all 39-members, including India to accept the review of Pakistan's efforts on strengthening its anti-money laundering and combating terror financing (AML/CFT) mechanisms.

What is Financial Action Task Force (FATF)?

- The FATF is an inter-governmental body that sets international standards seeking to prevent international financial crimes that aid terrorism.
- The FATF was established in July 1989 by a G-7 Summit in Paris, initially to examine and develop measures to combat money laundering.
- After the 9/11 attacks, the FATF in October 2001 expanded its mandate to incorporate efforts to combat terrorist financing.
- In April 2012, it added efforts to counter the financing of proliferation of weapons of mass destruction.
- The FATF has developed the FATF Recommendations, or FATF Standards, which ensure a co-ordinated global response to prevent organised crime, corruption and terrorism.

What is the FATF's grey list?
• FATF maintains a "grey list" of countries that it watches closely.
• In essence, these are countries that have, in the assessment of the FATF, failed to prevent international money laundering and terrorist financing, and are, therefore, on a global watchlist for bad behaviour.

• Until October 21st, Pakistan was the most important country on the list. After it (along with Nicaragua) was taken off the list, 23 countries remain under watch.
• Among these countries are the Philippines, Syria, Yemen, the United Arab Emirates, Uganda, Morocco, Jamaica, Cambodia, Burkina Faso, and South Sudan, and the tax havens of Barbados, Cayman Islands, and Panama.

Key action plan tasks

- Among the action plan tasks were that Pakistan align its laws to international laws on AML/CFT and pursue UNSC banned terrorists, including the prosecution of a number of terror groups and leaders including the Lashkar e Toiba's (LeT's) Hafiz Saeed, 26/11 handler Sajid Mir, commander Zaki Ur Rahman Lakhvi and others.
- While Pakistan failed to imprison Jaish e Mohammad Chief Masood Azhar, authorities pursued cases against him, declaring him "missing".

About APG (Asia/Pacific Group on Money Laundering)

- In 1995 an Asia-Pacific regional office called the "FATF-Asia Secretariat" was established and funded by government of Australia.
- In cooperation with other international bodies, that secretariat worked with countries in the Asia-Pacific to generate wide regional commitment to implement anti-money laundering policies and initiatives and secure agreement to establish a more permanent regional anti-money laundering body.
- The Asia/Pacific Group on Money Laundering is an inter-governmental organisation, consisting of 41 member jurisdictions.
- The objective of the APG is to ensure that individual members effectively implement the international standards against money laundering, terrorist financing and proliferation financing related to weapons of mass destruction.

What if FATF blacklists a nation?

- Pakistan was listed in 2018 because of "strategic counter-terrorist financing-related deficiencies".

- A further FATF blacklist meant the country concerned is "non-cooperative" in the global fight against money laundering and terrorist financing.
- If the FATF blacklists any nation, it may lead to downgrading of the country by lenders like International Monetary Fund, World Bank, Asian Development Bank and European Union.

Pakistan's Removal from FATF 'Grey List': Way Forward

- As a result of FATF scrutiny, Pakistan has been forced to take some action against well-known terrorists, including those involved in attacks against the entire international community in Mumbai on 26/11," India's Foreign Ministry spokesperson Arindam Bagchi said in a statement.
- It is in global interest that the world remains clear that Pakistan must continue to take credible, verifiable, irreversible and sustained action against terrorism and terrorist financing emanating from territories under its control.

Operation Pawan

Operation Pawan terminated on 24 March 1990, when the final contingent of the IPKF sailed out of Trincomalee on board ships of the Eastern Fleet.
- Today, the soldiers who were part of that fierce combat engagement are questioning why there was no designated day to commemorate the IPKF's bravery during Operation Pawan.

Introduction
- In 1972, the Sinhalese changed the country's name from Ceylon to Sri Lanka and made Buddhism the nation's primary religion.
- As ethnic tension grew, in 1976, the LTTE was formed under the leadership of Velupillai Prabhakaran, and it began to campaign for a Tamil homeland in northern and eastern Sri

Lanka, where most of the island's Tamils reside.
- As the divide between the Sinhala majority and Tamils deepened in Lanka, the island nation gradually descended into civil war.

About Operation Pawan
- Sri Lanka's location astride the main shipping routes of the Indian Ocean and its proximity to the Indian mainland has strategic significance for the security of India's southern seaboard.
- Operation Pawan started with the induction of the IPKF on 30 July 1987.
- The de-induction started in August 1989 and by October 1989, the bulk of the IPKF had withdrawn.
- Operation Pawan terminated on 24 March 1990, when the final contingent of the IPKF sailed out of Trincomalee on board ships of the Eastern Fleet.
- When the last elements withdrew, there still had been no solution of the political problem that had necessitated the induction, nor indeed has a solution emerged till the date of publication today.
- In round figures, over 1200 deaths and 3500 wounded was the price that the officers and men of India's Peacekeeping Force paid to help a neighbour in distress.
- Though often criticised, Operation Pawan achieved the objectives that had been listed by India's Prime Minister Rajiv Gandhi in his letter to Sri Lanka's President Jayawardene when the Indo-Sri Lankan Accord was signed on 29 July 1987.

Demography of Sri Lanka during operation Pawan
- At that time, Sri Lanka's population of approximately 21 million, consisted of 75% Sinhalese, 18% Tamils (12% Sri Lankan Tamils and 6% Plantation Tamils) & 7% Tamil speaking Muslims.
- The Tamils were mainly located in the Northern and Eastern provinces except for the plantation Tamils who were concentrated in the highlands in the Central Provinces.
- The Northern Province consisted of 80% Tamil population, mainly concentrated around Jaffna City which was the Provincial Capital.

- Tamils constituted one-third of the population of Eastern Province along with one-third Sinhala & one-third Muslims (Moors).

What was the issue?

- The Tamils in Sri Lanka were being denied equal rights due to various historical reasons.
- The Tamils in Sri Lanka have support from the Tamil diaspora in India and across the world.
- As peaceful protests were not yielding any results, armed struggle was started, the leading rebel group was the Liberation of Tamil Tigers Eelam (LTTE), who were trained in India, and they further reached out to Palestinians to hone their fighting skills.
- The Indian Government in April 1987, decided to assist the Tamils of Sri Lanka by an armed intervention.
- However, by diplomatic negotiations an Indo Sri Lanka Peace Accord was signed on 29th of July 1987.
- LTTE was not happy with this peace accord as it compromised their aim of complete freedom in the Northern and Eastern provinces.
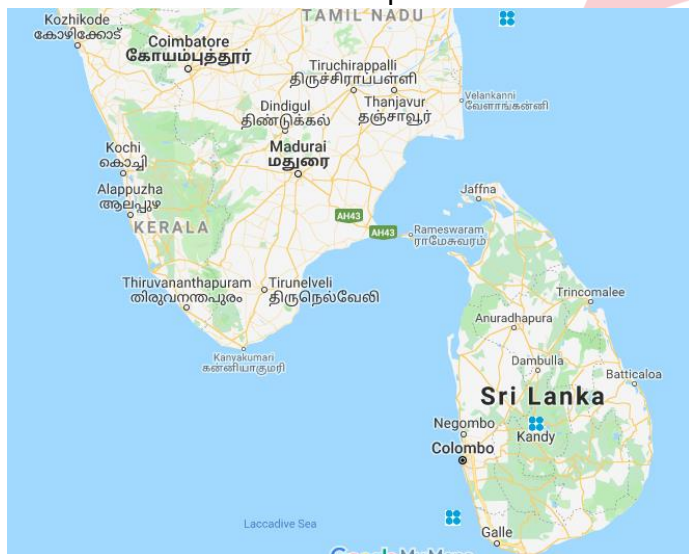
Five major lessons from Operation Pawan

The Indian intervention in Sri Lanka throws up five major lessons for future regional stability operations.

- Firstly, it is imperative to define the mission unambiguously and establish a clear mandate.
- Secondly, there is need for a robust military contingency planning process as well as discussions at various levels within the system to

refine plans and provide an adequate force to meet possible eventualities.

- Thirdly, clear command and control needs to be established at the outset and the appropriate field formation must be designated as the headquarters.
- Fourthly, intelligence planning and coordination need to be made comprehensive, and adequate expertise and capabilities must be built up in advance.
- Finally, the importance of engaging in civil affairs tasks must be factored into the planning process, for which purpose the requisite data must be collated and plans formulated.

UNSC Counter-Terrorism Committee

For the first time since 2015, the United Nations Security Council Counter-Terrorism Committee will hold a special meeting away from Headquarters, in Mumbai and New Delhi, India, on 28 and 29 October.

The meeting will focus on Unmanned Aerial Vehicles (UAVs) and other emerging technologies.

What are the objectives?

Mindful of the increasing threat posed by the misuse of these technologies, the objectives are to:

- Provide an overview of ways Member States are deploying new and emerging technological developments to prevent and counter terrorist narratives and acts and to bring terrorists to justice, consistent with their human rights obligations;
- Update Member States on recent developments and the latest evidence-based research on threats;
- Identify continuing challenges; and
- Share good practices in compliance with international human rights law, industry action, public-private partnerships and legislative, policy and regulatory responses.

Key focus areas

- The special meeting will focus on three areas – Internet and social media; terrorism financing; and

unmanned aerial systems (UAS) – where emerging technologies are experiencing rapid development, growing use by Member States (including for security and counter-terrorism purposes), and increasing threats of abuse for terrorist purposes.

- The Counter-Terrorism Committee is assisted by its Executive Directorate (CTED), which led a series of six technical sessions, held 16 Sept. to 3 Oct., to inform the special meeting and its outcome document.

How UNSC Counter-Terrorism Committee formed?

- Countering the scourge of terrorism has been on the agenda of the United Nations for decades.
- In the aftermath of the 11 September attacks against the United States in 2001, the Security Council unanimously adopted resolution 1373 (2001), which for the first time established a dedicated Counter-Terrorism Committee (CTC) of the Council.
- The CTC is assisted by an Executive Directorate (CTED), which carries out its policy decisions and conducts expert assessments of the 193 United Nations Member States.

Members of the UNSC Counter-Terrorism Committee (CTC)

The Committee is composed of 15 Member States:

1. Albania
2. Brazil
3. China
4. France
5. Gabon
6. Ghana
7. India
8. Ireland
9. Kenya
10. Mexico
11. Norway
12. Russian Federation
13. United Arab Emirates
14. United Kingdom
15. United States

UNSC Counter-Terrorism Committee: Country Visits

- CTED conducts country visits on the Counter-Terrorism Committee's behalf to assess Member

States' counter-terrorism efforts, including progress made, remaining shortfalls, and priority areas for technical assistance needs, as well as to identify terrorism-related trends and challenges and good practices employed in the implementation of relevant Security Council resolutions.

- CTED's visits to Member States, conducted on the Committee's behalf, is the primary tool to be used by the CTC to effectively fulfil its mandate to monitor, promote and facilitate Member States' implementation of Security Council resolutions.

Know About UNSC
• The United Nations Charter established six main organs of the United Nations, including the Security Council.
• It gives primary responsibility for maintaining international peace and security to the Security Council, which may meet whenever peace is threatened.
• All members of the United Nations agree to accept and carry out the decisions of the Security Council.
• While other organs of the United Nations make recommendations to member states, only the Security Council has the power to make decisions that member states are then obligated to implement under the Charter. UNSC has 15 members of which 5 are permanent and 10 are non-permanent members.
• Non-permanent members elected for two-year terms by the UN General Assembly.
• Five permanent members of UNSC are- US, UK, France, Russia, and China.

M-Chips in Defence Equipment

The MoD has tied up with the Ministry of Electronics and Information Technology (MeitY) to manufacture "chips" and develop an "Indian micro-processor chip".

- Initially, the MoD has asked for 5 lakh chips.
- The chips will be ready by the end of 2023 or early 2024, estimates say.

What are M-Chips?

- Semi-conductors — also known as 'chips' in engineering terminology — are used in fighter jets, copters, tanks, naval warships, submarines, missiles, night-vision devices, radars, displays for pilots, space applications and communication networks.

- The basic component of a semiconductor chip is a sliver of silicon, which is etched with billions of microscopic transistors and projected to specific minerals and gases, forming patterns to control the flow of current while following different computational instructions.

- The most-advanced semiconductor technology nodes available today are the 3 nanometre (nm) and the 5nm ones.

- Semiconductors having higher nanometre value are applied in automobiles, consumer electronics and so on, while those with lower values are used in devices such as smartphones and laptops.

Why India is striving for Indigenous Chip Making?

- The primary goal is to have two versions of indigenously designed and developed 'secure chips'.

- About 50,000 such chips are expected to be deployed in systems and equipment for the armed forces.

- At present, the forces are partially dependent on in-house labs of the Defence Research and Development Organisation (DRDO) for semiconductors. Semiconductor Laboratory, Mohali, is the manufacturing unit.

- A majority of the chips are imported.

Role of tiny microchips in the battlefield

- In the current geopolitical contestation for critical and emerging technologies, the contribution of semiconductor technology to the defence sector cannot be overlooked.

- While advanced military systems seem to utilise high-end electronics, the integral part of these systems remains fundamental semiconductor components.

- Some components have evolved from primitive single-piece devices to complex tools. There are some semiconductor components that have the ability to remain indispensable to modern-day military systems.

- Some Examples:
  - Sensors and Actuators
  - Memory Chips
  - Electro-optical system
  - Microcontrollers
  - Logic Devices
  - Discreet Devices

What is behind the global chip shortage?

- Chip, or semiconductor, which is the brain-centre of any electronic technology, have found itself a rarity in the post-Covid era, with many large factories shutting down in places like South Korea and Taiwan. This has created a buzz in demand that these foundries were unable to satisfy once they opened.

- On the one hand, the pandemic caused an increase in the demand for electronic devices like computers, laptops and smartphones etc.

- Manufacturing and logistical constraints meant that the situation was only exacerbated.

- This shortage that started last year is expected to continue till 2022, and to prevent such a situation in future, many companies are planning to reduce their reliance on only a few big factories which supply to the whole world.

An Opportunity for India

- The global semiconductor market is projected to grow from $340 billion in 2015 to $650 billion in 2025, with a CAGR of 6.7%.

- Taiwan is the world's largest manufacturer of semiconductors, with a market share of over 50 percent.

- Today, India's semiconductor demand stands at around $24 billion and is expected to reach $100 billion by 2025. Presently the country's semiconductor demand is entirely met through imports.

- With the growing technology and the advent of IoT and 5G technology in India, the demand for semiconductor chips is increasing.

- India is set to witness a significant demand spike by 2025 driven by electronic manufacturing, IoT products and data centre facilities.
- Semiconductor shortages in the pandemic and the new geopolitical realities of semiconductor supply chains further exacerbate the need to develop reliable and trusted sources for semiconductors.

Government Initiatives

- In the Union Budget 2017-18, the Government of India increased the allocation for incentive schemes such as the Modified Special Incentive Package Scheme (M-SIPS) and the Electronic Development Fund (EDF) to Rs 745 crore (US$ 111 million) for providing a boost to the semiconductor as well as electronics manufacturing industry.
- The Union Cabinet approved an incentive of up to Rs 10,000 crore for investors by amending the Modified Special Incentive Package Scheme (M-SIPS), to further encourage investment in the electronics sector, generate employment and reduce dependence on imports.
- The Ministry of Electronics and Information Technology is planning to revise its policy framework, wherein the government will play a more active role in developing the sector by attracting more private players and providing initial capital to make India a global semiconductor hub.

M-Chips in Defence Equipment: The way ahead

- Chip-making also requires gallons of ultrapure water in a single day, which experts say, could be a task for the government to provide to factories, compounded also by the drought conditions which often prevail in large parts of the country.
- Besides, an uninterrupted supply of power is central to the process, with just seconds of fluctuations or spikes causing millions in losses.
- Another task for the government is to drive up consumer demand in the semiconductor industry to not end up in a situation where these ventures remain successful only till taxpayers are forced to fund required subsidies.

M-Chips in Defence Equipment: Conclusion

With the government curating policies to encourage defence manufacturing and start semiconductor manufacturing in the country, this is the time for a confluence of both in India's national interest.

History and Culture

Kashi-Tamil Sangamam

The centre has announced a month-long Kashi Tamil Sangamam.
- Kashi-Tamil Sangamam aims to rediscover the links between the two ancient knowledge, culture and heritage centres.
- Kashi-Tamil Sangamam will begin from November 16.

About Kashi Tamil Sangamam
- A month long Kashi Tamil Sangamam will be organized in Varanasi from November 16 to December 19.
- During this Kashi Tamil Sangamam, academic exchanges – seminars, discussions etc. will be held between experts, and scholars on various facets of the two ancient manifestations of Indian culture, with a focus on bringing out the links and shared values between the two.

Kashi-Tamil Sangamam: Role of Bharatiya Bhasha Samiti (BBS)
- A High Powered Committee for Promotion of Indian Languages called Bharatiya Bhasha Samiti (BBS) headed by Chamu Krishna Shastry, has come up with a proposal to rediscover, reaffirm and celebrate the links between the Tamil culture and Kashi that have existed for centuries.
- The Committee has been constituted by the Education Ministry.
- The broader objective is to bring the two knowledge and cultural traditions closer, create an understanding of our shared heritage and deepen the people-to-people bond between the regions.

Kashi-Tamil Sangamam: An Ideal Platform to feel "Ek Bharat, Shrestha Bharat"
- The Sangamam would be an ideal platform to understand the unity in India's civilisational assets through two historic centres of knowledge and culture.

- The Sangamam, which will be held in the auspicious Karthigai Tamil month, has been organised under the overall framework and spirit of "Ek Bharat, Shrestha Bharat."
- The idea is to create a bridge between ancient India and the current generation.
- It will also help in connecting people and languages.

The significance of Karthigai Tamil month
- Karthigai masam, Karthikai masam, is the eighth month as per Tamil Calendar.
- Karthikai masam is the favorite month for Lord Muruga, Lord Shiva and Lord Vishnu.
- Many major festivals are celebrated in the month of Karthika in Tamil Nadu.
- Karthikai Deepam and Maha Bharani are the important Karthikai festivals. Karthikai Deepam falls on the Full Moon or Pournami in Karthikai month.
- Karthigai Masam coincides with Kartik month in Hindi, Gujarati, Marathi, Telugu, and Kannada calendars.

Kashi-Tamil Sangamam: Key Themes
- The Sangamam will be centred on themes covering various facets of knowledge – literature, ancient texts, philosophy, spirituality, music, dance, drama, yoga, Ayurveda, handlooms, handicrafts, and as modern innovations, trade exchanges, edutech and other gen-next technology.
- It will also be a unique learning experience for students, scholars, academics, practising professionals, etc., on various facets of Indian Knowledge Systems, education and training practices, arts and culture, language, literature, etc.

Kashi-Tamil Sangamam: North-South Connect
- It is proposed that practitioners of these knowledge streams from different parts of Tamil Nadu will be invited for an eight-day visit to Varanasi and its neighbouring areas.

- It is proposed that around 210 people from different parts of Tamil Nadu, including from Chennai, Rameswaram and Coimbatore, will be taken in one group for a period of eight days.
- 12 such groups, comprising around 2500 people, can visit over a month.
- These groups have been identified, including students, teachers, literary (authors, poets, publishers), cultural experts, professionals (practising arts, music, dance, drama, folk art, yoga, Ayurveda), entrepreneurs (Small Medium Enterprises, start-ups) business people, (community business groups, hoteliers,) artisans, heritage related experts (archaeologists, tour guides, bloggers) etc.
- At the end of the Sangamam, the people of Tamil Nadu will get an immersive experience of Varanasi and the people of Kashi will also get to know the cultural richness of Tamil Nadu through a healthy exchange of knowledge-sharing experiences - events, visits, and conversations.

National Conference on Project Mausam

> Recently, the Archaeological Survey of India (ASI) organized a two-day National Conference on Project Mausam at India Habitat Centre, New Delhi.

National Conference on Project Mausam 2022
- **About:** National Conference on Project Mausam is being organized with the objective of promoting further research and broadening our understanding of this subject.
- **Theme:** National Conference on Project Mausam 2022 is being organized on the theme of "Jaladhipurayatra: Exploring Cross- Cultural Linkages along the Indian Ocean Rim Countries".
- **Associated ministry:** Ministry of culture is organizing the National Conference on Project Mausam 2022
- **Participation:** Over twenty scholars from different parts of India participated in the Academic Sessions of the Conference.

o These include meteorologists, archaeologists, historians and internationally-renowned experts in the fields of climate change, underwater explorations and intangible cultural heritage.

Key Sessions in National Conference on Project Mausam
The Conference consists of a Plenary Session followed by six Academic Sessions, each dealing with a particular aspect of India's maritime interactions.
- One session exclusively deals with issues relating to the World Heritage properties with special reference to-
  o Identification of historical sites and structures located in different countries of the Indian Ocean region and
  o Exemplifying inter-country relations, thus qualifying for trans-national nomination for UNESCO World Heritage certification.
- This was followed by a unique session in which the representatives and ambassadors of the different Indian Ocean region countries discussed-
  o Different aspects of the region's inter-country ties and
  o Trans- national nomination of important sites in the region for the World Heritage status.

Project 'Mausam'
• **Background:** Project Mausam' was launched by the Ministry of Culture, Government of India at UNESCO's 38th World Heritage Committee Meeting held at Doha, Qatar, in 2014.
o Currently, the Project is being administered by the Archaeological Survey of India (ASI).
• **About:** Focusing on monsoon patterns, cultural routes and maritime landscapes, Project 'Mausam' is examining key processes and phenomena that link different parts of the Indian Ocean littoral as well as those that connect the coastal centres to their hinterlands.
• **Implementation:** Project 'Mausam' is a Ministry of Culture project. It is to be implemented by Indira Gandhi National Centre for the Arts (IGNCA), New Delhi as the nodal coordinating agency with support of Archeological Survey of

India and National Museum as associate bodies.

National Maritime Heritage Complex

Recently, the Prime Minister, Shri Narendra Modi reviewed the work in progress at the site of the National Maritime Heritage Complex at Lothal, Gujarat with the help of a drone via video conferencing.

About National Maritime Heritage Complex

- **About**: National Maritime Heritage Complex (NMHC) at Lothal is being developed as a one-of-its-kind project to display India's rich and diverse maritime heritage.
  o The foundation stone for the NMHC project was laid by Prime Minister Narendra Modi and the consent for the master plan was given in March 2019.
- **Associated Ministry:** National Maritime Heritage Complex, Lothal is being built under overall supervision and guidance of Ministry of Ports, Shipping and Waterways.
  o also help Lothal to emerge as a world-class international tourist destination.
- **Cost:** National Maritime Heritage Complex is being built with total cost of 3500 crore rupees.

Key features of National Maritime Heritage Complex at lothal

- **National Maritime Heritage Complex** will have several innovative and unique features such as-
  o Lothal mini recreation to recreate Harappan architecture and lifestyle,
  o **Four theme parks –**
    ▪ Memorial theme park,
    ▪ Maritime and Navy theme park,
    ▪ Climate theme park, and
    ▪ Adventure and Amusement theme park.
- It will also house following among others-
  o the world's tallest lighthouse museum,
  o Fourteen galleries highlighting India's maritime heritage starting from the Harappan times till today,

o A Coastal states pavilion displaying the diverse maritime heritage of states and UTs.

Significance of National Maritime Heritage Complex

- National Maritime Heritage Complex will help Lothal to emerge as a world-class international tourist destination.
- A maritime heritage complex in Lothal is a fitting tribute to the city's historical legacy and heritage.
- National Maritime Heritage Complex at Lothal will act as a centre for learning and understanding of India's diverse maritime history.
- The boost to the tourism potential through this project will also augment the economic development of the region.

Lothal- A Harappan Civilization Site

- **Background:** Lothal was one of the southernmost sites of the ancient Indus Valley civilisation, located in the modern state of Gujarat.
  o Construction of the city is believed to have begun around 2200 BCE.
  o The excavation started from 13 February 1955 to 19 May 1960 by the Archaeological Survey of India (ASI) to unearth the ancient city.
  o Archaeologists believe that the city was a part of a major river system on the ancient trade route from Sindh to Saurashtra in Gujarat.

- **About:** Lothal was one of the prominent cities of the Harappan civilization and is known for the discovery of the oldest man-made dockyard.
- **Location:** Lothal is situated in Gujarat; on Bhogva river near the Gulf of Cambay.
- **Key Findings:** Following are the key findings from Lothal Harappan Site-
  - Port Town
  - Graveyard
  - Ivory weight balance
  - Copper dog
  - First manmade port
  - Dockyard
  - Rice husk
  - Fire alters
  - Chess-playing
- **Significance:** Artefacts suggest that trade from Lothal may have been conducted with Mesopotamia, Egypt and Persia.
  - An entire township with market and dock has been unearthed here.

When was Lothal discovered?
• Indian archaeologists started the search for cities of the Harappan Civilisation post-1947 in Gujarat's Saurashtra.
• **Archaeologist SR Rao** led the team which discovered a number of Harappan sites at the time, including the port city of Lothal.
• Excavation work was carried out in Lothal between **February 1955 and May 1960**.
• Adjacent to the excavated areas stands the archaeological site museum, where some of the most prominent collections of Indus-era antiquities in India are displayed.

How was Lothal identified as port city?
- The National Institute of Oceanography in Goa discovered marine microfossils and salt, gypsum crystals at the site, indicating that sea water once filled the structure and it was definitely a dockyard.
- It had the world's earliest known dock, connecting the city to an ancient course of the Sabarmati river.
- A metropolis with an upper and a lower town had in on its northern side a basin with vertical wall, inlet and outlet channels which has been identified as a tidal dockyard.
- Satellite images show that the river channel, now dried, would have brought in considerable volume of water during high tide, which would have filled the basin and facilitated sailing of boats upstream.

What heritage value does Lothal hold?
- Lothal was nominated in April 2014 as a UNESCO World Heritage Site, and its application is pending on the tentative list of UNESCO.
- It is the only port-town of the Indus Valley Civilisation.
- Ancient port-towns around the world-
  1. Xel Ha- Peru
  2. Ostia- Port of Rome
  3. Carthage- Port of Tunis in Italy
  4. Hepu in China,
  5. Canopus in Egypt
  6. Gabel- Byblos of the Phoenicians
  7. Jaffa in Israel
  8. Ur in Mesopotamia
  9. Hoi An in Vietnam

Paryatan Parv

Recently, Union Minister of State for Tourism Shripad Yesso Naik inaugurated 'Paryatan Parv - 2022' at Chhatrapati Shivaji Maharaj Vastu Sangrahalaya, Mumbai.
- MoS Tourism urged all states to focus on film tourism in the country and the upcoming G20 Presidency which is to be held in the country.

About Paryatan Parv 2022
- **About:** 'Paryatan Parv' is an initiative based on the vision of Hon'ble Prime Minister that aims for promotion of domestic tourism.
  - The Ministry of Tourism is organizing 'Paryatan Parv - 2022' (Tourism Festival) as part of Iconic Week celebration of Azadi Ka Amrit Mahotsav.
- **Venue:** Tourism Festival 2022 is being organized in Mumbai from 30th September to 2nd October, 2022.

- **Organizing Ministry:** Ministry of Tourism is entrusted with organizing 'Paryatan Parv - 2022' (Tourism Festival).
- **Mandate:** Paryatan Parv 2022 is being organized to showcase diverse Culture, Art, Crafts and Cuisine of the States and one UT from Western & Central Region namely-
  o Maharashtra,
  o Gujarat,
  o Goa,
  o Madhya Pradesh,
  o Chhattisgarh and
  o UT of Dadra & Nagar Haveli and Daman & Diu.
- **Key Objectives:** Paryatan Parv shall focus on domestic tourists specially to sensitize youth.
  o The members of Yuva Tourism club from schools and colleges have been invited to participate in Paryatn Parv this year.
  o This will also bring about a better understanding of heritage and culture of the Region amongst Mumbaikars.
  o The event is promoted with the aim of creating awareness about varied Tourism Product, Cuisine, Heritage and Culture of India.

Key Highlights of Paryatan Parv 2022
- Tourism Pavilions of 8 State Tourism Departments from Western & Central Region and also other State Tourism Offices present in Mumbai.
- Multimedia Exhibition on Azadi Ka Amrit Mahotsav Celebrating 75 years of India's Independence by Central Bureau of Communication, Ministry of Information & Broadcasting, Government of India
- Kitchen Studio – showcase of cuisines of the region under the theme 'Pashim – Madhya Milap' by Institute of Hotel Management, Mumbai
- Crafts Bazaar with 15 Handicraft stalls by Artisans from 5 states and one Union Territory in the Western & Central Region invited by Development Commissioner, Handicrafts, Ministry of Textiles.
- Cultural Performances at the Central stage showcasing Folk Arts from across India.
- Ministry of Ayush stall on theme Ayurveda @2047.
- Stall by Indian Air Force recruiting office, Mumbai promoting Agnipath Scheme.

- Free Guided Walking Tours by the Regional Level Tourist Guides covering attractions in and around Chhatrapati Shivaji Maharaj Vastu Sangrahalaya.
- Workshop on Art and Competitions for School Children
- Other Interactive Activities to keep visitors engaged.

Soorasamharam

The ongoing Kanda Sashti festival, the 'soorasamhaaram ritual' (annihilation of demon Soorapadman by the lord) being held in Murugan temples across the State of T.N.
- According to the lunar calendar, Skanda Sashti falls on Karthika Masam' sixth day.

Know About Skanda Sashti
- Skanda Sashti or Kumar Sashti is a popular Hindu festival dedicated to Lord Kartikeya, son of Devi Parvati and Lord Shiva.
- Lord Kartikeya is known by many names by his devotees such as Kumar, Muruga, Subramanya etc. Hence, Skanda Sashti is also known as Kumar Sashti.

Significance of Skanda Sashti
  o Skanda Sashti corresponds to the birth day of Lord Kartikeya or Subramanya also called as Muruga in Tamil.
  o Skanda Sashti is the sixth day (Sashti Tithi) of the Shuklapaksha in the month of Kartika (October – November).
  o Lord Skanda is one of the popular names of Subramanya and therefore the event is called as Skanda Sashti.
  o On Skanda Sashti people observe fasting to propitiate Lord Subramanya.
  o Grand celebrations happen in the temples of Muruga in Tamilnadu.

The festival of Skanda Sashti
  o The festival of Skanda Sashti is a ten days long event in Tamil Nadu and some other states.
  o In the temple for Lord Subramanya located in Tiruchendur, a grand festival is celebrated on

these days and to conclude the festival the event of Sura Samhar or the killing of the demons by Lord Skanda is enacted to this day.

o Devotees throng to witness this grand event and seek the blessings of Lord Skanda.

How Soorasamharam festival celebrated?

- During Skanda Sashti, followers observe a six-day fast that begins on Pirathamai, the first day of the lunar month Karthika, and finishes on Soorasamharam, the sixth day.

- The last and most significant day of the six-day celebrations is known as Soorasamharam.

- Every year, the festival of Soorasamharam is held to commemorate the triumph of good over evil, as Lord Murugan is said to have killed the demon Surapadman on this day, bringing peace to the world.

- It is crucial to note that Panjami Tithi and Shasti Tithi are conjugated while choosing the day for Soorasamharam Vratam.

- Therefore, all the temples observe Kanda Sashti if Shasti Tithi begins before sunset on Panjami Tithi.

Soorasamharam 2022: Six Abodes of Lord Murugan in T.N.

- The six abodes of lord Muruga are called **Aarupadai Veedu** which in translation means the "six war houses of the Lord". These six abodes attract thousands of followers from across the world, although there are countless temples dedicated to Muruga, who is the son of Lord Shiva and Ma Parvathi. Muruga is also known in various names, such as Karthikeya, Subramanya, Kumaran, etc.

- In Tamil Nadu, these six specific temple are considered very important amongst the devotees.

- The six most sacred abodes of Murugan was mentioned in Tamil sangam literature, Thirumurugatrupadai, written by Nakkeerar and in Thiruppugazh, written by Arunagirinathar.

- **The six most sacred abodes of Murugan are:**

o Arulmigu Subramaniya Swamy Temple in Thiruparankundram
o Arulmigu Solaimalai Murugan Temple in Pazhamudircholai
o Arulmigu Dhandayuthapani Swamy Temple in Palani
o Swaminatha Swamy Temple, Swamimalai

o Thiruchendur, Tuticorin
o Subramaniya Swamy Temple in Tiruchendur.

Soorasamharam festival 2022 at Thiruchendur Murugan Temple

- While there are several ways to commemorate Soorasamharam, the festival at the Thiruchendur Murugan Temple is very lavish.

- The Tiruchendur temple, being the second of the six abodes of Lord Muruga (Aru Padai Veedu) is famous that a little over five to seven lakh devotees from various destinations witnessed 'soorasamharam' here.

- This festival is celebrated by the temple over the course of six days, ending on the day of Soorasamharam.

- This year also, as a part of the six-day 'Kanda Sashti' festival, the celebrations commenced on October 25 with yaga sala pujas. The temple was illuminated and 'soorasamharam' was the highlight of the six-day festivities.Thiru Kalyanam is observed the day following Soorasamharam.

- Every day, the sanctum sanctorum was opened at 3 a.m. and following 'viswaroopa' darshan, Udayamarthanda abishekam was performed to the presiding deities.

- The nearly 50-minute event (Soorar Vadham) was a reflection of slaying of the demons headed by Soorapadman, which symbolised the victory of good over evil.

- After the 'soorasamharam', many devotees took a holy dip in the sea.

- The deities - Valli Deivanai and Jayanthinathar were brought out to the 'Santhosha' mandapam after 'soorasamharam' ended.

- The last day of the 'Kanda Sashti' - October 31 - would witness the celestial wedding to be performed at the temple.

Pasumpon Muthuramalingam Thevar

In commemoration of the birth and death anniversary of Pasumpon Muthuramalinga Thevar, thousands of people, including political leaders, thronged Madurai and Ramanathapuram districts of T.N. for garlanding custom and Mulaippari processions.

About Pasumpon Muthuramalingam Thevar

- Pasumpon Muthuramalingam Thevar was born on 30 October 1908 in Pasumpon in the Ramanathapuram district of Tamil Nadu.
- He was a freedom-fighter cum spiritual leader and was seen as a deity among the Mukulathor community.
- The people of the Mukulathor community still make offerings as is done for the deities in temples to the statue on his birthday and guru pooja celebrations.
- Thevar became a full-time member of the Congress party and attended the 1927 Congress session at Madras as a volunteer when he was just 19.
- He became a close aide of Netaji Subhas Chandra Bose. Netaji introduced Thevar to his mother as his younger sibling.
- He served as the national Deputy Chairman of All India Forward Bloc (AIFB) from 1952. He was elected three times to the national Parliamentary Constituency.

About All India Forward Bloc

- It was formed in May 1939 by Subhash Chandra Bose.
- It was a left-wing nationalist political party in India which emerged as a faction within the India Congress in 1939.
- First All India Conference of Forward bloc was held in Nagpur in June 1940. And it passed a resolution titled 'All Power to the Indian People', urging militant action for struggle against British colonial rule.
- The prime objective of the Forward Bloc was to bring all radical elements of the Congress party together. So that it could spread the meaning of complete independence of India with adherence to the application of principles of equality and social justice.
- It was declared banned on 23 June 1942. Even when it was declared illegal, it played a revolutionary role to crown the struggle of the people with success and glory.
- The party re-established itself as an independent political party after the independence of India.

Know about Thevar Jayanthi

- Thevar Jayanthi is celebrated on October 30 every year to commemorate the birth anniversary of Pasumpon Muthuramalingam Thevar.
- The day is celebrated in a grand way by the Thevar community in the southern districts of Tamil Nadu.
- The birth anniversary of freedom-fighter-cum-spiritual leader is also called Guru Pooja.

Know about Thevar Community
• Thevar (The word derived from Sanskrit Devar) means God early days Kings were portrayed as god and called as Devar. Later the descendents of Muvenders were called as thevars.
• Devar is not a caste name it is a Surname of Mukkulathors called as Thevar, a dominant caste in Tamilnadu.
• Mukkulathor Means Three clans (Kallar, Maravar and Agamudayar) Combinedly called as Thevar or Devar.

Pasumpon Muthuramalingam Thevar: Thevar Shrine

- Thevar's resting place is his native village Pasumpon.
- The main celebrations of Thevar Jayanthi take place at his samadhi, which is located about 50 miles from Madurai.

Pasumpon Muthuramalingam Thevar: Struggle for Social Equality

In favor of "The Temple Entry Authorization and Indemnity Act"

- The Temple Entry Authorization and Indemnity Act were passed by the government of C. Rajagopalachari in 1939. It removed restrictions that prevented Dalits from entering Hindu temples. He supported the change and in July 1939 assisted activist A. Vaidyanatha Iyer to take Dalits to the Meenakshi Temple in Madurai.

Against the "Criminal Tribes Act (CTA)"

- The Criminal Tribes Act (CTA), enacted by the British in 1920, was against the Mukulathor community, in which Thevar protested by mobilizing people and starting protests that were a major milestone in his career. The Act criminalized the entire community by branding them as habitual criminals. He was instrumental in getting the Act repealed after continuous efforts in 1946. He died on October 30, 1963

Miscellaneous

Homi Jehangir Bhabha

October 30 was the birth anniversary of Dr. Homi J. Bhabha.

About Homi Jehangir Bhabha
• Homi Jehangir Bhabha (October 30, 1909 - January 24, 1966) was born in a wealthy Parsi family of Bombay.
• Bhabha's family had a long tradition of learning and service in the field of education.
• Homi Jehangir Bhabha is mostly known as the chief architect of India's nuclear program.
• However, his contribution to India's development goes far beyond the sphere of atomic energy.
• He had established two great research institutions namely the Tata Institute of Fundamental Research (TIFR), and the Atomic Energy Establishment at Trombay (which after Bhabha's death was renamed as the Bhabha Atomic Research Centre (BARC).

Key Works of Homi Jehangir Bhabha

- He played a crucial role in the development of electronics in India.
- Bhabha was an outstanding scientist and a brilliant engineer.
- He derived a correct expression for the probability of scattering positrons by electrons, a process now known as Bhabha scattering.
- His classic paper, jointly with W. Heitler, published in 1937 described how primary cosmic rays from space interact with the upper atmosphere to produce particles observed at the ground level.
- Bhabha and Heitler explained cosmic ray shower formation by the cascade production of gamma rays and positive and negative electron pairs.
- 'In 1938 Bhabha was the first to conclude that observations of the properties of such particles would lead to the straightforward experimental verification of Albert Einstein's theory of relativity'.

- Bhabha possessed sensitive and trained artistic gifts of the highest order. The environment in which he grew certainly helped him to develop all these fine qualities.

The important contributions made by Bhabha

- The explanation of relativistic exchange scattering (Bhabha Scattering).
- The theory of production of electron and positron showers in cosmic rays (Bhabha-Heitler theory).
- Speculation about the Yukawa particle related to which was his suggestion of the name meson.
- Prediction of relativistic time dilation effects in the decay of the meson.

About the importance of Bhabha's research work

Cecil Frank Powell (1903-1969) who was awarded the 1950 Nobel Prize for physics wrote: "Homi Bhabha made decisive contributions to our understanding of how they (the showers) developed in terms of electromagnetic processes. He was also well-known at this time for his attempts to account for those elementary particles then known to exist by a method using group theory. He was thus a very early exponent of those methods used many years later for a similar purpose by Gell-Mann and others. My friend, Leopold Infeld says that he was a distinguished and elegant theorist and his papers were always written in the best of taste"

- It was Bhabha who suggested the name 'meson' now used for a class of elementary particles. When Carl David Anderson (1905-91) discovered a new particle in the cosmic radiation with a mass between that of electron and the proton he named it 'mesoton' which was subsequently changed by him to mesotron presumably at the advice of Millikan. Bhabha in a short note to Nature (February 1939) proposed the name 'meson'.

Homi Jehangir Bhabha: A Multifaceted Personality

- He loved music and dancing. He had considerable knowledge of both Indian and western music.
- He painted and sketched. He designed the settings of dramatic productions. He was an

architect of no mean ability. Bhabha was a perfectionist.

- He was a true lover of trees and did everything under his powers to protect them.

Homi Jehangir Bhabha: An educationist, Scientist and culturist

- At one UNESCO conference after another, he stood out even among the other distinguished members of the Indian delegation, as a world citizen qualified in all three subjects – education, science and culture – as hardly another member of the conference was.
- He was in fact an obvious choice for the headship of the Organization if he had felt inclined that way.

Homi Jehangir Bhabha: Father of Nuclear Program in India

- Dr. Homi Jehangir Bhabha conceived the Nuclear Program in India. Dr Bhabha established the Tata Institute of Fundamental Research (TIFR) for carrying out nuclear science research in 1945.
- To intensify the effort to exploit nuclear energy for the benefit of the nation, Dr Bhabha established the Atomic Energy Establishment, Trombay (AEET) in January 1954 for a multidisciplinary research program essential for the ambitious nuclear program of India.
- After the sad demise of Bhabha in 1966, AEET was renamed Bhabha Atomic Research Centre (BARC).
- Dr. Bhabha established the BARC Training School to cater to the manpower needs of the expanding atomic energy research and development program.

In Bhabha's own words "When Nuclear Energy has been successfully applied for power production in, say a couple of decades from now, India will not have to look abroad for its experts but will find them ready at hand".

- Dr Bhabha emphasized on self-reliance in all the fields of nuclear science and engineering.
- BARC is the mother of R&D institutions such as Indira Gandhi Centre for Atomic Research (IGCAR), Raja Ramanna Centre for Advanced Technology (RRCAT), Variable Energy Cyclotron Centre(VECC), etc., which carry out pioneering.

What Bhabha felt necessary for putting India's nuclear program on a sound footing?

The first three things that Bhabha felt necessary for putting India's nuclear programme on a sound footing were:

- The survey of natural resources, particularly materials of interest to atomic energy programme such as uranium, thorium, beryllium, graphite etc. To achieve this a special unit, Rare Minerals Division was created at Delhi with the help of Darashaw Nosherwan Wadia (1883-1969).
- Development of strong research schools in basic sciences particularly physics, chemistry and biology by providing facilities to and training up high quality research scientists.
- Development of a programme for instrumentation particularly in electronics. A unit called Electronics Production Unit was started in TIFR, which later formed the nucleus of the large corporation known as Electronics Corporation of India Limited (ECIL) at Hyderabad.

Homi Jehangir Bhabha: Key International Recognition

- Bhabha was elected a Fellow of the Royal Society in 1941.
- In 1943 he was awarded the Adams Prize by Cambridge University for his work on cosmic rays, and in 1948 the Hopkins prize of the Cambridge Philosophical Society.
- In 1963 he was elected Foreign Associate of the U.S. National Academy of Sciences, and Honorary Life Member of the New York Academy of Sciences.
- In 1964 he was made Foreign Corresponding Academician of the Royal Academy of Sciences, Madrid.
- From 1960 until 1963 he was President of the International Union of Pure and Applied Physics.
- He was president of the historic International Conference of the Peaceful uses of atomic energy held, under U.N. auspices, at Geneva in August, 1955.
- Bhabha was President of the National Institute of Sciences of India in 1963 and President of the Indian Science Congress Association in 1951. He was awarded the title of Padma Bhushan by the Government of India in 1954.

Jatindra Nath Das

> Jatindra Nath Das, widely known as Jatin Das, was a revolutionary freedom fighter from Bengal, born on this day in 1904.

About Jatindra Nath Das

- Jatindra Nath Das worked at a very young age for the cause of political prisoners in the Indian freedom struggle.
- Being an inspirational freedom fighter, human rights activist and a fervent revolutionary, he joined the AnushilanSamiti (a 20th century Indian revolutionary organization).
- He collaborated with Bhagat Singh and other members from the Hindustan Republican Socialist Association (HRSA).
- While he was 17 years old, he got actively involved in the Non-Cooperation Movement launched by Gandhiji.

Jatindra Nath Das: Early life

- Jatindranath Das was born on 27 October 1904 in Calcutta.
- When Das was 9 years old, his mother Suhasini Devi said goodbye to this world.
- Jatindra was raised by his father. During his studies, Gandhi started the non-cooperation movement and Jatindra also jumped into the freedom struggle for which the British government put him in jail.
- When the movement slowed down, Das was released along with the rest of the revolutionaries.

Jatindra then completed his further studies. However, even during that time the zeal and passion to liberate the country had not diminished.

Jatindra Nath Das: Greatly influenced by Revolutionary Ideology

- Jatin met revolutionary leader Shachindranath Sanyal who greatly influenced Jatindranath Das.
- He kept in constant touch with him. When Shachindranath formed the Hindustan Republican Association', Das played an important role in its formation and strengthening.
- Soon Jatindra achieved a crucial position in the organization with his sacrifice and courage.
- Apart from Shachindranath Sanyal, he came in contact with many other revolutionaries.
- During that time, he learned to make bombs. Further, in 1925, he was arrested and sent to jail for the Kakori incident.

Jatindra Nath Das: Aid to Bhagat Singh

- Jatindra Nath Das was one of the close friends of great revolutionaries like Bhagat Singh.
- He also had a lot of closeness with Subhash Chandra Bose. In 1928, Jatindra worked with Netaji to strengthen the party while in the Congress in Kolkata.
- Bhagat Singh was planning to destabilize British rule. He wanted to make himself heard to the deaf government by throwing bombs in the assembly, for this he chose Jatindranath Das who was invited to Agra to make bombs.
- Accepting the call of Bhagat, Jatindra came from Kolkata to Agra. The bomb made by him was used by Bhagat Singh and Batukeshwar Dutt in the assembly bomb case of 1929.

Jatindra Nath Das: 63-day-long fast

- On June 14, 1929, Jatin was arrested for revolutionary activities and was imprisoned in Lahore jail along with Bhagat Singh and others to be tried under the supplementary Lahore Conspiracy Case.
- In the Lahore jail, Das began a hunger strike along with other revolutionary fighters on June 15, 1929, demanding equality for Indian political prisoners with those from Europe

- Bhagat Singh and other imprisoned freedom fighters also undertook this hunger strike at the Lahore Central Jail. Jatindra Das had to face several atrocities and hardships done by the British authorities. These atrocities led to damaging of his lungs, and paralysis began to spread to his body parts. Still he continued his hunger strike.
- A jail committee was formed keeping in mind his condition into consideration and immense popularity amongst people. A proposal was made for his release but it was rejected by the committee.
- Jatindra Nath Das breathed his last in 1929 following a 63-day-long fast fighting for the rights of political prisoners at the young age of 25 years.
- Subhas Chandra Bose called him the 'young Dadhichee' of the nation (the ancient Indian sage who sacrificed his life for a noble cause).

Nobel Prize in Literature 2022

Nobel Prize in Literature 2022 was awarded to French author Annie Ernaux, known for her deceptively simple novels drawing on personal experience of class and gender.

- Nobel Prize in Literature 2022 was awarded to Ms. Ernaux "for the courage and clinical acuity with which she uncovers the roots, estrangements and collective restraints of personal memory".

Who is Annie Ernaux?

- Annie Ernaux is a French national. Annie Ernaux is 82 years old. Ernaux was born in 1940 and grew up in a working-class Catholic family in Yvetot, a small town in Normandy where her parents had a grocery store and cafe.
- She has authored more than 20 books, many of which have been school texts in France for decades.
- Her writings offer one of the subtlest, insightful windows into the social life of modern France.
- Personal experiences are the source for all of Ms. Ernaux's work and she is the pioneer of France's

"autofiction" genre, which gives narrative form to real-life experience.
- he experiences she wrote about in the 1980s and 990s- an unwanted pregnancy and abortion, her love affairs, her ambivalence about marriage and motherhood- were considered shocking by some social conservatives, but resonated deeply with a broad readership.

Nobel Prize in Literature

- The prestigious international Nobel Prize in Literature, awarded annually for outstanding work in literature.
- **Nobel Prize in Literature** was first given in 1901 by members of Swedish learned societies.
  - o It was first won by Sully Prudhomme, "in special recognition of his poetic composition, which gives evidence of lofty idealism, artistic perfection and a rare combination of the qualities of both heart and intellect".
- Interestingly, the Nobel Prize in Literature has been awarded 114 times to 118 Nobel Prize laureates between 1901 and 2021 for an entire body of work and not just one work.

List of Previous Nobel Prize in Literature Winners

- **Nobel Prize in Literature 2021:** It was awarded to Tanzanian novelist Abdulrazak Gurnah "for his uncompromising and compassionate penetration of the effects of colonialism and the fate of the refugee in the gulf between cultures and continents".
- **Nobel Prize in Literature 2020:** American poet Louise Gluck won the 2020 Nobel Prize for Literature.
  - o According to the jury, Louise Glück won it "for her unmistakable poetic voice that with austere beauty makes individual existence universal".
- **Nobel Prize in Literature 2019:** he Nobel Prize in Literature 2019 was awarded to Peter Handke "for an influential work that with linguistic ingenuity has explored the periphery and the specificity of human experience".
- **Nobel Prize in Literature 2018:** It was awarded to Polish writer Olga Tokarczuk "for a narrative

imagination that with encyclopedic passion represents the crossing of boundaries as a form of life".

- **Nobel Prize in Literature 2017**: It was won by Japanese-American writer Kazuo Ishiguro.
  - Jury said that his works have come to be a "great emotional force, and has uncovered the abyss beneath our illusory sense of connection with the world".
- **Nobel Prize in Literature 2016:** It was awarded to American singer-songwriter Bob Dylan "for having created new poetic expressions within the great American song tradition".
- **Nobel Prize in Literature 2015:** Svetlana Alexievich won the 2015 Nobel Prize in Literature "for her polyphonic writings, a monument to suffering and courage in our time."
- **Nobel Prize in Literature 2014:** It was awarded to Patrick Modiano "for the art of memory with which he has evoked the most ungraspable human destinies and uncovered the life-world of the occupation"
- **Nobel Prize in Literature 2013:** it was won by Alice Munro. The jury statement noted that she is the "master of the contemporary short story".
- **Nobel Prize in Literature 2012:** Chinese writer Mo Yan won The Nobel Prize in Literature 2012. According to the Swedish Academy, the writer "with hallucinatory realism merges folk tales, history and the contemporary".

Medicine Nobel for Work on Human Evolution

> Swedish scientist Svante Paabo won the Nobel Prize in medicine for his discoveries on human evolution that provided key insights into our immune system and what makes us unique compared with our extinct ancestors.

Svante Paabo: His work, explained

- Svante Paabo's seminal discoveries provide the basis for exploring what makes us uniquely human.
- Hominins refer to the now-extinct species of apes that are believed to be related to modern humans, as well as modern humans themselves.

- Paabo found that gene transfer had occurred from these now extinct Hominins to Homo sapiens following the migration out of Africa around 70,000 years ago.
- This ancient flow of genes to present-day humans has physiological relevance today, for example affecting how our immune system reacts to infections.
- Paabo established an entirely new scientific discipline, called paleogenomics that focuses on studying the DNA and genetic information of extinct hominins through reconstruction.

Relation between evolution and biology
• Paabo's discoveries have established a unique resource, which is utilized extensively by the scientific community to better understand human evolution and migration.
• We now understand that archaic gene sequences from our extinct relatives influence the physiology of present-day humans.

How did Paabo establish the linkage?

- Paabo extracted DNA from bone specimens from extinct hominins, from Neanderthal remains in the Denisova caves of Germany.
- The bone contained exceptionally well-preserved DNA, which his team sequenced.
- It was found that this DNA sequence was unique when compared to all known sequences from Neanderthals and present-day humans.
- Comparisons with sequences from contemporary humans from different parts of the world showed that gene flow, or mixing of genetic information among a species, had also occurred between Denisova and Homo sapiens – the species of modern-day humans.
- This relationship was first seen in populations in Melanesia (near Australia) and other parts of South East Asia, where individuals carry up to 6% Denisova DNA.
- The Denisovan version of the gene EPAS1 confers an advantage for survival at high altitudes and is common among present-day Tibetans.

What are the challenges in carrying out such research?

- There are extreme technical challenges because with time DNA becomes chemically modified and degrades into short fragments.
- The main issue is that only trace amounts of DNA are left after thousands of years, and exposure to the natural environment leads to contamination with DNA.
- Neanderthals were humans like us, but they were a distinct species called Homo Neanderthalensis.
- Together with an Asian people known as Denisovans, Neanderthals are our closest ancient human relatives. Scientific evidence suggests our two species shared a common ancestor.
- Current evidence from both fossils and DNA suggests that Neanderthal and modern human lineages separated at least 500,000 years ago. Some genetic calibrations place their divergence at about 650,000 years ago.
- The best-known Neanderthals lived between about 130,000 and 40,000 years ago, after which all physical evidence of them vanishes.
- They evolved in Europe and Asia while modern humans – our species, Homo sapiens – were evolving in Africa.

Sveriges Riksbank Prize 2022

On October 10, The Royal Swedish Academy of Sciences unveiled the names of the winners of the Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel 2022.

- The Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel 2022 was awarded to Ben S. Bernanke, Douglas W. Diamond, Philip H. Dybvig "for research on banks and financial crises".
- The Great Depression of the 1930s paralysed the world's economies for many years and had vast societal consequences. However, we have managed subsequent financial crises better thanks to research insights from this year's laureates. They have demonstrated the importance of preventing widespread bank collapses.

About Sveriges Riksbank Prize

- In conjunction with its tercentenary celebrations in 1968, Sveriges Riksbank (the central bank of Sweden) instituted a new award, "The Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel" on the basis of an economic commitment by the bank in perpetuity.
- The award is given by the Royal Swedish Academy of Sciences according to the same principles as for the Nobel Prizes that have been awarded since 1901.

Why research on banks and financial crises awarded nobel?
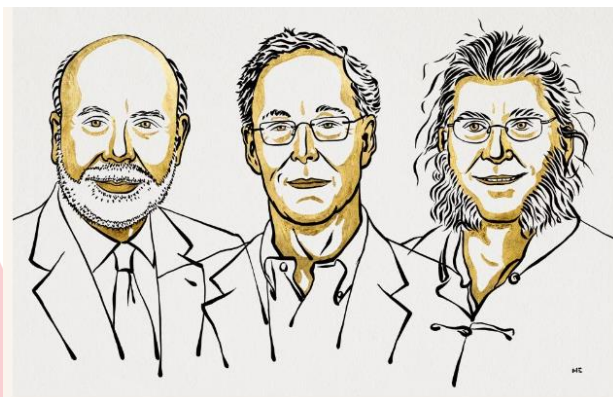
- This year the Sveriges Riksbank Prize/Nobel in Economics has been awarded to Bernanke, Diamond and Dybvig for their "research on banks and financial crises" undertaken in the early 1980s which have formed the foundations of what constitutes most modern banking research.
- Their analyses nearly four decades ago, still inform efforts to emphasise the vitality of banks to keep the economy functioning smoothly, the possible mechanisms to make them more robust amid crises periods, and how bank collapses can fuel a larger financial crisis that can rattle economies.
- Moreover, their work went beyond the realm of just theory and has had significant practical import in regulating financial markets and pre-empting or coping with crises.

Sveriges Riksbank Prize 2022: Why have they been picked now?

- The world economy is in the throes of a fresh crisis, just as it was emerging from the COVID-19 pandemic-induced haemorrhaging.

- The International Monetary Fund (IMF) has warned that the 'worst is yet to come' and recessionary conditions loom for many countries, as the war in Europe stretches on amid a 'cost of living' crisis vitiated by food and energy worries.
- The Nobel jury's picks may well be construed as a reminder to governments about lessons that would come in handy again as the current tumult unfolds with fears about impending shocks to the banking system.
- These economists' findings have been proven 'extremely valuable for policymakers, as is evident in the actions taken by central banks and financial regulators in confronting two recent major crises — the Great Recession [triggered by the global financial crisis between 2007-09 when shadow banks like Lehman Brothers collapsed] and the economic downturn that was generated by the COVID-19 pandemic,' it underlined.

Significance of research on banks and financial crises for India

- Indian households as well as policy makers are all too familiar with bank failures in the recent past, starting from the trouble at the privately run Global Trust Bank to freezes in withdrawals at several co-operative banks.
- Government and regulatory interventions to sustain faith in the banking system have included higher deposit insurance cover, facilitating takeovers of weaker lenders and steps to rein in bad loans.
- The key learnings from the Nobel Laureates' work seem to have been embraced by Indian authorities.
- But as the government pursues privatisation of banks while aiming to consolidate lenders to create larger entities to finance bigger investments and higher growth, utmost regulatory and legislative vigil is warranted to pre-empt any mishaps in the financial sector.

National Ayurveda Day

Recently, Ministry of Ayush Government of India in partnership with MyGov.in is organizing a short video making competition as a part of the Ayurveda Day 2022 celebrations. The participants can submit a video of not more than 03 minutes in Hindi and English languages on themes.

About Ayurveda Day 2022

- **About:** Ministry of AYUSH, Government of India celebrates Ayurveda Day every year on the occasion of Dhanwantari Jayanti (Dhanteras) since 2016.
- **Ayurveda Day Date:** This year **Ayurveda Day 2022** will be celebrated on 23rd October 2022.
- **Theme:** The theme for the celebration Ayurveda Day, 2022 is 'Har Din Har Ghar Ayurveda'. Various other themes of Ayurveda Day 2022
  - **Theme 1:** Ayurveda in my day.
  - **Theme 2:** Ayurveda in my kitchen.
  - **Theme 3:** Ayurveda in my garden.
  - **Theme 4:** Ayurveda in my farm.
  - **Theme 5:** Ayurveda in my food/ diet.
- **Objective:** Ayurveda Day is organized in order to raise awareness regarding this traditional medical system amongst the people of the country.
- **Participation:** The Ministry of AYUSH is celebrating this year in collaboration with all Ministries and departments of the Government of India, State governments, and UTs.
- **Winners:** Top 3 winners will be selected from each theme.
  - **Ist Prize:** Rs. 75,000/-
  - **IInd prize:** Rs. 50,000/-
  - **IIIrd prize:** Rs. 25,000/-

Ayurveda Day 2022- Timetable

Start Date	30th September 2022
End Date:	10th October 2022

National Ayurveda Day 2022

Event	National Ayurveda Day 2022
Date	October 23, 2022

Day	Sunday		Purpose of Celebration	To raise awareness regarding this traditional medical system amongst the people of the country.
Declared by	Ministry of AYUSH, Government of India			
Observed by	People of India			

The Editorials Corner

How to Deal with China's Blocking at the UN?

United Nations Secretary-General Antonio Guterres termed China's move of blocking the listing of Pakistan-based Lashkar-e-Taiba (LeT) terrorist Shahid Mahmood, a political one.

About the issue

*   Soon after blocking the proposal to designate Lashkar-e-Taiba (LeT) terrorist Shahid Mahmood as a global terrorist, China placed a technical hold on a proposal by India and the US at the United Nations to blacklist Hafiz Talah Saeed, the son of Lashkar-e-Taiba chief Hafiz Saeed.
*   It is the second time in less than two days that Beijing put a hold on the bid submitted by India and the US to designate a Pakistan-based terrorist as a global terrorist.

China's Blockade is a political strategy against India & US

*   China's decision to block two proposals by India and the United States to list Lashkar-e-Taiba (LeT) commanders on the United Nations Security Council's 1267 terror list is part of a well-worn pattern now.
*   Since June, New Delhi and Washington have made five such proposals, with China placing a hold on each.
*   This includes Jaish-e-Mohammad chief Masood Azhar's brother Rauf Asghar and LeT leaders Abdur Rahman Makki (Hafiz Saeed's brother-in-law), 26/11 handler Sajid Mir and the latest listing requests for Talha Saeed (Hafiz Saeed's son) and Shahid Mehmood, who is charged with recruitment and collection of funds for the terror group.
*   China's response to the requests of respective countries (India & China) has been consistently recalcitrant, placing hold upon hold on the proposals made, regardless of the figure it cuts in the global counter-terrorism space, using what

New Delhi has forcefully criticised as a "political bias" towards Pakistan to stymie the process.

What should India do?

Given the current situation, India has three clear choices:

Choice 1

The Government can abandon the effort until China can be persuaded to change its stance.

Choice 2

India can continue to bring terror listing proposals to the UN knowing they will be blocked by China, but showing that China is indeed misusing its power as a permanent member of the Security Council.

Choice 3

A third option is to open a diplomatic channel with China that focuses on the issue of global cooperation on terrorism, separate from other fractious bilateral issues, and to induce Beijing to reconsider its untenable position.

Opening a Diplomatic Channel should be the right approach

While the last option seems the most difficult, if not impossible, it must be remembered that China was persuaded to "grey list" Pakistan at the Financial Action Task Force (FATF) from 2012-2015, and from 2018 to the present, and remove its hold and allow the terror listing of Masood Azhar at the UNSC in 2019, after blocking such attempts since 2009.

Way forward

*   India has called upon the international community to deal with the menace of terrorism unequivocally and resolutely as China shielded two more operatives of the Lashkar-e-Taiba (LeT) based in Pakistan from the United Nations sanctions.
*   The Indian government will host a meeting of the United Nations Security Council's Counter-Terrorism Committee in Mumbai and New Delhi on October 28 and 29.
*   The meeting is likely to see India tacitly hitting out at China for blocking the moves to impose UN sanctions on terrorists based in Pakistan.

Conclusion

It is time for India to consider all its options with China to ensure justice for all the victims of the cross-border terrorism that has exacted a deep and lasting toll on the country.

A New Lease of LIFE for Climate Action

Vision of LIFE is taking flight as a global mission launched by Mr. Modi together with UN Secretary-General António Guterres, who has come to India to show his support.

- The Prime Minister and Secretary-General are calling on all consumers across the world to become "Pro Planet People" by 2027, adopting simple lifestyle changes that can collectively lead to transformational change.

What are the crises world is facing today?

- United Nations Development Programme's Human Development Report has warned that global human development measures have declined across most countries in the past two years.
- **Multiple Challenges:** Our world today is in turmoil, facing multiple, mutually reinforcing crises.
    o Even as we mount a fragile recovery from the COVID-19 pandemic, war fuels a devastating energy, food, and cost-of-living crisis.
- **Triple Planetary Crisis:** World today is facing the triple planetary crisis of climate change, pollution and biodiversity loss.
- **Increased Extreme Weather Events:** Nine of the warmest years on record have come in the past decade alone.
    o This year's record-breaking heat waves, floods, droughts, and other extreme forms of weather have forced us to face these increasingly devastating impacts.
- Climate change is a disruption multiplier in a disrupted world, rolling back progress across the global Sustainable Development Goals.

- **Unsustainable Production Method:** While governments and industry carry the lion's share of responsibility for responding to the crisis, we as consumers play a large role in driving unsustainable production methods.

Providing a Fresh Perspective

- **About:** LIFE, or Lifestyle for Environment, announced by Prime Minister Narendra Modi at COP26 in November 2021, brings a fresh and much-needed perspective.
- **Uniqueness:** Rather than framing climate change as a 'larger than life' challenge, LIFE recognises that small individual actions can tip the balance in the planet's favour.
- **Key Individual Actions:** Mindful choices cultivated by LIFE animate this spirit — actions such as-
    o Saving energy at home;
    o Cycling and using public transport instead of driving;
    o Eating more plant-based foods and wasting less; and
    o Leveraging our position as customers and employees to demand climate-friendly choices.
- **Use of Nudge theory:** Many of the goals of LIFE can be achieved by deploying 'nudges', gentle persuasion techniques to encourage positive behaviour.
- The LIFE mission also recognises that accountability is relative to contribution.
    o Emissions across the poorest half of the world's population combined still fall short of even 1% of the wealthiest.
    o Each 'Pro Planet' stakeholder is nudged according to differentiated approaches.

UN Environment Program (UNEP): Countering Climate Change

- The UN Environment Programme (UNEP) employs proven nudging techniques such as-
    o Discouraging food waste by offering smaller plates in cafeterias;
    o Encouraging recycling by making bin lids eye-catching; and
    o Encouraging cycling by creating cycle paths.

- According to the UNEP, more than two-thirds of greenhouse gas emissions can be attributed to household consumption and lifestyles.
  - These are the urgent cuts to global emissions we need can only be achieved through widespread adoption of greener consumption habits.

What is India's Track Record for Promoting LIFE movement?

- LIFE resonates with the global climate justice India has rightfully called for- highlighting enhanced obligations those in developed countries bear, to support climate adaptation and mitigation for those most affected, yet least responsible.
- The average carbon footprint of a person in a high income country is more than 80 times higher than that of a person in a least developed country.
  - It is common sense and only fair to call on the developed world to shoulder a proportionate share of this transition.
  - In the words of Mahatma Gandhi, "the world has enough for everyone's need, but not enough for everyone's greed."
- India has a proven track record translating the aspirations of national missions into whole-of-society efforts.
  - The success of the Swachh Bharat Mission, which mobilised individuals and communities across socio-economic strata to become drivers of collective good health and sanitation is an example.

LIFE for Climate Action- India's Leadership at Global Stage

Factors Strengthening India's Leadership at Global Stage:

- The Panchamrit targets announced by Mr. Modi at COP26,
- Support for the International Solar Alliance,
- The Coalition for Disaster Resilient Infrastructure and South-South cooperation platforms,
- The world's fifth largest economy with vibrant businesses making enormous investments in renewables and electric mobility,
- World class public digital tech stack, India brings scale, expertise and legitimacy;

- A well-positioned founding UN Member State bridging the G20 and G77.

Conclusion

- With COP27 next month, and India set to assume the G20 Presidency weeks after, followed by the halfway mark to Agenda 2030 next year, India is all set to give a new lease of LIFE to climate action.

An Unkind Hike

Recently, the Government increased the returns on a handful of small savings instruments for the ongoing October to December quarter by 0.1 to 0.3 percentage points.

- However, Popular investment avenues for the middle class such as the Public Provident Fund (PPF) and the National Savings Certificate were left out.

Issues with Small Savings Instruments

- **Lack of Market Determination:** On paper, the returns on these instruments are to be reset on a market-determined basis, with a spread of 0 to 100 basis points (one basis point equals 0.01%) over the yields on government securities with comparable maturities.
  - That this has not been adhered to is evident even at a cursory glance, given the long pause between rate changes.
- **Increase in Securities' yield:** Following interest rate hikes this year to curb inflation, government securities' yields have been shooting up.
- **Low Interest rate:** This month, the Reserve Bank of India (RBI) said that interest rates offered on various schemes in the current quarter are 44 to 77 basis points below the formula-implied rates.
  - The PPF, for instance, should have been earning 7.72% this quarter instead of the 7.1% accruing now.
- **Poor Remedy against Rising inflation:** For households that have been grappling with 6%-plus inflation since January, punctuated by a few months of 7%-plus price rise, these meagre hikes are far from enough to lift sentiment.

o This was the first change in these schemes' rates in 27 months- after a sharp cut in the range of 0.5 and 1.4 percentage points across schemes introduced in April 2020.

- Politically Driven: The last time rates were hiked was in January 2019, just ahead of the Lok Sabha election.
  o In March 2021, the Government had announced further cuts ranging from 0.4% to 1.1%, but withdrew the decision overnight, citing an 'oversight' amid a poll campaign for five States.
  o However, even as a token gesture to voters in upcoming polls, this latest tweak in small savings rates does not make the cut.

We Need a Forest-led COP27

In September, a study published in the journal Science said earth may have already passed through five dangerous tipping points due to the 1.1°C of global heating caused by humanity to date.

Role of Technology in countering Climate Change

- **Demand for Transfer of Technology:** Calls for developing and transferring technologies to support action on climate change have become louder worldwide.
- **Overdependence on Technology:** Technology has become a survival strategy for our species, but the degree of techno-determinism that exists in the strategy to reverse climate change is alarming.
  o Technology alone is unprepared to deal with the challenge, which requires a societal overhaul and a zero emission strategy.
- History is on the side of technological innovation. Norman Borlaug, for instance, ushered in the Green Revolution, which fed billions of people and increased yields.
  o But we may need a few million climate Borlaugs to tackle the problems staring at us.

Technological Optimism in UNFCCC COP 26

- COP26 at Glasgow also fuelled technological optimism. There was an observation that every technological solution discussed at COP26 depends on just three resources:
  o Nelectricity (non-emitting electricity generated by hydropower, renewables or nuclear fission),
  o Carbon capture and Storage (CCS) or
  o Biomass.
- **Nelectricity:** We currently have 4kWh/day of nelectricity per person. But the COP26 plans require 32 (range 16-48).
- **Carbon capture and Storage (CCS):** We currently have 6kg of CCS per person per year, but the COP26 plans require 3,600 (range 1,400-5,700).
- **Biomass:** We eat 100kg plant-based food per person each year, but producing enough bio-kerosene to fly at today's levels requires 200kg of additional harvest.

Associated Concerns with Technological Optimism

- Tech-centric mitigation conversations leave forest economies and subjects such as conservation and forests, which are the best carbon removal instruments, to the ideological fringes of climate conversation.
- The total demand for those resources required by the plans discussed at COP26 cannot be met by 2050.
  o There is no possibility that our supplies of these will be near the levels required by the plans discussed at COP26.

Role Forests in Countering Climate Change

- Forests are home to 80% of terrestrial wildlife. They are at the intersection of the climate change crisis and the biodiversity crisis.
  o Hence, forests are best suited to help in countering our fight against climate change.
- Forests absorb a net 7.6 billion metric tonnes of CO2 a year. A new study has found that their biophysical aspects have a tendency to cool the earth by an additional 0.5%.
- The conservation of forests, along with other nature-based solutions, can provide up to 37% of the emissions reductions needed to tackle climate change.
- The Dasgupta Review-Independent Review on the Economics of Biodiversity reports that green infrastructure (salt marshes and mangroves) are 2-5 times cheaper than grey infrastructure (breakwaters).

- Another study estimated that the annual gross carbon emissions from tropical tree cover loss between 2015 and 2017 was equivalent to 4.8 billion tonnes.
  - This causes more emissions each year than 85 million cars do in their lifetime.
- In 2019, approximately 34% of total net anthropogenic greenhouse gas emissions came from the energy supply sector, 24% from industry, 22% from agriculture, forestry and other land use, 15% from transport and 6% from buildings.

Way Forward

- The IPCC Land Report estimates that land serves as a large CO2 sink.
- There is a growing body of evidence that a large proportion of the required removals could be achieved by conserving natural sinks, improving biodiversity protection, and restoring ecosystems.
- Preserving earth's cyclical processes by protecting terrestrial ecosystems and natural sinks and transformative agricultural practices under the leadership of indigenous people.
  - Local communities are a far more equitable and cost-effective way of tackling the climate crisis than it is being done now.

Conclusion

- We need to realise that the climate crisis is just a symptom; our real problem is that human consumption and activity have exceeded the regenerative capacity of our planet.
- Technology, at best, can assist us, not lead us, on the pathway to a sustainable, regenerative and equitable world.

Food for All

This year's World Food Day (October 16) has been a reminder to ensure that the most vulnerable people within our communities have easy access to safe and nutritious food.

- The promise to end hunger by 2030 is possible only through collective and transformational action to strengthen agri-food systems; better production, better nutrition, a better environment, and a better life.

Food for All: Context

- Globally, food and nutrition security continue to be undermined by the impacts of the COVID-19 pandemic, climate change, spiralling food inflation, conflict, and inequality.
- Today, around 828 million people worldwide do not have enough to eat, and over 50 million people are facing severe hunger.

What Hunger Hotspots Outlook (2022 23) says about the food crisis?

- Hunger Hotspots Outlook (2022 23) a report by the Food and Agriculture Organization of the United Nations (FAO) and the World Food Programme (WFP) — foebodes escalating hunger, as over 205 million people across 45 countries will need emergency food assistance to survive.

Food for All: Importance of FAO and World Food Day

- Since 1948, the FAO has continued to play a catalytic role in India's progress in the areas of crops, livestock, fisheries, food security, and management of natural resources through the promotion of sustainable practices.
- World Food Day is a reminder to 'Leave No One Behind', and is an opportunity — perhaps the most urgent one in recent history — for nations to strengthen food security nets, provide access to essential nutrition for millions and promote livelihood for vulnerable communities.

Food for All: Challenges before India to increase its Food production?

- India is now one of the largest agricultural product exporters.
- During 2021-22, it recorded $49.6 billion in total agriculture exports — a 20% increase from 2020-21.
- However, recent climate shocks have raised concerns about India's wheat and rice production over the next year.
- By 2030, India's population is expected to rise to 1.5 billion. Agri-food systems will need to provide for and sustainably support an increasing population.

Food for All: India's greatest contributions to equity in food

- National Food Security Act (NFSA) 2013 which anchors the Targeted Public Distribution System (TPDS), the PM POSHAN scheme (earlier known as the Mid-Day Meals scheme), and the Integrated Child Development Services (ICDS).
- Today, India's food safety nets collectively reach over a billion people.
- The WFP works with State and national governments to strengthen these systems to reach the people who need them most.
- The Government continues to take various measures to improve these programmes with digitisation and measures such as rice fortification, better health, and sanitation.
- Food safety nets and inclusion are linked with public procurement and buffer stock policy — visible during the global food crisis (2008-12) and the COVID-19 pandemic fallout, whereby vulnerable and marginalised families in India continued to be buffered by the TPDS which became a lifeline.
- An International Monetary Fund paper titled 'Pandemic, Poverty, and Inequality: Evidence from India' asserted that 'extreme poverty was maintained below 1% in 2020 due to the Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY).

Food for All: How India led the global conversation on reviving millet production?

- India has led the global conversation on reviving millet production for better lives, nutrition, and the environment, including at the UN General Assembly, where it appealed to declare 2023 as the International Year of Millets.
- It is the world's leading producer of millets, producing around 41% of total production in 2020.
- The national government is also implementing a Sub-Mission on Nutri-Cereals (Millets) as part of the National Food Security Mission.
- State-level missions in Odisha, Madhya Pradesh, and Andhra Pradesh are a testament to India's resolve to revive these indigenous crops.

Importance of Millet

- Millet conservation and promotion contribute to addressing food security, improved nutrition, and sustainable agriculture, which aligns with the Sustainable Development Goals (SDG) agenda.
- Millet production has been proven to enhance biodiversity and increase yields for smallholder farmers, including rural women.
- The International Fund for Agricultural Development's (IFAD's) Tejaswini programme with Madhya Pradesh showed that growing millets meant a nearly 10 times increase in income (₹1,800 per month in 2013-14 to ₹16,277 in 2020-21), with better food security because millet crops were not impacted by excessive rainfall.
- A study by the FAO on millets in India emphasises strengthening value chains for enhancing nutritional benefits and increasing farmers' incomes.

Way forward

- It is important to place a greater focus on climate adaptation and resilience building.
- There is increased recognition to move away from conventional input-intensive agriculture towards more inclusive, effective, and sustainable agri-food systems that would facilitate better production.
- There have also been a series of initiatives by the Government of India on better production and improving food access, especially for vulnerable populations.
- Soil degradation by the excessive use of chemicals, non-judicious water use, and declining nutritional value of food products need urgent attention.
- India's upcoming G20 presidency is an opportunity to bring food and nutrition security to the very centre of a resilient and equitable future.

Conclusion

It is clear that the path to a better life resides in transforming food systems, making them more resilient and sustainable with a focus on equity, including by incentivising the protection of the commons; enhancing food and nutrition security and

social protection networks, including by providing non-distortionary income support; promoting production and consumption of nutritious native foods.

Going Green

Introduction

Tamil Nadu is yet another state who struck out clearly for a future that would be climate-conscious, and greener, with a series of announcements this year — in the form of government orders and via the Budget.

- Ensuring sustainable development requires more than good intentions and verbal commitments. And yet, commitment is that crucial first step.

What is Green Economy?

- As envisaged by the United Nations Environment Programme (UNEP), a green economy is one whose growth in income and employment is driven by public and private investments that reduce carbon emissions and pollution, enhance energy and resource efficiency, and prevent the loss of biodiversity and ecosystem services.

- These investments need to be catalysed and supported by targeted public expenditure, policy reforms and regulation changes.

- The key issues involved in promoting a green economy therefore are:
  - Improved human well-being
  - Social equity,
  - Significantly reducing environmental risks and ecological scarcities.

Key Initiatives taken by T.N. Government

- Getting the Ramsar Site declaration for a record number of ecological zones as a well-planned and implemented initiative.

- T.N. government declared its intention to create green parks in 100 villages, that would cater to local requirements too.

- T.N. government Proposed an elephant reserve at Agasthiyarmalai in the south, a dugong

conservation park in Palk Bay, a new bird sanctuary at Tiruppur, and establishing India's first-ever wildlife sanctuary for the slender loris in Dindigul and Karur district.

- The T.N. government recently appointed governing council on Climate Change, which has many experts, is an example of good intent followed by a solid tool to aid implementation.

- The setting up of a Green Climate Fund corpus is a further indication of commitment.

- Additionally, a special purpose vehicle, Tamil Nadu Green Climate Company, has been set up to advise on managing three important missions — Climate Change, Tamil Nadu Green and Wetlands.

- It will provide policy directives to the Climate Change Mission, advise on climate adaptation and mitigation activities, provide guidance to the State Action Plan on Climate Change and provide strategies for implementation.

The National Action Plan on climate change (NAPCC)

- The National Action Plan on climate change (NAPCC) encompasses eight missions in the specific areas of Solar Energy, Enhanced Energy Efficiency, Sustainable Habitat, Water, Sustaining the Himalayan Eco-system, Strategic Knowledge for Climate Change, Green India, and Sustainable Agriculture.

- These specific areas tackle core issues pertaining to climate change, outlining steps to simultaneously advance India's development and climate change related-objectives of adaptation and mitigation.

- NAPCC is guided by the principles - (i) protecting the poor and vulnerable sections of society through an inclusive and sustainable development strategy, sensitive to climate change; (ii) achieving national growth through ecological sustainability (iii) devising efficient and cost-effective strategies for end use Demand Side Management (iv) deploying appropriate technologies for both adaptation and mitigation of greenhouse gases emissions (v) engineering new and innovative forms of market, regulatory and voluntary mechanisms to promote sustainable development

(vi) effecting implementation of programmes by including civil society and local government institutions and through public-private partnership; and (vii) welcoming international cooperation for research, development, sharing and transfer of technologies.

- Under the NAPCC Government has initiated several activities, schemes, programmes under the national Missions.
- The activities in the areas of solar energy, energy efficiency and forestry sector are linked with reduction in carbon emissions. Other Missions also support carbon emissions reduction as co-benefit.

National Mission for a Green India (GIM)
• National Mission for a Green India (GIM) is one of the eight Missions under the National Action Plan on Climate Change.
• It aims at protecting, restoring and enhancing India's forest cover and responding to Climate Change.
• The target under the Mission is 10 mha on forest and non-forest lands for increasing the forest/tree cover and to improve the quality of existing forest.

Way Forward

- Pursuing climate change has not been easy, not now, not ever.
- As per UN data, only 26 of 193 countries that agreed to enhance climate change action last year have followed up with concrete plans. For, indeed, the challenges are daunting.
- Environmental evangelism will have to drive these projects, so that the passion, urgency and seriousness that the parent institution (Environment and Climate Change department), brings to the table are absorbed by other departments.
- All modern states are beset by challenges in the sectors of energy transition, mobility transition and agricultural transition. So, is crucial to build capacity capable of fashioning local solutions, and ensure that the announcements are all implemented, in a time-bound manner.

Conclusion

While these and similar incremental efforts made possible with the political will of several state governments and the central government, if implemented well, will lend themselves to a visibly greener landscape.

United Against Terrorism

For the first time since 2015, the United Nations Security Council Counter-Terrorism Committee held a special meeting away from Headquarters, in Mumbai and New Delhi, India, on 28 and 29 October.

- The meeting focused on contemporary challenges from online radicalization and terror recruitment, terror financing through crypto-currency and virtual assets, unmanned aerial system and other emerging technologies.

How UNSC Counter-Terrorism Committee was formed?
• Countering the scourge of terrorism has been on the agenda of the United Nations for decades.
• In the aftermath of the 11 September attacks against the United States in 2001, the Security Council unanimously adopted resolution 1373 (2001), which for the first time established a dedicated Counter-Terrorism Committee (CTC) of the Council.
• The CTC is assisted by an Executive Directorate (CTED), which carries out its policy decisions and conducts expert assessments of the 193 United Nations Member States.

Members of the UNSC Counter-Terrorism Committee (CTC)

The Committee is composed of 15 Member States:
1. Albania
2. Brazil
3. China
4. France

5. Gabon
6. Ghana
7. India
8. Ireland
9. Kenya
10. Mexico
11. Norway
12. Russian Federation
13. United Arab Emirates
14. United Kingdom
15. United States

Which are the five points listed by India for the consideration of the UNSC-CTC?

- Effective and sustained efforts to counter terror-financing.
- Normative efforts of the UN need to be coordinated with other fora like the Financial Action Task Force (FATF).
- Make sure that the Security Council's sanctions regime is not rendered ineffective because of political reasons.
- International cooperation and concerted actions against terrorists and their sponsors including the dismantlement of terrorist safe havens, etc. are critical imperatives.
- Recognise these linkages and strengthen multilateral efforts to break against terrorism's nexus with a transnational organised crime like arms and illicit drug trafficking.

How important was it for India to host the UNSC-CTC meeting?

- India's decision to host the United Nations Security Council's Counter-Terrorism Committee (CTC) is an important marker of the Government's ongoing effort to highlight terrorism issues at a time the global body has been more focused on the Ukraine war.
- Held in Mumbai and Delhi, it brought UN officials, and ministers and diplomats from all members of the Security Council (UNSC), to discuss challenges to the global counter-terrorism architecture.
- During the UNSC conference, the attendees heard not only from victims of the attacks but also voice samples of LeT recruiter Sajid Mir directing terrorists during the attacks.

India Highlighted the case of 26/11

o In Mumbai, the spotlight was on the 26/11 attacks. Despite the global nature of the terror targets, India has had an uphill battle since 2008 in international cooperation to pursue the case, and in bringing the lone surviving attacker, Ajmal Kasab, through a full trial and execution.

How parties responded on 26/11?
Pakistan

- After a brief period of information sharing, Pakistan has dragged its feet on prosecuting even LeT Commanders Hafiz Saeed, Zaki-ur-Rahman Lakhvi and others that its Federal Investigative Agency held responsible for the attacks.
- Mir, now in a Pakistani prison on terror financing charges, after Pakistan's grey-listing at the Financial Action Task Force mandated action, has not been tried.

The U.S.

- The U.S., which has cooperated in many other ways with India on terrorism, convicted conspirators David Headley and Tahawwur Rana for the attacks, but has refused to extradite them.

China

- China continues to block designating LeT leaders on the UNSC 1267 terror list, a problem External Affairs Minister S. Jaishankar and U.S. Secretary of State Antony Blinken specifically mentioned at the conference.

Key focus areas of the UNSC-CTC

- In Delhi, the CTC focus was on online radicalisation and terror recruitment, terror financing through crypto-currency and virtual assets, and unmanned aerial system use including drones for terror strikes, transporting drugs and arms.
- The deliberations led to the "Delhi Declaration on countering the use of new and emerging technologies for terrorist purposes".

What is Delhi declaration during UNSC-CTC Meet?

- The committee, with representation from all 15 UNSC members, besides counter-terror experts, adopted "Delhi Declaration" at the end of the two-day special conclave.

- It called on member countries to ensure zero tolerance towards terrorist activities and vowed to deal with the menace more vigorously.
- The declaration also called for "urgent action" to counter terrorism through the full and effective implementation of various UN resolutions and reaffirmed that terrorism in all forms constituted "one of the most serious threats" to international peace and security.
- It was against associating terrorism with any religion, nationality, civilisation or ethnic group, and called on member states to continue their efforts towards the Comprehensive Convention on International Terrorism.
- It strongly condemned the continued flow of weapons, military equipment, drones and IEDs to and between ISIL, Al-Qaida, their affiliates and associated individuals and groups. At the same time, the committee felt human rights and fundamental freedoms must not be trampled under the guise of fighting terrorism.

Way Forward

- While India has only two months left in its current elected tenure at the UNSC, the Government appears to be making efforts to keep up the momentum from the CTC meet; it will host an international **"No Money for Terror" conference (November 18-19)**, and a **UNSC special briefing on challenges to global counter-terrorism efforts (December 15-16)**.
- As the Indian experience with 26/11 has shown, the global community has often been long on statements but short on cooperative action, and New Delhi will have to keep pressing the point that terrorism remains

Conclusion

Terrorism is the "gravest threat to humanity" and the international community should rise above political differences and India should continuously lead & push the world to defeat the challenge of terrorism.

Sequence of Implementation, EWS Quota Outcomes

Forms of Reservation System in India

The reservation system in India takes two forms:

- Vertical reservation (VR), which until 2019 was defined for stigmatised and marginalised social groups (SCs, STs and OBCs); and
- Horizontal reservation (HR), applicable to cross-cutting categories such as women, people with disability (PWD), domicile, etc.

As long as the VR system was social group-based, no individual was eligible for multiple VR categories, since no individual can belong to multiple caste or tribal groups.

Evolution of Quota System in India leading up to EWS Quota

- The original intent of the reservation policy in newly independent India was to level the playing field for the most marginalised sections, those stigmatised and discriminated against on account of their birth into specific caste and tribal groups.
- While these groups were also economically deprived, that was not the main rationale for instituting compensatory discrimination in favour of these groups.
- Over the decades, the instrument of reservation has expanded to include more groups under its ambit, leading to furious debates both about the general principle of affirmative action and about which groups deserve to be beneficiaries.
- These disputes have resulted in complex legal cases, with the rulings providing the nuts-and-bolts mechanics that guide the implementation of the reservation policy on the ground.

103rd Constitution Amendment Act in 2019

The Parliament of India amended the following sections of the constitution through the 103rd Constitutional Amendment Act 2019 to bring EWS

quota for economically weaker sections of the society.

- Article 15 (6): It was added in the constitution of India with an aim to provide reservations to economically weaker sections for admission to educational institutions including private educational institutions, whether aided or unaided by the State, other than the minority educational institutions referred to in clause (1) of Article 30.
  - o The 103rd Constitutional Amendment Act aims to provide reservation to those who do not fall in articles 15 (5) and 15(4).
  - o Article 15(4) and 15(5) of the Indian Constitution provides reservation to SCs, STs and OBCs.
- Article 16 (6): It was added in the constitution to provide reservations to people from economically weaker sections in government posts.
- Criteria for deciding EWS quota beneficiaries: A provision in the 103rd Constitutional Amendment states that- "economic weakness" shall be decided on the basis of "family income" and other "indicators of economic disadvantage."

Associated Concerns with EWS Quota
- The 103rd Constitution Amendment Act in 2019 fundamentally altered the original raison d'être of reservations by opening VR to groups that are not defined in terms of hereditary social group identity (caste or tribe).
- o EWS status is transient (that individuals can fall into or escape out of), but social groups are permanent markers of identity.
- While this meant that in principle, an individual could belong to two VR categories (say, SC and EWS), the amendment explicitly removed individuals who are already eligible for one VR (SC, ST, or OBC) from the scope of EWS reservations.
- o As a result of this exclusion, an individual could still be only eligible for at most one vertical category.
- Exclusion of SCs, STs, OBCs from the scope of EWS reservation was immediately challenged in court on the grounds that it violated individual right to equality (that roughly corresponds to Articles 14-18 of the Indian Constitution).

Implications of Overlapping VR Categories and Ambiguity
- When VR categories are mutually exclusive, i.e., no individual can be a member of multiple vertical categories, it is completely immaterial in what sequence vertical categories are processed in relation to each other.
- However, if individuals can belong to two vertical categories, the relative processing sequence of vertical categories becomes very important.
- EWS-first: Under the current income limit for EWS reservation, more than 98% of the population qualifies, i.e., almost everyone is eligible for EWS reservation.
  - o If EWS reservations are filled first, the outcome would be the same as treating EWS positions as open positions.
  - o This would effectively end up making the EWS reservation redundant.
  - o Since the richest applicants are not eligible for EWS, the actual outcome would be slightly different, but not a whole lot as the richest 2% may not even apply to public institutions where quotas are applicable.
- EWS-last: If EWS positions are allocated after all other VR positions are filled, this issue will not arise.
  - o Now, while all individuals with incomes lower than the EWS limit are equally eligible for EWS positions (which is still effectively all individuals), the system awards the EWS positions to eligible individuals who have highest merit scores.
  - o But since some of the higher score individuals from SCs, STs and OBCs would be admitted under their respective quotas, this sequencing will make EWS positions more accessible to members of forward castes.

Conclusion
Given the enormity of the unemployment situation, as well as the importance of addressing social cleavages, the urgency of working out an optimal implementation strategy cannot be overstated.

Exhuming New Light

The Nobel Prize for Medicine this year will be awarded to Svante Pääbo, a Swedish geneticist and a director of the Max Planck Institute for Evolutionary Anthropology in Leipzig, Germany.

Nobel Prize for Medicine 2022- Svante Pääbo

- Science being of an increasingly collaborative and competitive nature, recent trends in Nobel Prizes suggest that there are usually multiple winners for every prize.
- It is a tribute to the originality and revolutionary implications of Pääbo's research that in a world perennially reshaped by advances in biology, he has been chosen as the lone winner of the Medicine or Physiology Prize this year.
  - This is something not witnessed since 2016.

Svante Pääbo's Research on Human Evolution

- Pääbo brought Neanderthals- believed to be among the many human-like species and losers of the evolutionary race- to the centre on the question of human evolution.
- Thanks to his work, it is now known that Europeans and Asians carry anywhere between 1%-4% of Neanderthal DNA.
- Thus, a large fraction of humanity will be influenced in terms of propensity to disease and adaptability to conditions by a species that evolved, like humans, in Africa, but 1,00,000 years earlier.
- Pääbo demonstrated this by pioneering and perfecting techniques to extract DNA from fossil remains, a herculean task as they contain too little and are easily contaminated.
- By building on these methods, Pääbo and his colleagues eventually published the first Neanderthal genome sequence in 2010.
- To put that in perspective, the first complete sequence of the human genome was only completed in 2003.

- Comparative analyses with the human genome demonstrated that the most recent common ancestor of Neanderthals and Homo sapiens lived around 8,00,000 years ago;
  - That both species frequently lived in proximity and interbred to an extent that the Neanderthal genetic stamp lives on.
- In 2008, a 40,000-year-old fragment from a finger bone yielded DNA that, in Pääbo's lab, turned out to be from an entirely new species of hominin called Denisova. This was the first time that a new species had been discovered based on DNA analysis.
- Further analysis showed that it too had interbred with humans and 6% of human genomes in parts of South East Asia are of Denisovan ancestry.

Conclusion

- These discoveries throw up philosophical questions on what it means to be a 'species'.
- Pääbo's win must inspire future biologists in India to pursue deep questions and use science to shed new light rather than compartmentalise themselves in an academic straitjacket.

Does India Need a Population Policy?

Earlier this year, the United Nations published data to show that India would surpass China as the world's most populous country by 2023.

- According to the 2018-19 Economic Survey, India's demographic dividend will peak around 2041, when the share of the working age population is expected to hit 59%.

What United Nations' World Population Prospects (WPP), 2022 tell about India?

- The United Nations' World Population Prospects (WPP), 2022, forecasts India becoming the most populous country by 2023, surpassing China, with a 140 crore population.
- This is four times the population India had at the time of Independence in 1947 (34 crore).
- Now, at the third stage of the demographic transition, and experiencing a slowing growth rate

- due to constant low mortality and rapidly declining fertility, India has 17.5% of the world's population.
- As per the latest WPP, India will reach 150 crore by 2030 and 166 crore by 2050.
- In the 1960s, India had a population growth rate of over 2%.
- At the current rate of growth, this is expected to fall to 1% by 2025.
- However, there is a long way to go for the country to achieve stability in population. This is expected to be achieved no later than 2064 and is projected to be at 170 crore (as mentioned in WPP 2022).

Do we need a population policy?
- India has a very good population policy, which was designed in 2000. And States also have their population policies.
- We just need to tweak these and add ageing to our population policy focus. But otherwise, the national population policy is the right policy.
- We need more investments in family planning and need to think about the population more broadly.

What is demographic dividend?
According to United Nations Population Fund (UNFPA), demographic dividend means "The economic growth potential that can result from shifts in a population's age structure, mainly when the share of the working-age population (15 to 64) is larger than the non-working-age share of the population (14 and younger, and 65 and older)".

The demographic dividend of India
Growth of working age population
- In the last seven decades, the share of the working age population has grown from 50% to 65%, resulting in a remarkable decline in the dependency ratio (number of children and elderly persons per working age population).

WPP 2022 report
- As in the WPP 2022, India will have one of the largest workforces globally, i.e., in the next 25 years, one in five working-age group persons will be living in India.

- This working-age bulge will keep growing till the mid-2050s, and India must make use of it.

Why should India plan for the elderly and Ageing?
- Ageing is going to be an issue for us. We need to figure out how to address ageing in the context of changing families and the nature of state support in India and create conditions in which the elderly population can have a healthy and happy life.
- In the case of the elderly, the estimates show that 12% of India's total population by 2025 is going to be the elderly.
- Every fifth Indian by 2050 will be over the age of 65.
- So planning for these segments merits equal consideration.

What kind of population policy do we need?
- We need a policy that supports reproductive health for individuals.
- We also need to start focusing on other challenges that go along with enhancing reproductive health, which is not just the provision of family planning services.
- We need to change our discourse around the population policy. Although we use the term population policy, population control still remains a part of our dialogue.
- We need to maybe call it a policy that enhances population as resources for India's development, and change the mindset to focus on ensuring that the population is a happy, healthy, productive.
- Perhaps it is time to think about getting rid of some of the archaic notions around population control, which continue to persist.
- Our arguments and discussions have not gone beyond the two-child norm. The two-child norm indicates a coercive approach to primarily one community.

Conclusion
There are too many myths and misconceptions around population issues, which lead to this discourse, which takes away attention from doing all the necessary things. We need to address them in larger perspective.

Practice Questions

SET 01

1. Consider the following statements
   1. India is the largest producer of millet in the world.
   2. Currently, India is the second largest exporter of millet in the world after China.

   Which of the statements given above is/are correct?
   (a) 1 only   (b) 2 only
   (c) Both 1 and 2   (d) Neither 1 nor 2

2. Operation **"SEWA, "Operation Matrishakti"** and **"Operation Dignity"** were conducted by which of the following?
   (a) Indian Coast Guard
   (b) Railway Protection force
   (c) CBI
   (d) Enforcement Directorate

3. The National Programme for Civil Services Capacity Building (NPCSCB) or Mission Karmyogi was launched with the objective of
   (a) Changing the syllabus of the UPSC examination for civil services.
   (b) Enhancing governance through civil service capacity building.
   (c) Changing the system of lateral entry in higher bureaucracy.
   (d) Providing a special focus on local governance for freshly recruited bureaucrats.

4. Recently The Nobel Prize in physics for 2022 has been announced for research work on
   (a) discovery of an exoplanet orbiting a solar-type star
   (b) Bell inequalities in association with quantum mechanics
   (c) Black hole formation and robust prediction of the general theory of relativity"
   (d) groundbreaking inventions in the field of laser physics"

5. Which of the following statements regarding Red Sanders is incorrect?
   (a) Red Sandalwood is native and endemic to India and can only be found in the Seshachalam hills of the Eastern Ghats region of Andhra Pradesh
   (b) It is listed as an Endangered species by the IUCN.
   (c) The export of Red Sanders from India is prohibited as per the Foreign Trade Policy.
   (d) All are correct

6. Hind Swaraj or Indian Home Rule is a book written by
   (a) Mahatama Gandhi
   (b) Dr BR Ambedkar
   (c) Gopal Krishan Gokhale
   (d) Aurobindo Ghosh

7. Consider the following statements regarding the SAMARTH mission
   1. It aims to reduce stubble burning and to reduce the carbon footprint of thermal power plants
   2. Currently, all thermal power plants in the country are mandatory to use 5 to 10% biomass along with coal for power production.
   3. Samarth Mission is launched by the Ministry of Renewable energy

   Which of the statements given above is/are correct?
   (a) 1 and 2   (b) 2 and 3
   (c) 1 and 3   (d) 1,2 and 3

8. Desertification and Land Degradation Atlas of India is published by which of the following department/organisation?
   (a) NITI Aayog
   (b) Space Application Centre, ISRO
   (c) National Disaster Management Authority (NDMA)
   (d) MoEFCC

9. Consider the following statements regarding Pradhan Mantri Awas Yojana-Gramin
   1. Women are the Majority of the beneficiaries of the scheme
   2. This scheme was launched by the Ministry of Rural Development.

   Which of the statements given above is/are correct?
   (a) 1 only   (b) 2 only
   (c) Both 1 and 2   (d) Neither 1 nor 2

10. Which of the following are bordered by the Baltic Sea
    1. Estonia
    2. Russia
    3. Poland
    4. Germany

    Select the correct code from below:
    (a) 1,2 and 3   (b) 2,3 and 4
    (c) 2 and 3   (d) 1,2,3 and 4

Solutions

1. **(a):** Currently, India is the fifth largest exporter of millets in the world, according to 2020 data, with exports continuously increasing at around 3% CAGR in the last five years ending with 2020.

   India is the world leader in the production of millets with the share of around 41% of total world production in 2020

   The top three importers of millets from India in 2020-21 were Nepal (USD 6.09 million), UAE (USD 4.84 million) and Saudi Arabia (USD 3.84 million)

2. **(b):** Railway Protection Force (RPF) undertook many focused operations namely Operation "SEWA", Operation "Dignity", Operation "Nanhe Fariste", Mission "Jeewan Raksha" and Operation "Matrishakti" during the month of September 2022.

   RPF personnel, especially lady RPF personnel, go out of the way to help pregnant women passengers, experiencing labour pain during their train journey under **"Operation Matrishakti"**. During the month of Sep-2022

   to provide a safe and comfortable journey, RPF personnel assist the elderly citizens, women, and physically disabled and provide amenities like wheelchairs, stretchers, medical help, ambulances, Infant food etc. operation **"SEWA" was launched**

   RPF personnel under the code name **"Operation Nanhe Fariste"** undertake the noble cause of identifying and rescuing children lost/runaway/separated from their families due to various reasons and in need of care & protection.

   RPF has played an important role in rescuing persons lost or having run away from their homes or disoriented due to certain reason or distress and in need of care and protection. They are vulnerable to getting exploited or trafficked and are at the risk of serious bodily harm, if not secured in time. The force personnel worked selflessly to provide timely intervention under the code name **"Operation Dignity"** and secured **427 adults (223 Men + 204 Women)** during the month of September 2022.

3. **(b):** The National Programme for Civil Services Capacity Building (NPCSCB) "Mission Karmayogi" - has been launched with the objective of enhancing governance through 'civil service capacity building.

   - Mission Karmayogi aims to prepare Indian civil servants for the future by making them more creative, constructive, imaginative, innovative, proactive, professional, progressive, energetic, enabling, transparent, and technology-enabled. Empowered with specific role competencies, the civil servant will be able to ensure efficient service delivery of the highest quality standards.

   - The ultimate aim of Mission Karmayogi is to ensure "Ease of Living" for the common man, "Ease o Doing Business" and citizen centricity, that is reducing the gap between the government and the citizens.

4. **(b):** The Nobel Prize in physics for 2022 is being awarded to Alain Aspect, John F. Clauser and Anton Zeilinger for their work on quantum mechanics, the Royal Swedish Academy of Sciences announced.
   Awarded for: Experiments with entangled photons, establishing the violation of Bell inequalities, and pioneering quantum information science.
   Bell's theorem is an important philosophical and mathematical statement in the theory of quantum mechanics.

5. **(d):** Red Sandalwood is native and endemic to India and can only be found in the Seshachalam hills of the eastern ghats of Andhra Pradesh. It was listed as an Endangered species by the IUCN, because of overexploitation of its timber in South India.
   The export of Red Sanders from India is prohibited as per the Foreign Trade Policy.
   Red Sanders is also listed in Appendix II of the Convention on International Trade in Endangered Species of Wildlife Fauna and Flora (CITES).

6. **(a):** Hind Swaraj or Indian Home Rule is a book written by Mohandas K. Gandhi in 1909.In it, he expresses his views on Swaraj, modern civilization, and mechanisation, among other matters

7. **(a):** Created to help reduce stubble burning and the carbon footprint of thermal power plants, SAMARTH is the Sustainable Agrarian Mission on Use of Biomass in coal-based thermal Power Plants s a government initiative to use agro-residue, which was earlier regarded as waste, to produce zero-carbon electricity. The Ministry of Power set up the National Mission on use of Biomass in coal-based thermal power plants on May 25, 2021. It was created to address the issue of air pollution from stubble burning in farms and reduce the carbon footprint generated by thermal power plants which work on coal.
   It was set up to further enhance the "energy transition" in the country to more cleaner and greener forms. Its objectives are:
   - To increase the levels of co-firing and have a larger share of "carbon neutral power generation from the thermal power plants.

   - Take up research and development work in designing boilers to handle a greater amount of silica and alkalis in biomass pellets.
   - Work towards improving on constraints in the supply of such pellets and agro-residue to power plants.
   - Considering regulatory issues in biomass co-firing.

8. **(b):** Published by: The Atlas has been published by Space Application Centre, ISRO, Ahmedabad. Prepared using: The Atlas was prepared using IRS Advanced Wide Field Sensor (AWiFS) data of 2011-13 and 2003-05 time frames in the Geographical Information System (GIS) environment. The Atlas provides a state-wise area of degraded lands for the time frame 2018-19. It also provides the change analysis for the duration of 15 years from 2003-05 to 2018-19

9. **(c):** As on September 29, 2022, a total of two crore houses had been constructed out of the 2.46 crore houses that were sanctioned. Of this, 69% are owned partly or completely by women. It was launched by the Ministry of Rural Development.

10. **(d):** The Baltic Sea is enclosed by Denmark, Estonia, Germany, Latvia, Lithuania, Poland, Russia, Sweden and the North and Central European Plain. The Baltic Sea is artificially connected to the White Sea by the White Sea Canal and the North Sea by the Kiel Canal. It includes the Gulf of Bothnia, the Bay of Bothnia, the Gulf of Finland, the Gulf of Riga and the Bay of Gdansk.

SET 02

1. Consider the following statements regarding Modhera Sun Temple
   1. It is located on the bank of River Pushpavati
   2. It was built during the reign of Bhima I of the Chalukyas dynasty.
   3. All of the temples are designed to be west-facing
   4. The temple complex is built in the Māru-Gurjara style
   Which of the statements given above is/are correct?
   (a) 1 and 2   (b) 2 and 4
   (c) 1,2 and 4   (d) 2,3 and 4

2. Consider the following statements
   1. Political parties in India are registered under section 29 of Representation of the People Act, 1950
   2. The Elections Symbol Order, 1968 classifies a recognised political party either as a National Party or a State Party
   Which of the statements given above is/are correct?
   (a) 1 only   (b) 2 only
   (c) Both 1 and 2   (d) Neither 1 nor 2

3. Consider the following statements regarding Manesar Anti-Terror Exercise, 2022:
   1. It is conducted under the framework of the Quad Nations
   2. It is being conducted by the National Security Guard (NSG).
   Which of the statements given above is/are correct?
   (a) 1 only   (b) 2 only
   (c) Both 1 and 2   (d) Neither 1 nor 2

4. Consider the following statements regarding **Sabka Vishwas Scheme**
   1. It is a one-time measure for the liquidation of past disputes related to insolvency.
   2. It is implemented by the *Insolvency and Bankruptcy Board of India* (*IBBI*)
   Which of the statements given above is/are correct?
   (a) 1 only   (b) 2 only
   (c) Both 1 and 2   (d) Neither 1 nor 2

5. Consider the following statements regarding carbon dots
   1. This are nanomaterials that are good electron donors and acceptors
   2. CDs have the potential to be used instead of quantum dots, which are more toxic and less biocompatible.
   3. They are environment-friendly but costly technology
   Which of the statements given above is/are correct?
   (a) 1 and 2   (b) 2 and 3
   (c) 1 and 3   (d) 1,2 and 3

6. Consider the following statements regarding E-rupee
   1. E-rupee is the same as a fiduciary currency.
   2. It would appear as a liability on a central bank's balance sheet.
   3. It would cause reduction in operational costs of RBI involved in physical cash management
   Which of the statements given above is/ar correct?
   (a) 1 and 2   (b) 2 and 3
   (c) 1 and 3   (d) 1,2 and 3

7. Consider the following statements regarding National Commission for Scheduled Tribes (NCST):
   1. It consists of a Chairperson, a Vice-Chairperson, and 3 other Members who are appointed by the President by warrant under his hand and seal.
   2. NCST was set up 82nd Constitution Amendment Act, of 2003.
   3. At least one member should be a woman
   Which of the statements given above is/are correct?
   (a) 1 and 2   (b) 2 and 3
   (c) 1 and 3   (d) 1,2 and 3

8. Consider the following statements regarding United Nations Peacekeeping Mission and Forces:
   1. It is a joint effort between the Department of Peace Operations and the Department of Operational Support

2. At present India is the largest contributor of forces to the UN Peacekeeping Mission.

3. Bangladesh deployed the first all-women peacekeeping contingent to Liberia.

Which of the statements given above is/are correct?

(a) 1 and 2   (b) 2 and 3

(c) 1 only   (d) 1,2 and 3

9. Consider the following statements regarding Sveriges Riksbank Prize in economic sciences

1. It was established as one of the categories of the Nobel prize in 1968.

2. The latest 2022 Sveriges Riksbank Prize was given for research on banks and financial crises".

Which of the statements given above is/are correct?

(a) 1 only   (b) 2 only

(c) Both 1 and 2   (d) Neither 1 nor 2

10. The Nobel Prize for Physiology this year has been awarded to Svante Pääbo for his pioneering work in the field of —-

(a) Palaeontology   (b) Palaeogenomics

(c) Biostratigraphy   (d)tBioluminescence

Solutions

1. **(c): Modhera Sun Temple:**
   - The Sun Temple is a Hindu temple dedicated to the solar deity Surya located at Modhera village of Mehsana district, Gujarat, India. It is situated on the bank of the river Pushpavati. It was built after 1026-27 CE during the reign of Bhima I of the Chalukyas dynasty.
   - The temple is built at 23.6° latitude (approximately near the Tropic of Cancer) near Modhera Gujrat on the left bank of the Pushpavati river.
   - In 2014, Modhera Sun Temple entered the list of UNESCO World Heritage Sites.
   - The temple complex is built in Māru-Gurjara style (Chaulukya style or Solanki style).

   Features of Sun Temple Modhera:
   - The temple walls are devoid of any carvings.
   - The garbhagriha is connected with the mandapa both internally as well as externally
   - The porticos have decorative arched gateways known as torans.
   - A unique feature of this school's architecture is the presence of a step-tank, known as Surya- Kund in the proximity of the temple.
   - The steps of the tank are full of small temples. There are wooden carvings present in these temples.

   - The Solankis used a variety of materials to make temples including sandstone, black basalt, and soft marble.

   Most of the temples are east-facing and designed such that every year, during the equinoxes, the sun rays fall directly into the central shrine.

2. **(b):** Section 29 A of the Representation of the People Act, 1951 provides for the registration of political parties in India.

   A recognized political party has been classified either as a National Party or a State Party under paragraph 7 of the Elections Symbol Order, 1968

3. **(b):** Manesar Anti-Terror 2022 Recently, the National Security Guard (NSG) is hosted the multinational Joint Anti-Terror Exercise (JATE) called Manesar Anti-Terror 2022. JATE is an annual Counter Terrorist Exercise held within the framework of the Shanghai Cooperation Organisation (SCO), Regional Anti-Terrorist Structure (RATS). Eight representatives from the National Counter Terrorism Forces of the Republic of Kazakhstan, the Kyrgyz Republic, the Republic of Uzbekistan, the Russian Federation, and the NSG of the Republic of India participated in this exercise.

4. **(d):** It is a one-time measure for liquidation of past disputes of Central Excise and Service Tax. It

provides for certain immunities including penalty, interest or any other proceedings under the Central Excise Act, 1944.

It is enforced by the Central Government and implemented by the Central Board of Indirect Taxes and Customs, Ministry of Finance.

It also ensures to the disclosure of unpaid taxes by a person eligible to make a declaration.

5. (a): CDs are one of the youngest members of the carbon nanomaterial family. They were discovered in 2004 and have an average diameter of less than 10 nanometres. Nanomaterials have garnered the attention of researchers mainly due to their convenient availability from both organic and inorganic materials. In addition, CDs have the potential to be used instead of quantum dots, which are more toxic and less biocompatible.

    The dots show continuous and broad absorption spectra, intense fluorescent activity, excellent photostability, and highly tunable photoluminescence.

    Since they are good electron donors and acceptors, they are becoming more popular as candidates in applications like sensing and bioimaging. Moreover, CDs are inexpensive, highly biocompatible, and environment-friendly.

6. (b): E-rupee is the same as a fiat currency and is exchangeable one-to-one with the fiat currency. Only its form is different. It can be accepted as a medium of payment, legal tender, and a safe store of value. The digital rupee would appear as a liability on a central bank's balance sheet.

    The following are the advantages of e-Rupee

    * Reduction in operational costs involved in physical cash management,
    * Fostering financial inclusion, and bringing resilience, efficiency, and innovation in the payments system.
    * It will add efficiency to the settlement system and boost innovation in the cross-border payments space

7. (c): NCST was set up by amending Article 338 and by inserting a new article 338A in the Constitution through the 89th Constitution Amendment Act, 2003. Objective: to oversee the implementation of various safeguards provided to STs under the Constitution or under any other law for time being in force or under any other order to the Government and to evaluate the working of such safeguards. Composition: It consists of a Chairperson, a Vice-Chairperson and 3 other Members who are appointed by the President by warrant under his hand and seal. At least one member should be a woman. The Chairperson, the Vice-Chairperson, and the other Members hold office for a term of 3 years. The members are not eligible for appointment for more than two terms. Source:

8. (c): U.N. Peacekeeping mission is a joint effort between the Department of Peace Operations and the Department of Operational Support and aims to assist host countries to transition from situations of conflict to peace.

    UN Peacekeeping Forces (UNPKF) is also referred to as blue berets or blue helmets. DPO provides political and executive direction to UN peacekeeping operations around the world and maintains contact with the Security Council, troop and financial contributors, and parties to the conflict in the implementation of Security Council mandates. In 2007, India was the first nation in UN peacekeeping history to send an all-female Formed Police Unit (FPU) to be deployed in Liberia after civil war ravaged the African nation. African nations contributed nearly half the total, almost 44,000 people. At January 2022, Bangladesh was contributing 5,748 soldiers to United Nations peacekeeping missions, the most of any country.

9. (b): Unlike the other Nobel prizes, the economics award wasn't established in the will of Alfred Nobel but by the Sveriges Riksbank (Sweden's central bank) in his memory in 1968, with the first winner selected a year later. The Sveriges Riksbank Prize in Economic Sciences in Memory of Alfred Nobel 2022 was awarded to

Ben S. Bernanke, Douglas W. Diamond, and Philip H. Dybvig "for research on banks and financial crises". The Great Depression of the 1930s paralyzed the world's economies for many years and had vast societal consequences.

10. **(b):** The Nobel Prize for Physiology this year has been awarded to Svante Pääbo, a Swedish geneticist, who pioneered the field of palaeogenomics, or the study of ancient hominins by extracting their DNA.

SET 03

1. Consider the following statements regarding **East Asia Summit**
   1. It was Established in 1997 for having a strategic dialogue on political, security, and economic challenges facing the Indo-Pacific region.
   2. India is one of the founding members of the East Asia Summit.
   3. It's all members belong to Asia continent and is always chaired by the ASEAN member.
   Which of the statements given above is/are correct?
   (a) 1 and 3   (b) 2 and 3
   (c) 2 only   (d) 1,2 and 3

2. Consider the following statements
   1. Here the land covers changes with increasing elevation from tropical evergreen forest to temperate broadleaf and mixed forest
   2. There are settlements of Lisu tribe within this park.
   3. Three pantherine species leopard (Panthera pardus), tiger (P. tigris) and clouded leopard are found in the park:
   Identify the above national park:
   (a) Namdapha National park
   (b) Kamlang Wildlife Sanctuary
   (c) Pakhui
   (d) Jimcorbett National park

3. Consider the following statements regarding Grameen Udyami Project:
   1. It aims to increase skill training in tribal communities for inclusive and sustainable growth.
   2. This project is launched by Ministry of tribal affairs

   3. It is being implemented in North Eastern states of India.
   Which of the statements given above is/are correct?
   (a) 1 and 3   (b) 2 and 3
   (c) 2 only   (d) 1,2 and 3

4. Consider the following statements
   1. Carbon dating can be used to determine the age of living as well as non-living things
   2. Cosmogenic nuclide dating is used to determine the age of ice cores in Polar Regions.
   Which of the statements given above is/are correct?
   (a) 1 only   (b) 2 only
   (c) Both 1 and 2   (d) Neither 1 nor 2

5. Consider the following statements regarding Competition commission of India
   1. It is a statutory body under the control of the Ministry of Commerce and Industries
   2. It comprises six members and one chairperson.
   3. It regulates acquisition, acquiring of control, and Merger and acquisition.
   Which of the statements given above is/are correct?
   (a) 1 and 3   (b) 2 and 3
   (c) 2 only   (d) 1,2 and 3

6. Recently National Green Tribunal (NGT) has imposed an environmental compensation on the State government for its failure in maintaining Chandapura Lake. Chandapura Lake is located in-
   (a) Andhra Pradesh   (b) Karnataka
   (c) Tamilnadu   (d) Kerala

7. Consider the following statements regarding World Green Cities Award
   1. The award is given by UNESCO annually.
   2. Hyderabad won World Green Cities award for 2022 for best practices in landscaping, cultivating plants and flowers.

   Which of the statements given above is/are correct?
   (a) 1 only   (b) 2 only
   (c) Both 1 and 2   (d) Neither 1 nor 2

8. Consider the following statements regarding Global Hunger Index (GHI) 2022:
   1. It is based on four component indicators - undernourishment, child stunting, child wasting and child mortality.
   2. India currently worsened its rank to 107 in 2022 as compared to 2021.
   3. The GHI is an annual report jointly published by world bank

   Which of the statements given above is/are correct?

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

9. Galapagos Archipelago is located in which of the following ocean?
   (a) Indian Ocean
   (b) North Atlantic Ocean
   (c) South Atlantic Ocean
   (d) Pacific Ocean

10. Consider the following statements regarding INS Arihant
    1. It is India's first nuclear powered ballistic missile submarine
    2. It completed India's nuclear triad that is the capability to retaliate against a nuclear strike from land, air and sea.
    3. It was launched under The Project 75 Programme

    Which of the statements given above is/are correct?
    (a) 1 and 2   (b) 2 and 3
    (c) 2 only   (d) 1,2 and 3

Solutions

1. **(c):** East Asia Summit
   Established in 2005, it is a forum of 18 regional leaders constituting o16 countries in the East Asian, Southeast Asian, South Asian and Oceania regions, based on the ASEAN Plus Six mechanism. Membership expanded to 18 countries including Russia and the United States at the Sixth EAS in 2011 for strategic dialogue and cooperation on the key political, security, and economic challenges facing the Indo-Pacific region
   India is one of the founding members of the East Asia Summit.
   It comprises the ten member states of the ASEAN (Association of Southeast Asian Nations) along with 8 other countries namely Australia, China, Japan, India, New Zealand, the Republic of Korea, Russia and the USA.
   It is an ASEAN-centred forum so it can only be chaired by an ASEAN member.

2. **(a):** Namdapha National Park is a 1,985 km2 (766 sq mi) large protected area in Arunachal Pradesh of Northeast India. The land cover changes with increasing elevation from tropical evergreen forest to temperate broadleaf and mixed forest. Three pantherine species are found in the park: leopard (Panthera pardus), tiger (P. tigris) and clouded leopard (Neofelis nebulosa). There are a few settlements of Lisu tribal people within the park. Most of the Lisus are, however, located beyond the eastern border of the park towards the international border of India with Myanmar.

3. **(a):** Grameen Udyami Project Grameen Udyami Project is a unique multiskilling project, funded by National Skill Development Corporation (NSDC). It aims to increase skill training in tribal communities for inclusive and sustainable growth. It makes students

upskilled and multi-skilled in order to increase their employability. It also focuses on providing employment opportunities in both local and rural economies. The project is being implemented in six states— Maharashtra, Rajasthan, Chhattisgarh, Madhya Pradesh, Jharkhand, and Gujarat.

4. **(b):** Carbon Dating Carbon dating is a widely-used method to establish the age of organic materials, things that were once lived. It cannot be applied in all circumstances and cannot be used to determine the age of non-living things like rocks. The age of things that are more than 40,000-50,000 years old cannot be arrived at through carbon dating. Radiometric dating method is the other method to calculate the age of inanimate things. Cosmogenic nuclide dating is one type of radioactive dating. It is used to determine how long an object has remained exposed to sunlight. It is regularly applied to study the age of ice cores in polar regions.

5. **(b):** CCI is a statutory body and an independent regulator, established under the Competition Act 2002 under the ministry of corporate affairs. The commission comprises six members and one chairperson and they are appointed by the central government.
    The Competition Act, 2002, as amended by the Competition (Amendment) Act, 2007, follows the philosophy of modern competition laws. The Act prohibits anti-competitive agreements, and abuse of dominant position by enterprises and regulates combinations (acquisition, acquiring of control, and Merger and acquisition), which causes or are likely to cause an appreciable adverse effect on competition within India

6. **(b):** National Green Tribunal (NGT) has imposed an environmental compensation of Rs 500 crore on the Karnataka government for its failure in maintaining Chandapura lake in Anekal taluk (located around 25 km from Bangalore,) and taking steps to restore the water body. One of

the major pollutants of the lakes in the region has been the mushrooming of red category industries (industries having pollution index score of 60 and above) in the Jigani-Bommasandra industrial area and discharge of effluents into lakes in violation of the zero liquid discharge (ZLD) policy of the government. Under the ZLD water management system, no untreated water is supposed to be released into lakes.

7. **(b):** Hyderabad bagged the coveted World Green Cities Award that recognises 'nature-orientated approaches to city design and operation'. The award instituted by Association Internationale des Producteurs de l'Horticulture (AIPH) tries to recognise best practices in landscaping, cultivating plants and flowers. Hyderabad also won ín the 'Living Green for Economic Recovery and Inclusive Growth' category award of the AIPH. The award acknowledged the State's programme of 'Telangana Ku Haritha Haram', a large-scale tree-planting program that the State has taken up from 2015-16.

8. **(a):** India ranks 107 out of 121 countries on the Global Hunger Index (GHI) 2022. India has fared worse than all countries in South Asia barring war-torn Afghanistan. The GHI is an annual report jointly published by Concern Worldwide and Welthungerhilfe. GHI is a tool for comprehensively measuring and tracking hunger at global, regional, and national levels. GHI scores are based on the values of four component indicators - undernourishment, child stunting, child wasting and child mortality. The GHI score is calculated on a 100-point scale reflecting the severity of hunger, where zero is the best score (no hunger) and 100 is the worst.

9. **(d):** The Galapagos Islands, spread over almost 60,000 sq km, are a part of Ecuador. These are located in the Pacific Ocean around 1,000 km away from the South American continent. According to a recent study, Cold ocean

currents have sheltered the Galápagos Islands from global warming.

10. **(a):** The country's first indigenously-designed, developed and manufactured ballistic missile nuclear submarine (SSMN). INS Arihant recently carried out a successful launch of a Submarine Launched Ballistic Missile (SLBM) on Friday, validating India's second strike nuclear capability.

Its design is based on the Russian Akula-1 class submarine. It was launched in 2009 and commissioned into Indian navy in 2016.

It was 'launched under the Ship Submersible Ballistic Nuclear Submarine' (SSBN) programme. SSBN's are that class of submarines which can go deep beneath the ocean making them virtually undetectable for months, they also carry nuclear-tipped ballistic missiles.

SET 04

1. The term "ASTERX" recently seen in the news is-
   (a) Space debris clearing mission by NASA
   (b) new vaccine for pneumonia
   (c) Cryptocurrency
   (d) first french military exercise in space

2. Consider the following statements regarding PM SHRI (PM Schools for Rising India) scheme
   1. It is a Centrally sector scheme.
   2. The scheme will be open to states that agree to implement the NEP 2020 in its entirety.
   3. The scheme is open to schools run by the Centre, the state governments as well as local bodies
   Which of the statements given above is/are correct?
   (a) 1 and 2   (b) 2 and 3
   (c) 1 and 3   (d) 1,2 and 3

3. Which of the following statements regarding **National Clean Air Programme is incorrect?**
   1. The NCAP was launched in 2019
   2. It aims to bring a 20%-30% reduction in pollution levels from PM2.5 and PM10 particles by 2024.
   3. It is defined as a non-attainment city as one whose air quality did not meet the national

ambient air quality standards from 2011 to 2015.
   4. It takes 2015 as the base year for comparison of concentration.

4. Consider the following statements regarding **NIPUN Bharat Mission**
   1. The scheme ensures that every child in classes 1 to 3 can acquire FLN (Foundational Literacy and Numeracy) skills in India by the end of 2025.
   2. This scheme emphasizes children in the age bracket of 3 to 9 years.
   Which of the statements given above is/are correct?
   (a) 1 and 2   (b) 2 and 3
   (c) 1 and 3   (d) 1,2 and 3

5. Consider the following statements regarding National Single Window System (NSWS),
   1. it is a one-stop-shop portal allowing investors to identify and apply requirements according to the needs of their business facilitating Government-to-Business (G2B) services.
   2. It is launched by the Ministry of micro small and medium enterprises.

Which of the statements given above is/are correct?

(a) 1 only   (b) 2 only

(c) Both 1 and 2   (d) neither 1 nor 2

6. Which among the following has recently released the Foundational Learning Survey (FLS)?

(a) United Nations Children's Fund (UNICEF)

(b) NITI Aayog

(c) Ministry of Education

(d) CBSE

7. Consider the following statements regarding Mohenjo daro

1. Mohenjo daro is located on the left bank of the river Indus.

2. It was designated a UNESCO World Heritage Site in 1980

3. The Great Bath and Garanary were important constructions founded in Mohenjo Daro.

Which of the statements given above is/are correct?

(a) 1 and 2   (b) 2 and 3

(c) 1 and 3   (d) 1,2 and 3

8. The Warsaw International Mechanism was the first formal acknowledgment of the need to compensate developing countries struck by climate disasters. It was established by

(a) Montreal protocol

(b) Rio Earth summit 1992

(c) UNFCCC climate negotiations in 2013

(d) Kyoto Protocol

9. Consider the following statements regarding **Emergency Credit Line Guarantee Scheme (ECLG Scheme)**

1. It was launched in order to address financial distress in the Micro Small and Medium Enterprises (MSME) sector

2. Loans under the ECLG Scheme carry a government guarantee and 75 percent of the total loan amount is immediately paid to the banks in case of loan accounts turn bad

3. the National Credit Guarantee Trustee Company Ltd (NCGTC) – a company set up by the RBI manages and provides guarantees for these loans

Which of the statements given above is/are correct?

(a) 1 and 2   (b) 2 and 3

(c) 1 and 3   (d) 1,2 and 3

10. Consider the following statements regarding the doctrine of essentiality

1. It was invented by the Supreme Court in the 'Shirur Mutt case in 1954.

2. under this The Supreme court held that the term "religion" will cover all rituals and practices "integral" to a religion, and would itself determine the essential and non-essential practices of a religion.

Which of the statements given above is/are correct?

(a) 1 only   (b) 2 only

(c) Both 1 and 2   (d) neither 1 nor 2

Solutions

1. **(d):** France had launched its first military exercise in space to evaluate its ability to defend its satellites and other defense equipment from an attack. The exercise, codenamed "AsterX" in memory of the first French satellite from 1965, will be based on 18 simulated events in an operations room. During the drill, the French military monitored a potentially dangerous space object as well as a threat to its own satellite from another foreign power possessing a considerable space force.

2. **(b):** PM SHRI will be a new Centrally sponsored scheme where the Government will bear 60 per cent of the implementation cost while states will be responsible for the remaining 40 percent. The scheme will be open to states that agree to implement the NEP 2020 in its entirety.

The scheme is open to schools run by the Centre, such as Kendriya Vidyalayas and Jawahar Navodaya Vidyalayas, as well as those run by the state governments and local

bodies. To qualify for the scheme, the schools will have to meet a prescribed benchmark involving about 60 parameters, from the availability of electricity to toilets.

3. **(d):** An analysis by the environmental think tank, Centre for Science and Environment, reported: "barely any difference" in trends in particulate matter pollution (PM2.5) between the group of cities under the National Clean Air Programme (NCAP) and those outside its ambit.

The covers 132 of India's most polluted or so-called non-attainment cities.

This is defined as a city whose air quality did not meet the national ambient air quality standards from 2011 to 2015.

The NCAP launched in 2019 aims to bring a 20%-30% reduction in pollution levels from PM2.5 and PM10 particles by 2024, using 2017 pollution levels as a base.

4. **(b):** NIPUN Bharat Mission or National Initiative for Proficiency in Reading with Understanding and Numeracy is launched by the Education Ministry of India under National Education Policy 2020.

This scheme ensures that every child in India gains foundational numeracy and literacy by the end of Grade 3.

NIPUN Bharat focuses on transforming the monotonous education system into an integrated, enjoyable, all-inclusive, and engaging one.

NIPUN aims to complete its set objectives for private and Government aided schools by 2026-27. This will help achieve universal attainment of FLN skills.

The following are the beneficiaries of the scheme.

This scheme emphasizes children in the age bracket of 3 to 9 years. It also supports students in preschools to class three.

Children without a foundational skill and studying in classes 4 and 5 will be offered peer support, tutor guidance, and additional learning materials to strengthen their educational proficiency.

5. **(a):** 16 states and union territories (UTs) in India have on-boarded the National Single Window System (NSWS), according to a report in the *Hindu BusinessLine (BL)*.

NSWS is a platform for helping investors identify and apply requirements according to the needs of their business.

"National Single Window System (NSWS) is a one-stop-shop portal, and a medium of convenient and efficient online Government-to-Business (G2B) services to the business community.

Invest India, under the guidance of the Department for Promotion of Industry and Internal Trade (DPIIT), manages this project.

6. **(c):** The nationwide Foundational Learning Survey (FLS) is a study, carried out jointly by the Union Ministry of Education and the National Council of Educational Research and Training (NCERT), has recently found more than half of the assessed class III children from Delhi to have either "limited" foundational numeracy skills or "lacking the most basic knowledge and skills", once again throwing light on foundational numeracy gaps in Delhi.

7. **(b):** Mohenjo-Daro is located off the right (west) bank of the lower Indus River in Larkana District, Sindh, Pakistan

Significant excavation has since been conducted at the site of the city, which was designated a UNESCO World Heritage Site in 1980.

Mohenjo-Daro has a planned layout with rectilinear buildings arranged on a grid plan. Most were built of fired and mortared brick; some incorporated sun-dried mud-brick and wooden superstructures. The most famous building found at Mohenjo-Daro is a great bath. The water for the bath was provided from a well in an adjacent room. The floor was made up of bricks. The floor and outer walls were

bituminized so that there is no leakage of water. A granary has been found which the largest building of the Mohenjo-Daro

8. **(c):** The Warsaw International Mechanism (WIM) for Loss and Damages, set up in 2013, was the first formal acknowledgment of the need to compensate developing countries struck by climate disasters.It aimed to promote "implementation of approaches to address loss and damage associated with the adverse effects of climate change...in a comprehensive, integrated and coherent manner".

9. **(a):** In an indication of the continuing distress in the Micro Small and Medium Enterprises (MSME) sector, one in every six loans disbursed under the **Emergency Credit Line Guarantee Scheme (ECLG Scheme)** launched as part of the Covid-19 relief package in May 2020.

MSMEs were provided additional loans up to a maximum of 20 percent of their outstanding debt. The maximum loan provided was Rs 50 crore. These loans were to be categorized as NPAs when they remained unpaid even three months after the two-year moratorium.

Loans under the ECLG Scheme carry a government guarantee and 75 per cent of the total loan amount is immediately paid to the banks in case of loan accounts turning bad; the rest after the bank fails to recover the loan amount. the National Credit Guarantee Trustee Company Ltd (NCGTC) – a company set up by the Union Ministry of Finance to manage and provide guarantees for these loans.

10. **(c):** The doctrine of "essentiality" was invented by a seven-judge Bench of the Supreme Court in the 'Shirur Mutt' case in 1954. The court held that the term "religion" will cover all rituals and practices "integral" to a religion, and took upon itself the responsibility of determining the essential and non-essential practices of a religion.

SET 05

1. Consider the following statements regarding News Broadcasting & Digital Standards Authority (NBDSA)'
   1. It is a statutory body constituted under telegraph act 1885.
   2. It has the power to initiate proceedings on its own and take action in respect to any matter falling within its regulations

   Which of the statements given above is/are correct?
   (a) 1 only   (b) 2 only
   (c) Both 1 and 2   (d) Neither 1 nor 2

2. Consider the following statements regarding CAR T immunotherapy
   1. The premise of CAR T immunotherapy is to modify T cells to recognize cancer cells in order to more effectively target and destroy them.
   2. In this CAR T cells are derived either derived from T cells in a patient's own blood (autologous) or derived from the T cells of another healthy donor (allogeneic).
   3. CAR T cells work on the mechanism of Apoptosis

   Which of the statements given above is/are correct?
   (a) 1 and 2   (b) 2 and 3
   (c) 1 and 3   (d) 1,2 and 3

3. Consider the following statements regarding Customs Excise and Service Tax Appellate Tribunal (CESTAT)
   1. It is a is a quasi-judicial body under Article 323(b)   of the Constitution
   2. It has appellate jurisdiction in Anti-Dumping matters
   3. The CESTAT acts as a bull whack in dispensing justice in the areas of indirect as well as direct tax litigation.

   Which of the statements given above is/are correct?
   (a) 1 and 2   (b) 2 and 3

(c) 1 and 3   (d) 1,2 and 3

4. Consider the following statements
   1. Kushans were the first rulers in India to use the image of Goddess Lakshmi on their coins.
   2. Kushans were the first dynasty in the subcontinent that issued a large number of gold coins.
   3. Kushan coins usually bore the figure, name, and title of the ruler on the obverse and the deities on the reverse.

   Which of the statements given above is/are correct?
   (a) 1 and 2   (b) 2 and 3
   (c) 1 and 3   (d) 1,2 and 3

5. recently Air force bilateral exercise 'Garud was carried out between India and
   1. France
   2. UK
   3. USA

   Which of the statements given above is/are correct?
   (a) 1 and 2   (b) 2 and 3
   (c) 1 only   (d) 1,2 and 3

6. Which of the following Article of Indian constitution talks about 'Equal pay for equal work?'
   (a) Article 19   (b) Article 21
   (c) Article 39   (d) Article 14

7. Bollgard-I and Bollgard-II sometimes seen in the news are-
   (a) Pest resistant genetically modified varieties of Cotton
   (b) A Fumicide to keep the crops free from insect infestation
   (c) An experiment of artificial intelligence

(d) A new mission to Kuiper belt

8. Consider the following statements regarding Tambo Art'
   1. It uses paddy fields as a canvas to create design works by planting rice with different colored leaves and grain heads.
   2. This art from has been originated in Japan

   Which of the statements given above is/are correct?
   (a) 1 only   (b) 2 only
   (c) Both 1 and 2   (d) neither 1 nor 2

9. Consider the following statements regarding viral spill over risk
   1. It is a process of viruses infecting a new host from a reservoir host by being able to transmit sustainably in a novel host.
   2. the risk of viral pullovers increases with the climate change

   Which of the statements given above is/are correct?
   (a) 1 only   (b) 2 only
   (c) Both 1 and 2   (d) neither 1 nor 2

10. Which among the following statements regarding Public Provident fund
    1. PPF comes under the small savings schemes
    2. The minimum deposit that can be made in the account per financial year is Rs.500 and it can go up to Rs.1.5 lakhs.
    3. Rates of PPF account is revised by EPFO.

    Which of the statements given above is/are correct?
    (a) 1 and 2   (b) 2 and 3
    (c) 1 and 3   (d) 1,2 and 3

Solutions

1. **(b):** The NBDSA is an independent body set up by the News Broadcasters & Digital Association (NBDA), which serves as a representative of private television news, current affairs and digital broadcasters.

   It was established by leading Indian news broadcasters on 3 July 2007 as the **News Broadcasters Association** (NBA). In August 2021, News Broadcasters Association was renamed as News Broadcasters & Digital Association after inclusion of digital media news broadcasters in the association. The Authority may initiate proceedings on its own and issue notice or take action in respect to any matter which falls within its regulations. This can also be through complaints referred

to the Authority by the Ministry of Information & Broadcasting or any other governmental body, or by anyone else via its website

2. **(d):** CAR T cell therapy uses T cells engineered with CARs for cancer therapy. The premise of CAR T immunotherapy is to modify T cells to recognize cancer cells in order to more effectively target and destroy them

CAR T cells can be either derived from T cells in a patient's own blood (autologous) or derived from the T cells of another healthy donor (allogeneic). Once isolated from a person, these T cells are genetically engineered to express a specific CAR, which programs them to target an antigen that is present on the surface of tumors.

Genetically modified T cells are engineered to include one or more genes that can induce apoptosis when activated by an extracellular molecule. Apoptosis is a form of programmed cell death that occurs in multicellular organisms

3. **(a):** CESTAT:

The Appellate Tribunal was constituted under Article 323(b) of the Constitution of India by making provisions in the Customs Act 1962.It is an Indian quasi-judicial body that hears appeals against orders and decisions passed under the Customs Act, 1962 and Central Excise Act, 1944 as amended from time to time.

The CESTAT acts as a bull whack in dispensing justice in the areas of indirect tax litigation.

CESTAT was created to provide as an independent forum to hear the appeals against orders passed by the Commissioners of Customs and Excise and Service Tax under the Customs Act, 1962, Central Excise Act, 1944 and Finance Act 1994. The Tribunal is also empowered to hear the appeals against orders passed by the Designated Authority in Anti Dumping Duties under the Customs Tariff Act, 1975

4. **(d):** Kushans, who hailed from the Central Asian region and ruled till 3rd century AD, were the first to use the image of Goddess Lakshmi on their coins, along with Ardochsho, the Iranic Goddess of wealth. The Kushans also depicted Oesho (Shiva), moon deity Miro and Buddha in their coinage. Kushanas (1st-4th Centuries CE) were also the first dynasty in the subcontinent that issued a large number of gold coins. The lower denomination was usually found in copper coins. Kushan coins usually bore the figure, name, and title of the ruler on the obverse and the deities on the reverse. The legends are either entirely in Greek, or in some cases in Kharoshthi on the reverse side of the coin.

5. **(c):** Recently, Indian Air Force (IAF) and French Air and Space Force (FASF) are participating in a bilateral exercise, named 'Garuda VII', from 26 October to 12 November 2022 at Air Force Station Jodhpur.

6. **(c):** Article 39. Certain principles of policy to be followed by the State.—The State shall, in particular, direct its policy towards securing—
   (a) That the citizens, men and women equally, have the right to an adequate means of livelihood;
   (b) that the ownership and control of the material resources of the community are so distributed as best to sub serve the common good;
   (c) That the operation of the economic system does not result in the concentration of wealth and means of production to the common detriment;
   (d) That there is equal pay for equal work for both men and women

Additional info:

Article 40: The State shall take steps to organise village panchayats and endow them with such powers and authority as may be necessary to enable them to function as units of self-government.

7. **(a):** Bollgard1 and Bollgard 2 help in developing genetically modified crop plants. Bollgard cotton provides in-built protection for cotton against destructive Bollworm infestations, and contains an insecticidal protein from a naturally occurring soil microorganism,

Bacillus thuringiensis (Bt). Bollgard Bt cotton (single-gene technology) is India's first biotech crop technology approved for commercialization in India in 2002. Bollgard II technology contains a superior double-gene technology – Cry1Ac and Cry 2Ab which provides protection against bollworms and Spodoptera caterpillar.

8. **(c):** Tambo Art uses rice fields as a canvas to create design works by planting rice with different colored leaves and grain heads and it has been originated in Japan.

9. **(c):** Viruses may infect a new host from a reservoir host (in which it usually resides) by being able to transmit sustainably in a novel host – a process defined as 'viral spill over'.
Researchers collected samples from Lake Hazen in Canada, the world's largest High Arctic Lake by volume and has the largest freshwater ecosystem. Based on the study, they concluded that climate change is melting glaciers and this could create a possibility of the emergence of new viruses trapped in the ice for years. The hosts (humans or animals) can move to previously inhabitable regions and can come in contact with such pathogens which could cause viral spill over.

10. **(a):** PPF comes under the small savings schemes, of which, the interest rates are reviewed on a quarterly basis.
PPF rates are revised by RBI.
The minimum deposit you must make in the account per financial year is Rs.500 and it can go up to Rs.1.5 lakh.
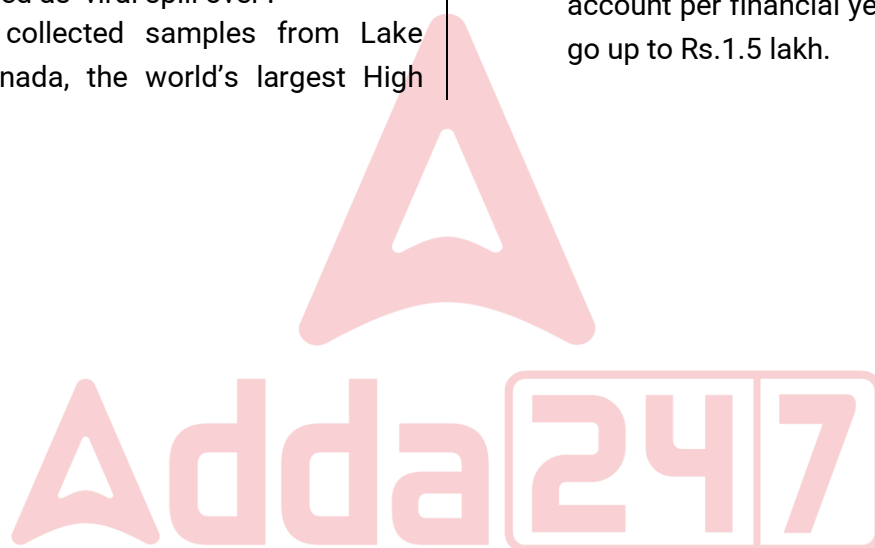
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