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POLITY & GOVERNANCE

NATIONAL MEDICAL COMMISSION

Context: Dr. B.N. Gangadhar appointed as Chairperson of the National Medical Commission.

Background:

- The **Appointment Committee of the Cabinet (ACC)** has appointed various individuals to posts of the NMC and the autonomous boards. The appointments are for a period of four years until the appointee attains the age of 70 years or until further orders, whichever is earliest, the health ministry said.

About National Medical Commission:

- The **National Medical Commission Act of** 2019 establishes the **National Medical Commission** (NMC), which is responsible for the creation and regulation of all elements of medical education, practice, and institutions.

- There are four boards in the National Medical Commission

  - **Under-Graduate Medical Education Board (UGMEB)**- sets norms for undergraduate courses
  - **Post-Graduate Medical Education Board (PGMEB)-** sets norms for post-graduate courses
  - **Medical Assessment and Rating Board**– inspects and rates the medical education institutes
  - **Ethics and Medical Registration Board**– regulates professional conduct of the doctors and registers them

FUNCTIONS OF NATIONAL MEDICAL COMMISSION

- Establishing policies for high-quality medical education and regulations.
- Regulating medical institutions, researches, and professionals.
- Assessing healthcare requirements, including human resources and healthcare infrastructure.
- Promoting, coordinating, and framing guidelines for the Commission, Autonomous Boards, and State Medical Councils.
- Ensuring coordination among Autonomous Boards.
- Ensuring compliance of guidelines and regulations by State Medical Councils.
- Exercising appellate jurisdiction over decisions of Autonomous Boards.
- Ensuring professional ethics in medical profession.
- Determining fees and charges for 50% of seats in private medical institutions and universities.
- Exercising other powers and performing prescribed functions.

Source: Money Control

HOUSE RULES GOVERNING THE EXPUNCTION POWERS OF RAJYA SABHA CHAIRMAN, LOK SABHA SPEAKER

Context: The first special session of the 18th Lok Sabha witnessed heated discussions, with the Opposition clashing with the government. Rajya Sabha Chairman removed significant portions of Mallikarjun Kharge's speech, Meanwhile, in the Lower House, parts of Rahul Gandhi's remarks on the PM and the BJP were expunged from the records on the orders of Speaker.

Background:-

- The practice of expunging remarks is a standard parliamentary procedure, but the 'selective

expunction' by the presiding officers has become a flashpoint between the Opposition and the Centre.

When are remarks expunged from parliamentary records?

- Parliament maintains a verbatim record of all proceedings.
- **Article 105 of the Constitution** grants certain privileges and freedom of speech to MPs.
- Words deemed "**defamatory, indecent, unparliamentary or undignified**" are deleted or expunged from records by the presiding officer.
- The Speaker can order expunction of words deemed prejudicial to national interest, detrimental to foreign relations, derogatory to dignitaries, likely to offend national sentiments, discredit the Army, or objectionable.
- Members must withdraw **irrelevant remarks upon Chair's request.**
- Quotes from unreferenced documents or speaking after being asked to desist can result in expunction.
- Continuous interruptions during speeches may also be expunged at Speaker's discretion.

Presiding Officers' Power to Exempt Remarks

- Chairman and Speaker have the power to expunge remarks under Rule 261, Rule 380, and Rule 381 of Rajya Sabha **and Lok Sabha Rules of Procedure.**
- **Rule 261 allows the** Chairman to expunge defamatory, indecent, unparliamentary, or undignified words from Council proceedings.
- Rule 380 allows the Speaker to expunge words from House proceedings.
- Expressed portions are marked with asterisks and footnotes.
- A list of expunged words is circulated to media outlets, and those publishing them face charges for breach of privilege.
- The relevance of expunging remarks has been questioned in the digital age due to increased accessibility of expunged content.

Source:Hindu

NATIONAL REGISTER OF CITIZENS (NRC)

Context: An apex body of the Kuki-Zo community on July 6 said it would not oppose the implementation of the National Register of Citizens (NRC) in Manipur if it was carried out under the supervision of the Supreme Court.

Background:

- Meitei and Naga organisations have been demanding the implementation of the National Register of Citizens to check infiltration from Myanmar.

About National Register of Citizens (NRC):

- The National Register of Citizens (NRC) is a register of all Indian citizens.

- Its creation was mandated by the 2003 amendment of the Citizenship Act, 1955.

- The purpose of the NRC is to document legal citizens of India, allowing authorities to identify and deport illegal immigrants.

- The National Register of Citizens (NRC) was first implemented in the northeastern state of Assam.

- The nodal office for the implementation of the National Register of Citizens (NRC) is the Office of the Registrar General & Census Commissioner, India, which is responsible for preparing and

updating the NRC.

- The main objective of the National Register of Citizens (NRC):

    o Detect illegal immigrants living in different states of India

    o Identify and separate legal and illegal immigrants in India

    o Prevent voter fraud

    o Enhance internal security

Source:Hindu

NATIONAL COMMISSION FOR MINORITIES(NCM)

Context:The National Commission for Minorities (NCM) took initiative to discuss the implementation and registration of Sikh marriages under the Anand Marriage Act with 18 States/UTs.

Background:

- Jharkhand, Maharashtra, and Meghalaya reported that they have already implemented the Act, while the remaining States/UTs assured that they would implement it within two months.

National Commission for Minorities (NCM)

- The National Commission for Minorities (NCM) in India is a statutory body established under the National Commission for Minorities Act, 1992.

- It replaced an earlier non-statutory body called the Minorities Commission.

- The NCM's primary role is to work for the development of recognized minority communities in India.

- The NCM is composed of the following members:

    o Chairperson

    o Vice-Chairperson

    o Five Members

- These seven individuals are nominated by the Central Government from among persons of eminence, ability, and integrity.

- Each member serves a three-year term from the date of assuming office.

- Minority Communities:

    o Initially, five religious communities were notified as minority communities by the Union Government: Muslims, Christians, Sikhs, Buddhists, and Zoroastrians (Parsis).

    o Later, Jains were also notified as another minority community in 2014.

- Functions:

    o The NCM looks into matters related to the status of minority communities in India.

    o It investigates complaints made by minority communities.

    o The NCM safeguards and protects the interests of minorities as provided in the Constitution of India and relevant laws.

- Anand Marriage Act:

o The Anand Marriage Act is a law that allows Sikhs to register their marriages under a separate act, rather than the Hindu Marriage Act.

o This act is significant for the Sikh community as it provides legal recognition to their traditional marriage ceremonies.

o It recognises the Sikh marriage ceremony called Anand Karaj.

Source:PIB

MAHARASHTRA SPECIAL PUBLIC SECURITY BILL

Context: On July 11, the BJP-led MahaYuti government introduced the Maharashtra Special Public Security (MSPS) Act, 2024, targeting the issue of Naxalism in urban areas.

Background:-

- The provisions of the proposed Bill, which allows the State to declare any organisation as 'unlawful' with offences categorised as cognisable and non-bailable, has raised concerns and is being dubbed the 'urban naxal' law.

Why was the Bill proposed?

- According to Maharashtra government, Naxalism is not limited to rural areas, but is increasing in urban areas through frontal organisations. These active frontal organisations of Naxal groups give constant and effective support in terms of logistics and safe refuge to its armed cadre.

- Such frontal organisations propagate maoist ideology of armed rebellion against the constitutional mandate and disrupt public order in the State.

- According to government, unlawful activities of such frontal organisations need to be controlled through effective legal means and that existing laws are ineffective to tackle the issue.

How different is it from the UAPA?

- The Unlawful Activities (Prevention) Act, 1967 (UAPA) is invoked in cases related to Naxalism and terrorism. This law empowers the state to classify organisations as 'unlawful associations.'

- Both the laws are almost the same. However, in the MSPS Act, an advisory board of three persons who are or have been qualified to be appointed as judges of the High Court shall oversee the confirmation process, while under UAPA, a tribunal led by a High Court judge verifies the State's declaration.

- In addition to the **UAPA**, the State also enforces the **Maharashtra Control of Organised Crime Act**, 1999 (MCOCA) to address perceived extreme situations involving individuals labelled as '**urban Naxals'.**

- If the proposed legislation is passed, it would allow the State police and security agencies to arrest individuals without a warrant and often without informing them of the charges. All offences under this Act would be cognisable and non-bailable.

key provisions of MSPS bill

- The MSPS Act empowers the State to designate any suspected 'organisation' as an 'unlawful organisation' and outlines four offences for which a person may be penalised

    o (i) being a member of an unlawful organisation,

    o (ii) being a member and raises funds for an unlawful organisation or harbours any member of the unlawful organisation,

o (iii) whoever manages or assists in the management of an unlawful organisation, or promotes or assists in promoting a meeting, and

o (iv) whoever commits or abets or attempts to commit or plans to commit any unlawful activity.

When could it come into existence?
- Since the Bill was tabled at the end of the Assembly's term, and that too in the Lower House first rather than the Upper House, its progress will largely depend on the next government, as the State is scheduled to go to polls in October or November.

- The day after the Bill was tabled, the monsoon session was prorogued, and as a result, the proposed bill lapsed, unless the MahaYuti government issues an ordinance to implement it.

Source:Hindu

ARTICLE 341 OF THE INDIAN CONSTITUTION

Context: The recent Supreme Court ruling emphasizes that states do not have the authority to modify the Schedule Caste (SC) list published under Article 341 of the Indian Constitution.

Background:

- The court quashed a Bihar government notification from 2015 that classified the Tanti-Tantwa community as SC, reverting them back to the category of Extremely Backward Class. The court called the notification "mala fide" and emphasized that only Parliament has the authority to amend the SC list through legislation, not state governments.

AboutArticle 341 :

- **Article 341** of the Indian Constitution plays a crucial role in the recognition and identification of Scheduled Castes (SC).

- The list of Scheduled Castes is intended to provide special privileges and benefits to these communities, promoting their social and educational advancement.

Presidential Authority:

- Article 341(1) empowers the President to specify, through a public notification, the castes, races, or tribes deemed as SCs in **relation to a particular State or Union territory.**

- The President consults with the Governor (in the case of a State) during this process.

Parliament's Power:

- Article 341(2) grants Parliament **the authority to include or exclude** any caste, race, or tribe from the list of Scheduled Castes specified in the Presidential notification.

- Changes to the list can only be made through legislation by Parliament.

Source: Hindu

NATIONAL COMPANY LAW TRIBUNAL (NCLT)

Context: Recently, the Bengaluru bench of the National Company Law Tribunal (NCLT) admitted the Board of Control for Cricket in India (BCCI)'s petition seeking insolvency proceedings against ed-tech giant Byju's.

Background:

- The BCCI - which administers professional cricket in India - had sought initiation of insolvency proceedings against Byju's over alleged unpaid dues of Rs 158.90 crore under their sponsorship

contract for the Indian cricket team.

About National Company Law Tribunal (NCLT):

- The National Company Law Tribunal (NCLT) is a quasi-judicial body established by the Central Government of India under section 408 of the Companies Act, 2013.
- **NCLT was constituted on June 1, 2016.**
- It operates under the **provisions of the Companies Act, 2013.**
- NCLT was formed based on the recommendation of the V. Balakrishna Eradi committee on law relating to the insolvency and the winding up of companies.

Functions:

- The NCLT disposes of proceedings under the Companies Act, including arbitration, compromise, reconstruction, and winding up of companies.
- It is also the Adjudicating Authority for insolvency proceedings under the Insolvency and Bankruptcy Code, 2016.
- Under the Companies Act, 2013**, the National Company Law Tribunal (NCLT)** has the authority to approve the merger of firms in India. This is part of its jurisdiction.
- The NCLT's role is to oversee the legal aspects of corporate transactions, including mergers and acquisitions, to ensure they comply with statutory provisions and are in the best interest of shareholders and creditors.

Appeals:

- Decisions taken by the NCLT can be appealed to the National Company Law Appellate Tribunal (NCLAT), and further appeals can be made to the Supreme Court on points of law.

Source: Inc42

ARTICLE 361 OF INDIAN CONSTITUTION

Context: The Supreme Court recently agreed to examine the question of immunity to Governors from any kind of criminal prosecution, granted under Article 361 of the Constitution.

Background:

- The Bench, headed by Chief Justice of India D Y Chandrachud, was hearing a plea filed by a contractual woman employee of West Bengal Raj Bhavan, who has alleged sexual harassment by Governor C V Ananda Bose.

A361: Protection to President and Governors

- 361(1) The President, or the Governor of a State, shall not be answerable to any court for the exercise and performance of the powers and duties of his office or for any act done or purporting to be done by him in the exercise and performance of those powers and duties :
  - o Provided that the conduct of the President may be brought under review by any court, tribunal or body appointed or designated by either House of Parliament for the investigation of a charge under article 61 :
  - o Provided further that nothing in this clause shall be construed as restricting the right of any person to bring appropriate proceedings against the Government of India or the Government of a State.
- 361 (2) No criminal proceedings whatsoever shall be instituted or continued against the President, or the Governor, in any court during his term of office.

- 361 (3)No process for the arrest or imprisonment of the President, or the Governor of a State, shall issue from any court during hi s term of office.

- 361 (4)No civil proceedings seeking relief against the President or a State Governor can be initiated during their term for acts done in their personal capacity, either before or after assuming office, until two months after written notice detailing the nature of the proceedings, cause of action, and the claimant's details has been delivered to them or left at their office.

- Note: Articles presented above are concise form of constitutional language.

Present Case

- In a complaint to the Kolkata Police, a woman had alleged that she was sexually harassed by West Bengal Governor when he called her to Raj Bhavan under the pretext of offering her a job on April 24 and May 2.

- She stated that she was left "remediless" due to the Governor's immunity under Article 361(2) and urged the court to set guidelines and qualifications for exercising this immunity.

Source: Indian Express

THE INTERNATIONAL CENTRE FOR AUDIT OF LOCAL GOVERNANCE (iCAL)

Context: The International Centre for Audit of Local Governance (iCAL) was inaugurated by the Comptroller and Auditor General (CAG) of India.

Background:

- By establishing iCAL, the Comptroller and Auditor General (CAG) aims to create a cooperative ecosystem, elevate auditing standards, and enhance financial accountability at the grassroots level in India.

About The International Centre for Audit of Local Governance (iCAL):

- The **International Centre for Audit of Local Governance (iCAL),** a pioneering initiative by supreme audit institutions (SAIs) India, was officially inaugurated in Rajkot, Gujarat on 18th July 2024.

- iCAL's primary objectives are to develop and enhance standards for Local Government Audits, strengthen data collection and reporting, and empower auditors, executives, and elected representatives through comprehensive training programs and leadership development initiatives.

- It aims to improve financial performance assessment and service delivery by providing Technical Guidance and Support to Local Government auditors.

- iCAL would assist Local Governments in achieving the Sustainable Development Goals, fostering community engagement, and addressing global challenges, like climate change and the blue economy, as they play a crucial role in effective policy implementation and economic growth at the grassroots level.

Need for iCAL:

- Increased Funding: With significant funds flowing to local bodies, proper auditing is essential to ensure efficient utilization.

- Global Practices: The CAG highlighted the need to adopt global best practices in local government auditing, noting that 40 countries have supreme audit institutions (SAIs) for this purpose.

- Capacity Building: Building the capacity of auditors and local government employees is essential to improve financial management practices and internal controls.

Source: PIB

BHIL PRADESH

Context: The Bhil tribal community's demand for a separate state is growing in Rajasthan. On July 18, a large gathering at Mangarh Dham in Banswara saw members calling for the creation of "Bhil Pradesh," which would include 49 districts from four states.

Background:-

- The demand for Bhil Pradesh has been frequently raised by tribal leaders over the years, and the Bharat Adivasi Party (BAP), formed last year, has been buoyed by its performance in the recent Lok Sabha polls to champion it with renewed vigour.

What is the demand for 'Bhil Pradesh'?

- According to the BAP, the proposed Bhil Pradesh would cover 49 districts across four contiguous states including Rajasthan, Madhya Pradesh, Gujarat and Maharashtra. This would involve 12 districts from Rajasthan.

- As per Census 2011, there are 1.7 crore Bhils across the country. Their largest concentration is in Madhya Pradesh at about 60 lakh, followed by 42 lakh in Gujarat, 41 lakh in Rajasthan and 26 lakh in Maharashtra.

- The demand is based on the geography, culture, and language according to supporters.

- If Gujarat and Maharashtra can be carved out due to similar cultures and languages, then why not Bhil Pradesh?.This is what the leaders of the movement is asking.

History of 'Bhil Pradesh' demand

- According BAP leaders, the demand **for Bhil Pradesh dates back to 1913.**

- Leaders claim that Govind Giri Banjara, a tribal activist and social reformer, first demanded a Bhil state in 1913 when he mobilised a gathering of thousands of tribals at Mangarh Hill. On **November 17, 1913, around 1,500 tribals** were massacred by the British for their rebellion.

- Over the years, various tribal leaders have voiced their demand for a separate Bhil state.

What does the constitution say ?

- Article 3 assigns to Parliament the power to enact legislation for the formation of new States.

- Parliament may create new States in a number of ways, namely by

  - (i) separating territory from any State,

  - (ii) uniting two or more States,

  - (iii) uniting parts of States and

  - (iv) uniting any territory to a part of any State.

  · Parliament's power under Article 3 extends to increasing or diminishing the area of any State and altering the boundaries or name of any State.

  · Two checks constrain Parliament's power to enact legislation for the formation of new States.

  - Firstly, a bill calling for formation of new States may be introduced in either House of Parliament only on the recommendation of the President.

  - Secondly, such a bill must be referred by the President to the concerned State Legislature for expressing its views to Parliament if it contains provisions which affect the areas,

boundaries or name of that State.

    o   Parliament will not be bound by these views in the process of enacting legislation for the formation of new States.

Source:Indian Express

PRIVATE BILLS

Context:MPs from various parties introduced several Private Member's Bills in the Lower House, including proposals for private sector reservations for the socially disadvantaged, 10 Lok Sabha seats for those under 35, a special package for Dalits and backward communities in Bihar and a special Act to control floods in the state.

Background:

- Private members bill have very less chance of getting through the house.

About Private bills

- An MP who is not a minister is a private member and Bills introduced by private members are referred to as private member's Bills and those introduced by ministers are called government Bills.

- Before the private Bill can be listed for introduction, the Member must give at least a month's notice, for the House Secretariat to examine it for compliance with constitutional provisions and rules on legislation.

- While a government Bill can be introduced and discussed on any day, a private member's bill are introduced and discussed on Fridays.

- To date, only 14 of Private Bills have become Acts. Six of the 14 Bills became law in 1956 and the last one to receive parliamentary approval was the Supreme Court (Enlargement of Criminal **Appellate Jurisdiction) Bill, 1968, on August 9, 1970.**

- Importance of Private Members' Bills lies in the fact that they enable legislators to draw attention to issues which might not be represented in government Bills or to highlight the issues and gaps in the existing legal framework requiring legislative intervention.

- Though the last private Bill to be passed by Parliament was more than five decades ago, these draft laws constitute a major chunk of legislative business.

- **The 16th Lok Sabha saw 1,114 Private Members' Bills being introduced.**

- In the last 10 years, as against 78 Government Bills, 459 Private Members' Bills have been introduced in the Rajya Sabha.

Source: Indian Express

RIGHT TO BE FORGOTTEN

Context: Last week, the Supreme Court agreed to hear a case whose outcome will likely shape the contours of the right to be forgotten **(also known as right to erasure**), in India.
Background:-

- The Supreme Court must determine whether the right to be forgotten is a fundamental right and, if so, how it aligns with other fundamental rights guaranteed by the Constitution of India.

What is the present case about ?

- A three-judge Bench, led by Chief Justice of India (CJI) D Y Chandrachud, will hear a challenge to a Madras High Court ruling from February 27. The ruling directed the legal search portal Indian Kanoon to remove a judgment in a 2014 rape and cheating case.

- The man, who was acquitted, had approached the Madras High Court in 2021, arguing that he was denied Australian citizenship because his name appears in the judgment that is publicly available on the legal portal.

What is the right to be forgotten?
- The right to be forgotten can be loosely described as the right to remove one's digital footprint (from Internet searches, etc.) where it violates the right to privacy.

- In May 2014, the Luxembourg-based Court of Justice of the European Union (CJEU) established the right to be forgotten in the **"Google Spain case."** The court ruled in favor of Spanish lawyer Mario Costeja González, who requested Google to remove information from 1998 about the forced sale of his property due to social security debt. Citing Articles 7 and 8 of the EU Charter on Fundamental Rights, the CJEU mandated that search engines must honor requests to remove data that are inadequate, irrelevant, or excessive in light of the time elapsed.

- **Informational self-determination** — an individual's right to control and limit her personal information — is now widely recognised in EU law. Article 17 of the EU's General Data Protection Regulation (GDPR) describes the right to erasure.

- From victims of so-called "revenge porn" to individuals whose personal cases are on the Internet, the right to be forgotten is a crucial remedy.

How is the right interpreted in India?
- In India, there is no statutory framework for the right to be forgotten. However, not all constitutional rights need to be explicitly stated.

- The 2017 Supreme Court judgment in Justice K S Puttaswamy v. Union of India recognized the right to privacy as a fundamental right, linked to the rights to life, equality, and freedom of speech and expression. In a concurring opinion, Justice S K Kaul mentioned the right to be forgotten, stating that individuals should be able to remove personal data that is no longer **necessary, relevant, or correct, and serves no legitimate interest.**

- Justice Kaul also outlined valid reasons for violating this right, including exercising freedom of expression and information, complying with legal obligations, performing tasks in public interest, public health, archiving for public interest, scientific or historical research, statistical purposes, or for legal claims.

Source:Indian Express

INTERNATIONAL RELATIONS

SHANGHAI COOPERATION ORGANISATION (SCO)

Context: Prime Minister Narendra Modi will not attend the Shanghai Cooperation Organisation (SCO) summit this year. External Affairs Minister S Jaishankar is set to lead the Indian delegation to Kazakhstan capital Astana.

Background:

- The summit will take place from July 3-4 in Astana. Kazakhstan took over the SCO presidency from India, which was the president last year. India hosted the SCO summit virtually in July 2023.

Shanghai Cooperation Organisation (SCO) Overview

- Established by China and Russia in 2001.
- The world's largest regional organization, covering **80% of Eurasia and 40% of the world population.**
- Successor to the Shanghai Five, formed in 1996.
- Expanded to eight states in 2017, including India and Pakistan.
- Iran joined in July 2023.
- Secretariat located in Beijing, governed by the Heads of State Council (HSC).
- Headquarters in Tashkent, Uzbekistan.
- Includes the **Regional Antiterrorist Structure (RATS).**

The main SCO goals and tasks according to its charter are:

- strengthening mutual trust, friendship and good neighborliness between the members;

- development of multifaceted cooperation in the maintenance and strengthening of peace, security and stability in the region and promotion of a new democratic, fair and rational political and economic international order;

- joint combating terrorism, separatism and extremism, fighting against illicit narcotics and arms trafficking and other types **of transnational criminal activity, and also illegal migration;**

- encouraging efficient regional cooperation in such areas as politics, trade and economy, defense, law enforcement, environment protection, culture, science and technology, education, energy, transport, credit and finance, and also other areas of common interest;

- facilitating economic growth, social and cultural development in the region through joint actions on the basis of equal partnership aimed at steady increase of living standards and improvement of living conditions of the people;

- coordinating approaches to **integration into the global economy;**

- promoting enjoyment of human rights and fundamental freedoms in accordance with the international obligations of the member States and their national legislation;

- maintaining and developing relations with other States and international organizations; cooperating in the prevention of international conflicts and their peaceful settlement;

- jointly searching for solutions to the problems that **would arise in the 21st century.**

Decisions-Taking Procedure

- The SCO bodiestake decisions by agreement without vote and their decisions shall be considered adopted if no member State has raised objections during its consideration (consensus), except for the decisions on suspension of membership or expulsion from the Organization that shall be taken

by "consensus minus one vote of the member State concerned".

Source: Indian Express

QUAD

Context: Recently, Quad grouping expressed its deepest concern over the war raging in Ukraine, and flagged respect for sovereignty and territorial integrity — a clear reference to Russian invasion of Ukraine.

Background:

- During his visit to Russia on July 8-9, Prime minister Modihad publicly statedthat solutions cannot be found on the battlefield. He also expressed concern over the killing of children in a Russian attack on a hospital in Kyiv.

Key Takeaways:

- **The Quadrilateral Security Dialogue (QUAD)** is an informal strategic forum comprising four countries: the United States, India, Australia, and Japan.
- QUAD serves as a platform for these nations to engage in discussions on regional security, defense cooperation, and shared interests in the Indo-Pacific region.

Formation and Evolution:

- The QUAD was first conceptualized in 2007, with its initial meeting held on the sidelines of the **Association of Southeast Asian Nations (ASEAN)** summit.
- The group has evolved over the years, with its activities waxing and waning based on the geopolitical climate.
- Unlike **NATO**, the Quad does not include provisions for collective defence.

Objectives:

- Security Cooperation: The QUAD focuses on enhancing maritime security, countering terrorism, and ensuring a free and open Indo-Pacific region.
- Economic Collaboration: The member countries work together on economic initiatives, including supply chain resilience and technological innovation.
- Health and Climate: The QUAD has also formed working groups to address global health challenges, **such as the COVID-19 pandemic, and climate change.**

Recent Developments:

- In recent years, the QUAD has intensified its activities, particularly in response to China's growing assertiveness in the region.
- The group has conducted joint naval exercises and expanded its agenda to include cybersecurity and disinformation countermeasures.

Significance:

- The QUAD is seen as a counterbalance to China's influence in the Indo-Pacific region.
- It promotes democratic values and aims to ensure a rules-based international order.

Source: Indian Express

INTERNATIONAL LABOUR ORGANISATION (ILO)

Context: India, a founding member of the International Labour Organization (ILO), is likely to raise a complaint against the UN agency over its India Employment Report 2024.

Background:

- The India Employment Report 2024 sheds light on crucial labour market trends in India.

About International Labour Organization (ILO)

- The International Labour Organization (ILO) is a tripartite U.N. agency established in 1919.

- It brings together governments, employers, and workers from 187 member States to set labour standards, develop policies, and promote decent work for all.

- The ILO's mandate is to advance social and economic justice through international labour standards.

History:

- **It was created in 1919,** as part of theTreaty of Versailles that ended World War I.

- Became the first affiliated specialized agency of **the United Nations in 1946.**

- Headquarters in Geneva, Switzerland.

- **Received the Nobel Peace Prize in 1969** for improving peace among classes.

Functions and Achievements:

- Ensured labour rights during the Great Depression and supported decolonization.

- Played a role in the creation of Solidarność (trade union) in Poland and the victory over apartheid in South Africa.

- Currently supports building an ethical framework for fair globalization.

Organizational Structure:

- International Labour Conference: Sets international labour standards and policies. Often called the **"International Parliament of Labour."**

- Governing Body: Executive council of the ILO, meets three times a year in Geneva. Establishes programs and budgets.

Source: Hindu

BEHIND RUSSIA'S HIGH INCOME

Context: Earlier this month, the World Bank upgraded Russia from an "upper-middle income" country to a "high-income" one, a status it last had in 2014.

Background:

- The ranking was boosted by growth in trade (+6.8%), the financial sector (+8.7%), and construction (+6.6%), which led to increases in both the real (3.6%) and nominal (10.9%) GDP.

About Russias growth:

- The improvement is on account of the war economy, and is unlikely to endure, according to experts.

- The World Bank classifies economies into four groups based on per-capita gross national income (GNI) in US dollars: low, lower-middle, upper-middle, and high. The Bank's 2024-25 classification for high-income countries raised the threshold to $14,005 or more.

- Last year, **Russians earned $14,250** per person on a gross national income basis, the Bank estimated. Bulgaria and Palau joined Russia in becoming **"high-income economies"** with $14,460 and $14,250 per-capita GNI respectively, the Bank said.

- In nominal terms, Russia ranks 72nd globally in per-capita GNI and 53rd in purchasing power parity.

- The resilience of Russia, which is now under more individual sanctions than Iran, Cuba, and North Korea combined, has come as a surprise.

- After the initial recessionary impact of sanctions in 2022, the (Russian) economy has returned to growth in 2023, supported by fiscal stimulus including military spending and credit expansion, and by successfully mitigating the impact of the sanctions.

Why sanctions against Russia is not working ?:

- OIL: The sanctions on Russia's energy sector are not as tight as the ones that were imposed on Venezuela or Iran.

- INVESTMENTS:Investment is flowing to Russia's defence and manufacturing sectors.The IMF has highlighted that some imports are being substituted by domestic goods, resulting in investments in new production facilities.

- CONSUMPTION: Private consumption has recovered strongly, adding 2.9 percentage points to GDP growth. This is being driven by buoyant credit and a strong labour market, with record low unemployment of just 3%, and a general rise in wages. The largely voluntary military recruitment model, using monetary incentives, has allowed sections of consumers to continue spending.

Countries by income levels, 2024-25

- High Income
- Upper-middle Income
- Lower-middle Income
- Low Income
- Not Classified

Source: World Bank data blog

SITUATION IN 1987...
- 100% of South Asian countries were classified as low-income
- No country in Middle East and North Africa was low-income
- In Latin America and the Caribbean, 9% of countries were high-income
- In Europe and Central Asia, 71% of countries were high-income

...AND IN 2023
- Only 13% of South Asian countries are low-income
- 10% of Middle East and North Africa are now low-income
- In Latin America and Caribbean, 44% of countries are now high-income
- In Europe and Central Asia, share of high-income countries is now 69%

Source:Indian Express

INDIA MARITIME CENTRE (IMC)

Context: The Ministry of Ports, Shipping, and Waterways (MoPSW) is establishing the India Maritime Centre (IMC).

Background:

- The Task Force for the IMC was formed in January 2024 and divided into subgroups focused on Awareness and Outreach, Infrastructure and Operationalization, and Procedure and Documentation. To date, two meetings of the entire Task Force and three subgroup meetings have been conducted at the Ministry.

About India Maritime Centre (IMC):

- India Maritime Centre (IMC) is a cornerstone initiative of the Ministry of Ports, Shipping, and Waterways (MoPSW) **under the Maritime India Vision 2030.**

- The IMC aims to provide a unified platform for the Indian maritime industry, acting as a think tank for policy formulation and industry recommendations.

- Its primary goals **include strengthening India's participation** in the International Maritime Organization (IMO) and global maritime forums, creating a robust domestic maritime sector through a unified and synchronized approach, conducting flagship events to build a strong global brand for the Indian maritime cluster, providing expert analysis and recommendations for sustainable growth, **establishing platforms for industry stakeholders** to collaborate and network, and creating a pool of funds to support the industry, including startups.

- The establishment of the India Maritime Centre marks a significant milestone in MoPSWs efforts to

- bolster the maritime sector in India.

- The IMC will serve as a central platform for collaboration, innovation, and policy advocacy, ensuring sustainable growth and enhancing India's position in the global maritime community.

- The IMC is poised to be a pivotal institution in advancing India's maritime interests both domestically and internationally.

- By fostering collaboration, driving policy advocacy, and providing expert analysis, the IMC will play a crucial role in shaping the future of India's maritime sector.

Source: PIB

INTERNATIONAL COURT OF JUSTICE (ICJ)

Context: The International Court of Justice (ICJ) said on July 19 that Israel's occupation of the West Bank and East Jerusalem violated international law, and its presence in Palestinian territories should come to an end as soon as possible.

Background:

- Israel has occupied the West Bank and East Jerusalem since the Six-Day War in 1967. Prior to this, the territories were under Jordanian control.

About International Court of Justice:

- The ICJ is the principal judicial organ of the United Nations (UN).

- It was **established in June 1945** by the Charter of the United Nations and began work in April 1946.

- The court is the successor to the Permanent Court of International Justice (PCIJ), which was brought into being through, and by, the League of Nations, 1922. Like the PCIJ, the ICJ is based at the Peace Palace in The Hague.

- It is the only one of the six principal organs of the UN that is not located in New York City. The other five organs are the General Assembly, the Security Council, the Economic and Social Council, **the Trusteeship Council, and the Secretariat**.

- According to the ICJ's own description, its role is "to settle, in accordance with international law, legal disputes submitted to it by States and to give advisory opinions on legal questions referred to it by **authorized United Nations organs and specialized agencies".** The court "as a whole must represent the main forms of civilization and the principal legal systems of the world".

- English and French are the ICJ's official languages.

- All members of the UN are automatically parties to the ICJ statute, but this does not automatically give the ICJ jurisdiction over disputes involving them. The ICJ gets jurisdiction only if both parties consent to it.

- The judgment of **the ICJ is final and technically binding** on the parties to a case. There is no provision of appeal; it can at the most, be subject to interpretation or, upon the discovery of a new fact, revision.

- However, the ICJ has no way to ensure compliance of its orders, and its authority is derived from the willingness of countries to abide by them.

- The ICJ has 15 judges who are elected to nine-year terms by the UN General Assembly and Security Council, which vote simultaneously but separately.

- To be elected, a candidate must receive a majority of the votes in both bodies.

- A third of the court is elected every three years.

- Four Indians have been members of the ICJ so far.

Source: Indian Express

MERCOSUR

Context: Bolivia to get full membership in MERCOSUR in order to increase trades with member countries.

Background:

- Bolivia's potential accession to MERCOSUR has been in the pipeline ever since it signed a protocol of **accession to MERCOSUR in 2012.**

About MERCOSUR

- **MERCOSUR (Southern Common Market)** is a regional trade bloc in South America aimed at promoting free trade and economic cooperation among its member countries.

Founding and Members:

- Established: 1991 with the Treaty of Asunción.

- Founding Members: **Argentina, Brazil, Paraguay, and Uruguay.**

- Current Members: Argentina, Brazil, Paraguay, Uruguay, Venezuela (suspended since 2016) and Bolivia (in the process of full membership).

Objectives:

- Economic Integration: Enhance regional trade by reducing tariffs and creating a common external tariff.

- Political Cooperation: Foster political dialogue and cooperation among member states.

- Economic Development: **Promote balanced economic development across the region.**

Key Features:

- Customs Union: Establishes a common external tariff and promotes the free movement of goods and services within the bloc.

- Trade Agreements: **Negotiates trade agreements with other countries and blocs.**

- Coordination: Coordinates economic policies and regulations among members to facilitate integration.

Source: Financial Express

NIPAH VIRUS

Context: A 14-year-old boy succumbed to the Nipah virus in Kerala.

Background:

- Kerala has experienced Nipah outbreaks since 2018, and the state remains at risk due to its fruit bat habitats.

About Nipah Virus :
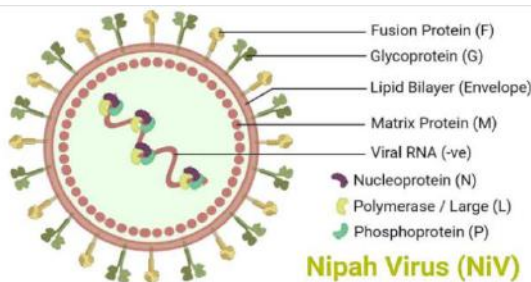
- The Nipah virus (NiV) is a zoonotic virus, meaning it can be transmitted from animals to humans.

- Fruit bats (particularly species belonging to the Pteropus genus) are natural hosts of the virus, and pigs can also carry it.

- Human transmission occurs through direct contact with infected bats, pigs, or other individuals.

- It was first **identified during an outbreak in Malaysia in 1998-1999** among pig farmers and those in close contact with pigs and later spread to Bangladesh and eastern India.

- India experienced outbreaks in Siliguri (2001) and Kerala (since 2018).

Symptoms and Severity:

- The incubation period **ranges from 4 to 14 days after exposure.**

- Initial symptoms resemble influenza: fever, headache, muscle pain, and sore throat.

- Severe cases can lead to encephalitis (brain inflammation), respiratory issues, seizures, and coma.

- **Mortality rates vary (40% to 75%)** depending on the outbreak and healthcare infrastructure.

Treatment:

- There is no specific **medication or vaccine for Nipah virus.**

- Managing symptoms is the primary approach.

Prevention involves:

- Avoiding exposure to sick **animals (especially bats and pigs).**

- Disinfecting surfaces.

- Taking precautions around infected individuals.

Source: Hindu

SHIGELLA INFECTION

Context: Recently, the Indian Council of Medical Research (ICMR) has found an Indian partner to manufacture the breakthrough vaccine for shigella infection.

Background:

- This development is a crucial step towards combating shigellosis, especially in low- and middle-income countries where the disease burden is highest.

About shigella infection:

- It is an intestinal infection caused by a family of bacteria known as shigella.

- The four species of Shigella are Shigella sonnei, Shigella flexneri, Shigella boydii and Shigella dysenteriae.

Key Points:

- Symptoms: Diarrhea, Stomach pain or cramps, Fever, Nausea or vomiting.
- Transmission:
  - It is very contagious. Shigella is transmitted via the fecal–oral route, through direct person-to-person contact, or indirectly through contaminated food, water, or fomites.
  - Spread of Shigella through both direct and indirect sexual contact has been widely reported, primarily among men who have sex with men (MSM).
  - Humans are the primary natural reservoir, although nonhuman primates also can be infected.
- Vulnerable Groups: Children under age 5 are most likely to get shigella infection, but it can occur at any age.
- Vaccine: Currently, no vaccines are available for shigella.

Source: The Print

SYPHILIS

Context: Improved testing has led to the detection of over 6,000 cases of syphilis, according to data from the Mumbai AIDS Control Society (MDACS) between 2018-19 and 2022-23.

Background:

- The antibiotic penicillin is effective in eradicating the disease completely.

What is syphilis?

- Syphilis is a sexually transmitted infection (STI).
- It is caused by a bacteria called Treponema pallidum
- Syphilis is transmitted during oral, vaginal and anal sex, in pregnancy and through blood transfusion.
- Syphilis in pregnancy may lead to stillbirth, newborn death and babies born with syphilis (congenital syphilis).Antibiotic medication treats syphilis.
- Untreated syphilis can lead to serious health problems, including blindness and damage to your brain, heart, eyes and nervous system.

Who might get syphilis?

- Anyone who's sexually active can get syphilis, but your risk is higher if you:
  - Have unprotected sex, especially if you have several partners.
  - Are a man who has sex with men (MSM).
  - Have HIV.
  - Have had sex with someone who's tested positive for syphilis.
  - Tested positive for another STI, such as chlamydia, gonorrhea or herpes.

Source: Indian Express

Economy

LIBERALISED REMITTANCES SCHEME (LRS)

Context: Spending money overseas through credit card does not come under the liberalised remittance scheme limit yet, but it may change in the near future. As per a media report published recently, bringing credit card spend under the LRS is now on the government's radar.

Background:

- For the uninitiated, the finance ministry in May 2023 had brought credit card spending under the LRS limit. However, it was announced on June 28 that overseas spending using credit cards will be put on hold in order to give time to the banks to streamline their requisite IT systems.

About LIBERALISED REMITTANCES SCHEME (LRS)

- Under the RBI's **Liberalised Remittance Scheme (LRS),** all resident individuals are allowed to freely remit up to $2,50,000 in each financial year abroad for any permissible current or capital account transaction or a combination of both.

- This scheme was introduced on **February 4, 2004, with a limit of $25,000.** The LRS limit was later revised in stages consistent with prevailing macro and micro economic conditions.

- In case of remitter being a minor, the LRS declaration form must be countersigned by the minor's natural guardian. The Scheme is not available to corporates, partnership firms, HUF, Trusts etc.

- The remittances can be made in any freely convertible foreign currency. Permanent Account Number (PAN) is mandatory for all transactions under LRS.

- If government includes credit card spending under the LRS, credit card users may have to cough up 20 percent tax collection at source (TCS).

- Tax collected at source is the sum collected by the seller from the buyer at the time of sale so that it can be deposited with the tax authorities.

- The TCS for foreign remittances under **LRS was raised to 20 percent in Budget 2023** from the earlier rate of 5 per cent. This included international travel, sending money overseas, and other remittances.

- This new tax rate **came into force on Oct 1, 2023** which removed the threshold of ₹7 lakh for triggering TCS on LRS.

- These changes, however, are not applicable in case of education and medical expenses.

Additional Information

- The legal framework for administration of foreign exchange transactions in India is provided by the **Foreign Exchange Management Act, 1999, (FEMA),** which came into force with effect from June 1, 2000.

- Under FEMA, all transactions involving foreign exchange have been classified either as capital or current account transactions.

Source: Livemint

PURCHASING MANAGERS' INDEX (PMI)

Context: Purchasing Managers 'Index (PMI) increased to 58.3 in June.

Background:

- Increased demand for manufactured goods led to higher production levels. This was driven by both domestic consumption and export orders.

About Purchasing Managers' Index (PMI)

- The Purchasing Managers' Index (PMI) is a survey-based measure of current and future business conditions that asks respondents about changes in their perception of key business variables compared to the previous month.

- The PMI is usually released at the start of every month. It is, therefore, considered a good leading indicator of economic activity.

- The PMI is calculated separately for the manufacturing and services sectors.

- The PMI ranges from 0 to 100:

  o Above 50 indicates expansion.

  o Below 50 indicates contraction.

  o A reading at 50 signifies no change.

Purpose:

- PMI provides early insights into economic trends.

- It helps decision-makers, analysts, and investors make informed choices ahead of official data releases.

Source:Hindustantimes

CRITICAL MINERAL RECYCLING: GOVT PLANS PLI SCHEME TO BOOST CIRCULAR ECONOMY

Context: The Ministry of Mines is in the initial stages of designing a Production Linked Incentive (PLI) scheme to boost the recycling of critical minerals in India.

Background:

- This move aims to foster a circular economy and bolster domestic supply chains, following a lacklustre response to recent auctions of critical mineral blocks.

Critical Minerals

- Critical minerals are those minerals that are essential for economic development and national security, the lack of availability of these minerals or concentration of extraction or processing in a few geographical locations may lead to supply chain vulnerabilities.

- The Government India has identified 30 minerals as Critical Minerals.

- The 30 critical minerals are Antimony, Beryllium, Bismuth, Cobalt, Copper, Gallium, Germanium, Graphite, Hafnium, Indium, Lithium, Molybdenum, Niobium, Nickel, PGE, Phosphorous, Potash, REE, Rhenium, Silicon, Strontium, Tantalum, Tellurium, Tin, Titanium, Tungsten, Vanadium, Zirconium, Selenium and Cadmium.

- They are elements that are the building blocks of essential modern-day technologies.These minerals are now used everywhere from making mobile phones, and 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.

Proposed PLI Scheme and its need

- The proposed PLI scheme aligns with policy recommendations from NITI Aayog and complements **the Battery Waste Management Rules (BWMR),** 2022, which mandate phased recycling of used electric vehicle (EV) lithium-ion batteries from 2026 onwards.

- The PLI scheme, while yet to be finalised, will target e-waste recycling– often referred to as "urban mining"– to recover critical minerals such as lithium, copper, cobalt, graphite, chromium, and silicon.

- These minerals are crucial for clean energy technologies like **solar PV modules, wind turbines, energy storage systems, and EVs,** as well as consumer electronics.

- Some recyclers argue the scheme should benefit only those extracting high-purity critical minerals suitable for reuse as primary inputs.

- Others advocate for a wider scope that includes the production of black mass, which is shredded and processed e-waste rich in minerals **including lithium, manganese, cobalt, and nickel,** since most Indian recyclers currently lack capacities to extract battery-grade minerals from black mass.

- India's e-waste generation is poised to surge, driven by rapid growth in solar and wind energy infrastructure and EV adoption.

- Industry estimates project solar PV module waste to jump from 100 kilotonnes (kt) in FY23 to 340 kt by 2030**. Additionally, 500 kt of EV batteries** are expected to reach recycling units in the coming years.

- Research indicates that recycling critical minerals can significantly reduce the need for virgin ores and new mines.

- The need to incentivise the growth of critical mineral recycling has become all the more urgent after most critical mineral blocks offered by the Mines Ministry failed to pass the technical bids stage, which requires at least three eligible bidders. This indicates a lack of investor interest in domestic mining of critical minerals.

For Your Information:

- The new incentives will also build on the **Battery Waste Management Rules (BWMR)** notified in 2022 by the Central Pollution Control Board.

- These rules mandate that producers of batteries containing lithium, nickel, cobalt, and lead ensure environmentally sound management of waste batteries through Extended Producer Responsibility (EPR) compliance.

- EPR compliance, based on the polluter pays principle, holds producers accountable for managing the waste generated by their products. Producers can meet compliance by trading credits with recyclers

Source: Indian Express

CREDIT - DEPOSIT RATIO

Context: The Reserve Bank of India has told banks to find ways to bridge the gap between credit and deposit growth and reduce credit - deposit ratio, raising concerns over the persistent higher credit growth than deposit mobilisation which could pose a risk in business sustainability.

Background:

- The central bank Governor Shaktikanta Das held a meeting with the heads of public sector banks and select private sector lenders where he spoke about high credit-deposit ratio and the resultant liquidity risk management challenges.

About Credit - Deposit Ratio:

- The credit to deposit ratio is a crucial metric that provides insights into the relationship between a bank's loans (credit) and its deposits. In simple terms, it measures how much of a bank's deposits are being lent out as loans.

Importance of credit to deposit ratio

- **Liquidity management:** A balanced credit to deposit ratio ensures that a bank maintains sufficient liquidity. When the ratio is too high, it indicates that most deposits are tied up in loans, leaving little room for emergencies or unexpected withdrawals. Conversely, an excessively low ratio may imply that the bank is not utilising its funds efficiently.

- **Risk assessment:** Regulators and investors closely monitor this ratio. A high ratio could signal potential risk, as the bank may struggle to meet depositors' demands during economic downturns. A low ratio might indicate conservative lending practices, but it could also mean missed revenue opportunities.

- **Profitability and growth:** A well-managed credit to deposit ratio allows banks to strike a balance between profitability and growth. It ensures that loans generate interest income while maintaining a stable deposit base. Banks with an optimal ratio can expand their lending portfolio without compromising stability.

- **Economic indicator:** The credit to deposit ratio reflects the overall economic health. A rising ratio during economic booms suggests increased lending activity, while a declining ratio during recessions indicates cautious lending.

- Regulatory compliance: Many central banks set guidelines for this ratio to maintain financial stability. Banks failing to comply may face penalties or restrictions.

Source: Economic Times

ZOMBIE STARTUPS

Context: Koo, the Indian social media platform that aimed to rival Twitter has shut down. This has brought the topic of zombie startups into limelight once again.

Background:

- Tech startups once blessed with huge fundingsare transforming into "zombies".

Key takeaways

- Startups that raised a huge amount of money over the boom cycle but aren't producing nearly enough revenue to justify the valuation are called 'Zombie startups'.

- Or to define it another way, Zombie startups, also known as "walking dead" companies, are businesses that continue to operate despite being unprofitable or stagnant. A company might turn into a zombie because of multiple reasons:

  o **Lack of Funding:** Zombie startups may have received initial funding but failed to secure follow-up investments. As a result, they struggle to grow and remain in a state of limbo.

  o **Ineffective Business Models:** Some startups have flawed business models that prevent them from achieving sustainable growth. They may not address market needs or fail to adapt to changing conditions.

  o **Management Challenges:** Poor leadership, mismanagement, or lack of strategic vision can turn a promising startup into a zombie. Without effective decision-making, they drift without purpose.

o **Market Conditions:** Economic downturns or industry-specific challenges can contribute to a startup's zombification. When external factors hinder growth, companies may become zombies.

Source: Business Standard

UNION BUDGET 2024-25

Context: Finance Minister Nirmala Sitharaman presentedher seventh Budget in Parliament.
Background:-

- The Union Budget 2024 reflected the changed political landscape, with the BJP no longer enjoying sole majority. Announcements were made for politically significant states such as Andhra Pradesh and Bihar, ruled by major NDA member parties.

Key highlights of the budget

- The government cut the fiscal deficit target to 4.9 per cent of the Gross Domestic Product (GDP) for financial year 2024-25 from 5.1 per cent in the interim Budget.

- The Centre's outgo on subsidies is budgeted to decline to a five-year-low in 2024-25, both in absolute terms and as a percentage of gross domestic product (GDP).The lower spend is on account of two factors :

  o The first is the discontinuation of the free, additional 5-kg grain allocation to the 80 crore-plus PDS beneficiaries under the Pradhan Mantri Garib Kalyan Anna Yojana.

  o The second major driver for the Centre's lower subsidy provision is fertiliser. At Rs 164,000 crore, the budgeted fertiliser subsidy for 2024-25 is down from the record Rs 251,339 crore of 2022-23, which resulted from high global prices following Russia's invasion of Ukraine.

- Finance Minister announced to withdraw the 2 % equalisation levy on the e-commerce supply of goods or services with effect from August 1, 2024.

- In an attempt to counterbalance the variability of renewable energy and strengthen India's baseload power capacity, budget announced plans to set up the **country's first 800 MW advanced ultra supercritical (AUSC)** thermal plant based on indigenous technology.

- Govt announced the setting up of e-commerce export hubs across the country in public private partnership (PPP) mode along the lines of several Southeast Asian countries that are benefiting from the rapid growth of e-commerce exports.

- Budget **announced the Pradhan Mantri Awas Yojana-Urban 2.0,** with Rs 2.2 lakh crore central assistance over five years, to construct one crore additional houses.

- With a saturation approach for achieving social justice, **FM announced a new scheme for socio-economic development of 63,000** tribal villages that will aim to cover 5 crore people from tribal communities. The government will launch the Pradhan Mantri Janjatiya Unnat Gram Abhiyan for the purpose.

- Twelve new industrial parks will be created under the National Industrial Corridor Development Programme.

- A Package is announced for Vizag-Chennai Industrial corridor. Center will provide Rs 15,000 crore financial assistance for Andhra Pradesh for development of Amaravati.

- Centre to finance and early completion of Polavaram Irrigation project, considered as a lifeline for

Andhra Pradesh and its farmers.

- The finance minister announced several schemes for Bihar in her speech. The schemes are a part of a larger plan titled "Purvodaya", which covers the all-round development of eastern States including Bihar, Jharkhand, West Bengal, Odisha, and Andhra Pradesh.

- The government **will support building of expressways in Bihar at a total cost of ₹26,000 crore.** Power projects, new airports, medical colleges and sports infra will be also constructed in the state.

- FMannounced three new employee-linked incentive schemes. The three schemeswill align with enrolment in the Employee Provident Fund Organisation and focus on the recognition of first-time employees, as well as support to both employers and employees.

  o Scheme A will support EPFO enrollments for first-timers in the workforce, with a one month wage **payout for all formal sectors in three installments, upto Rs. 15,000 per month,** with an eligibility limit of a salary of Rs. 1 lakh per month.

  o Scheme B pertains to the creation of jobs in manufacturing. The scheme will incentivise additional employment in the sector linked to first time employees. An incentive to employee and employer will be provided with respect to EPFO in first 4 years of employment.

  o Scheme C pertains to support to employers. It is to be an employer- focused scheme which will focus on additional employment in all sectors for those earning within a salary of 1 lakh. The government will reimburse employers **up to Rs. 3000 per month for two years towards** EPFO contribution for each additional employee.

Source:Indian Express

VENTURE CAPITAL FUND

Context: Union Finance Minister Nirmala Sitharaman announced the proposal to set up a venture capital fund of Rs 1,000 crore dedicated to the space economy.

Background:

- The announcement, made during the Union Budget presentation for the fiscal year 2024-25, highlights the government's commitment to advance the Indian space sector.

What is a Venture Capital Fund?

- A venture capital fund is a pooled investment vehicle that manages the money of investors seeking private equity stakes in startups and small- to medium-sized enterprises with strong growth potential.

Key Characteristics

- **High Risk, High Return:** VC funds target high-growth firms that are also quite risky. The potential for high returns is what attracts investors.

- Long-Term Engagement: Investments are usually long-term, as it takes time for startups to grow and become profitable.

- **Active Involvement:** VC funds often take a hands-on approach, providing not just capital but also guidance and managerial expertise.

How private venture funds work?

- Raising Capital: VC funds raise capital from external investors, which can include wealthy

individuals, investment banks, and other financial institutions.

- Investment Process: Fund managers review numerous business plans to identify potential high-growth startups. They then create a prospectus, a formal document outlining the investment details, which is shared with potential investors.

- Stages of Investment: VC investments can be categorized into seed capital, early-stage capital, or expansion-stage financing, depending on the maturity of the business at the time of investment.

Benefits for Startups

- Financial Support: Startups receive the necessary funds to grow their operations.

- Expertise and Guidance: In addition to financial support, startups benefit from the technical and managerial expertise of the venture capitalists.

Source: Business Standard

GAZA'S TELL UMM AMER

Context: The World Heritage Committee (WHC) decided to include the Palestinian site of Tell Umm Amer in both the UNESCO World Heritage Site List and the List of World Heritage in Danger during its 46th session in New Delhi.

Background:

- Also known as the 'Monastery of Saint Hilarion', the site lies in Gaza Strip which is under relentless attack from Israel.

About TELL UMM AMER

- Situated on the coastal dunes of Nuseirat Municipality, 10 km south of Gaza City, the ancient Christian monastery was founded in the fourth century by Hilarion the Great (291-371 CE), often regarded as the father of Palestinian monasticism.

- Hilarion was born in Tabatha, near the site of his future monastery. He became a monk at 15. As his fame for performing miracles spread, his small hermitage evolved into a thriving monastery, attracting followers from far and wide who embraced Hilarion's mendicant lifestyle.

- The present-day archaeological remains of the site span more than four centuries, from the time of Hilarion to the Umayyad period.

- The ruins comprise five successive churches, bath and sanctuary complexes, geometric mosaics, and an expansive crypt making the monasteryone of the largest in the Middle East.

- The UNICEF listing of the site refers to Tell Umm Amer as the first monastic community in the Holy Land, and "**a hub of religious, cultural, and economic interchange".**

- The monastery was likely abandoned after a seventh century earthquake, only to be uncovered by local archaeologists in 1999.

- With Israel's ongoing onslaught reducing much of the Gaza Strip to rubble, monuments and sites of cultural significance have not been spared. This underscores the importance of Tell Umm Amer's inclusion in the UNESCO lists.

- The 1972 World Heritage Convention, to which Israel is a party, outlines responsibilities for identifying, protecting, and preserving World Heritage sites. Importantly, states must not take any deliberate measures that could cause direct or indirect damage to these sites.

- The inclusion on the list of World Heritage in Danger opens the door to enhanced international technical and financial assistance mechanisms to guarantee the protection of the property and, if necessary, to help facilitate its rehabilitation.

Source: Indian Express

REPORT ON CURRENCY AND FINANCE (RCF)

Context: Report on Currency and Finance (RCF) for 2023-24 was recently released by the reserve bank.

Background:

- Report mentions the challenges and opportunities coming along with digitisation.

Key takeaways from the report

- **Digitalisation and Consumer Risks**:Impulsivity and Security Concerns -

   o   Digitalisation improves accessibility and convenience of financial services.

   o   Digitalisationexposes consumers to impulsive spending, herd behaviour, and data security.

   o   In India, the average cost of data breaches was $2.18 million in 2023, a 28% increase since 2020, though less than the global average.

   o   **Common attacks in India**: phishing (22%) and stolen/compromised credentials (16%).

- Impact on Monetary Policy and Financial Stability:Behavioural Changes and Policy Implications -

   o   Digitalisation-induced changes in consumer and financial intermediary behaviour can affect monetary policy.

   o   Central banks need to incorporate digitalisation aspects into models for effective monetary policy and financial stability goals.

- **RBI's Proactive Measures**: Harnessing Benefits and Mitigating Risks -

   o   The RBI is undertaking policy measures to harness digitalisation benefits while mitigating emerging risks.

   o   Digitalisation offers immense opportunities for India to transition from an emerging market economy to an advanced economy.

- **Boost to External Trade**:Enhancing Trade and Remittances -

   o   Digitalisation can boost India's external trade in goods and services, leveraging its comparative advantage in modern services exports.

   o   Digitalisation in international payment systems can reduce the cost of receiving remittances, leading to higher income or savings for recipients.

- **Role of Digital Trade Policies**:Cross-border Digital Trade-

   o   Cross-border digital trade policies are crucial for harnessing new opportunities, building trust, and coordinating regulatory aspects like data security and cybersecurity.

   o   The internationalisation of the rupee is progressing, backed by a comprehensive and integrated policy approach.

Source:Indian Express

GEOGRAPHY

SHYOK RIVER

Context: Five army personnel died early Saturday morning while de-inducting or withdrawing from a military training activity that involved crossing the Shyok River at the Daulat Beg Oldie (DBO) area of eastern Ladakh.

Background:

- Their Russian-origin T-72 tank got swept away by the Shyok River due to a sudden increase in water levels.

About SHYOK RIVER

- The Shyok River originates at the Rimo Glacier in the Karakoram Range in the Indian-administered union territory of Ladakh.

- It is a tributary of the Indus River.

- Its alignment is very unusual, originating from the Rimo glacier, it flows in a southeasterly direction and, joining the Pangong range, it takes a northwestern turn, flowing parallel to its previous path.

Tributaries:

- The Nubra River, originating from the Siachen glacier, is a significant tributary of the Shyok River.The Nubra River,also behaves like the Shyok. The southeasterly flowing river Nubra takes a northwest turn on meeting the river Shyok. The similarity in the courses of these two important rivers probably indicates a series of paleolithic fault lines trending northwest-southeast in delimiting the upper courses of the rivers.

- Other tributaries include the Chang Chen Mo River, which empties into the Shyok, and the Galwan River, which originates in the southern part of Aksai Chin and joins the Shyok.

Additional Information

- The Shyok Valley is the valley of the Shyok River. It is near the Nubra Valley. Khardung La on the Ladakh Range lies north of Leh and is the gateway to the Shyok and Nubra valleys.

Source:Indian Express

VANUATU

Context: The government of Vanuatu will soon settle into a suite of new buildings funded by China, a move which has reignited concerns about Beijing's reach in the South Pacific nation.

Background:

- This initiative underscores China's strategic interests in the Pacific islands, where it has funded major infrastructure upgrades across the archipelago, competing with Western rivals for influence.

About Vanuatu :

- Vanuatu is an island country consisting of a chain of 13 principal and many smaller islands located in the southwestern Pacific Ocean.

- These islands are situated approximately east of Australia.

- The islands extend north-south in an irregular Y shape.

- The northernmost group is the Torres Islands, and southward from there, the main islands include Vanua Lava, Santa Maria (Gaua), Espiritu Santo, Aoba (Ambae), Maéwo, Pentecost, Malakula, Ambrym, Épi, Éfaté, Erromango, Tanna, and Anatom.

- Formerly the jointly administered Anglo-French condominium of the New Hebrides, Vanuatu achieved independence in 1980.

- The capital, largest city, and commercial centre is Port-Vila (Vila), on Éfaté.

Source:Money Control

PANGONG LAKE

Context: According to recent satellite images, China's military presence near Pangong Lake in eastern Ladakh is escalating.

Background:

- These images reveal extensive underground bunkers and hardened shelters at a crucial base. The base, located at Sirjap on the northern shore of Pangong Lake, serves as the headquarters for Chinese troops stationed around the lake.

Key Takeaways

- Pangong Tso, also known as Pangong Lake, is a high-altitude lake situated in the Changthang region of eastern Ladakh.

- Pangong Tso spans both India and China. Approximately 50% of the lake lies within Tibet (administered by China), while 40% is in Indian-administered Ladakh. The remaining 10% is a disputed buffer zone between India and China.

Disputed Territory:

- **The Line of Actual Control (LAC),** which separates boundary between India and China, passes through the lake.

- This geopolitical demarcation has been a point of contention between the two countries.

- India controls about 45 kilometers of the lake's stretch, while China claims the rest.

- The lake's strategic significance lies in its proximity to the Chusul Valley, a historical battlefront during the 1962 India-China war.

Source:Firstpost

LEBANON-ISRAEL 'BLUE LINE' FRONTIER

Context: The United Nations (UN) has expressed deep concern over the recent escalation of tensions along the Lebanon-Israel 'Blue Line 'frontier.

Background:

- UN officials, including the UN Special Coordinator for Lebanon (UNSCOL), have urged both parties to return to a cessation of hostilities and fully implement Security Council resolution 1701.

About Blue Line
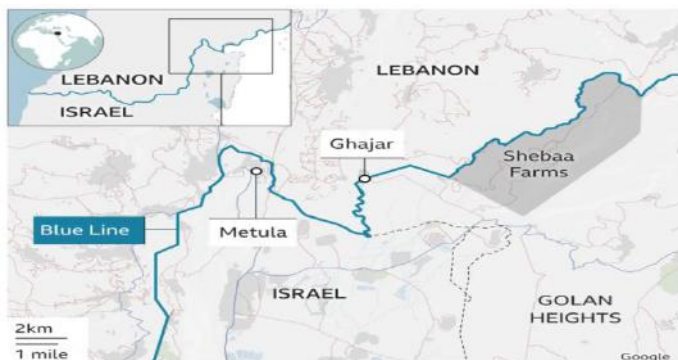
- The Blue Line is a border demarcation established by the United Nations in 2000 after Israeli troops withdrew from southern Lebanon.

- Acting as the boundary between Lebanon and Israel, it aims to prevent conflicts and establish a foundation for security arrangements in the volatile region.

- Originally, this line was the boundary established by Britain and France in the 1920s, delineating the borders between Lebanon, Syria, and Palestine.

- It's important to note that the Blue Line is not an official international border but rather a demarcation line.

Source:UN NEWS

UMLING LA

Context: A Bengaluru-based firm has claimed to have successfully tested a 100-kg Max Take Off Weight (MTOW) Unmanned Aerial Vehicle (UAV) at Ladakh's Umling La pass

Background:-

- If proved workable, it can give a huge boost to support logistics carriage, disaster and rescue events and medical relief in the higher regions of J&K, Uttarakhand, and the North Eastern states.

About UMLING LA:

- Umling La or Umlung La is the highest paved road and mountain pass in the world, located in Ladakh, India.

- The Umling La pass is traversed by a road between Chisumle and Demchok, also called the Umling La Road, which ascends to a height of 5799 metres (19024 feet) in the vicinity of the pass.

Chisumle-Demchok road/Umling La Road

- A 52-kilometre paved road was constructed between the villages of Chisumle and Demchok by the Border Roads Organization of India.

- The elevation at Umling La surpassed the record previously held by the 18,953-foot Uturuncu volcano road, Bolivia, making it the world's highest motorable road and pass.

- It is higher than Everest Base Camp, and over half the cruising altitude of commercial jet airlines.

- This seemingly impossible feat has been achieved by the BRO (Border Road Organization) as part of "Project Himank".

Source:Indian Express

NEPAL

Context: Recently, KP Sharma Oli has been appointed as Nepal's Prime Minister for the fourth time.

Background:

- He will lead a coalition government with the support of the Nepali Congress party. This appointment follows a vote of no confidence against the former Prime Minister, Pushpa Kamal Dahal.

About Nepal :

- Nepal is a landlocked country in South Asia.

- It bordered by China to the north and India to the south, east, and west.

- Five Indian states – Uttar Pradesh, Uttarakhand, West Bengal, Sikkim, and Bihar share their borders with Nepal.

Regions:

- Terai Region: The southern lowland plains, covering 17% of Nepal's area. It is an extension of the Gangetic plains of India and is known for its fertile land.
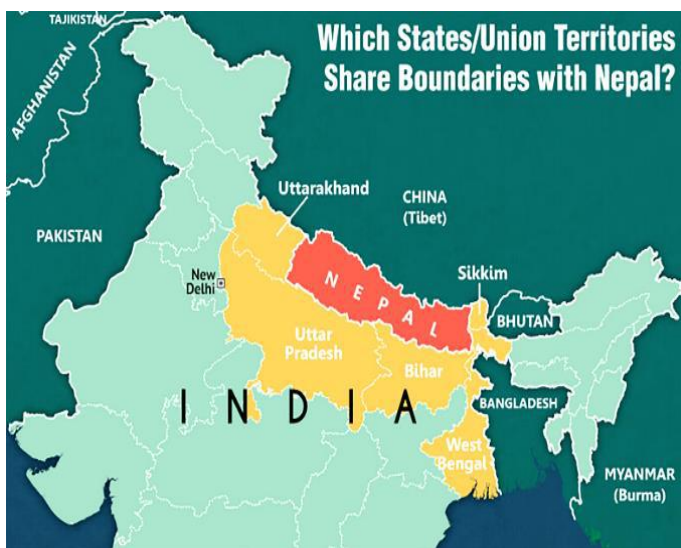
- **Hilly Region:** This region covers 68% of the country and consists of the Mahabharat Range and the lower Himalayas.

- **Himalayan Region:** The northern part, covering 15% of Nepal's area, includes the high mountain ranges and peaks like Mount Everest.

Climate Zones:

- Nepal has diverse climate zones ranging from tropical in the Terai to arctic in the high Himalayas.

- The country experiences four main seasons: spring, summer (monsoon), autumn, and winter.

Major Rivers and Lakes:

- Rivers: The major rivers include the Koshi, Gandaki, and Karnali, which flow southward into India.

- Lakes: Notable lakes include Rara Lake, the largest in Nepal, and Phewa Lake in Pokhara.

Biodiversity:

- Nepal is rich in biodiversity, with numerous national parks and conservation areas, such as Chitwan National Park and Sagarmatha National Park.

Source: Hindustantimes

RWANDA

Context: Rwanda's President Paul Kagame has been re-elected with 99.18% of the vote, the National Electoral Commission said, extending his near quarter-century in office.

Background:

- Rights groups says that election was marred by crack-down on journalists, the opposition and civil society groups , a criticism which government has rejected.

About Rwanda

- Rwanda,officially the Republic of Rwanda, is a landlocked country in the Great Rift Valley of Central Africa, where the African Great Lakes region and Southeast Africa converge.

- Located a few degrees south of the Equator, Rwanda is bordered by Uganda, Tanzania, Burundi, and the Democratic Republic of the Congo.

- It is highly elevated, giving it the soubriquet "land of a thousand hills"), with its geography dominated by mountains in the west and savanna to the southeast, with numerous lakes throughout the country.

- The climate is temperate to subtropical, with two rainy seasons and two dry seasons each year.

- It is the most densely populated mainland African country; among countries larger than 10,000 km2, it is the fifth-most densely populated country in the world.

- Its capital and largest city is Kigali.

- Coffee and tea are the major cash crops that it exports. Tourism is a fast-growing sector and is now the country's leading foreign exchange earner.

- The country is a member of the African Union, the United Nations, the Commonwealth of Nations, COMESA, OIF and the East African Community.

- Although Rwanda has low levels of corruption compared with neighbouring countries, it ranks among the lowest in international measurements of government transparency, civil liberties and quality of life.

- The population is young and predominantly rural; Rwanda has one of the youngest populations in the world.

Source: Reuters

CYPRUS

Prelims - GEOGRAPHY

Context: Turkey's president recently dampened hopes for quick talks to resolve Cyprus's ethnic division, reaffirming his support for a two-state deal that Greek Cypriots reject.

Background:

- President Recep Tayyip Erdogan ruled out a peace deal based on a United Nations-endorsed plan for

federation, speaking ahead of a military parade to mark the 50th anniversary of a Turkish invasion that split the island along ethnic lines.

About Cyprus

- Cyprus, officially the Republic of Cyprus, is an island country in the eastern Mediterranean Sea, north of the Sinai Peninsula, south of the Anatolian Peninsula, and west of the Levant.

- It is geographically a part of West Asia, but its cultural ties and geopolitics are overwhelmingly Southeast European.

- Cyprus is the third largest and third-most populous island in the Mediterranean.

- It is east of Greece, north of Egypt, south of Turkey, and west of Lebanon and Syria.

- Its capital and largest city is Nicosia. The northeast portion of the island is de facto governed by the self-declared Turkish Republic of Northern Cyprus.

- Cyprus was formally annexed by the UK in 1914. The future of the island became a matter of disagreement between the two prominent ethnic communities, Greek Cypriots, who made up 77% of the population and Turkish Cypriots, who made up 18% of the population.

- **From the 19th century onwards,** the Greek Cypriot population pursued enosis, union with Greece, which became a Greek national policy in the 1950s.

- The Turkish Cypriot population initially advocated the continuation of the British rule, then demanded the annexation of the island to Turkey, and in the 1950s, together with Turkey, established a policy of taksim, the partition of Cyprus and the creation of a Turkish polity in the north.

- Following nationalist violence in the **1950s, Cyprus was granted independence from UK in 1960 .**

- **On 15 July 1974**, a coup was staged by Greek Cypriot nationalists and elements of the Greek military junta in an attempt at enosis. This action precipitated the Turkish invasion of Cyprus on 20 July, which led to the capture of the present-day territory of Northern Cyprus.

- A separate Turkish Cypriot state in the north was established by unilateral declaration in 1983; the move was widely condemned by the international community, with Turkey alone recognising the new state. These events and the resulting political situation are matters of a continuing dispute.

- Cyprus is a major tourist destination in the Mediterranean.

Source: The Hindu

GODAVARI RIVER

Context: The recent Godavari flood has impacted over 170 villages in the Chintoor Agency of the **Alluri Sitharama Raju (ASR)** district. Most of these villages are inhabited by the Koya and Konda Reddi tribes along the banks of the Sabari and the Godavari rivers.

Background:

- The Godavari flood was triggered by heavy rainfall in the catchment areas of the Godavari River. The excess water flow led to rising water levels, inundating nearby villages and affecting communities along the riverbanks.

About Godavari river :

- The Godavari River, also known as Dakshina Ganga, is India's second longest river.

- The Godavari River rises in the Sahyadris, near Trimbakeshwar in the Nashik district of Maharashtra.

- It originates from the Bramhagiri mountains at Trimbakeshwar.

Course:

- The Godavari River flows across the Deccan Plateau from the Western Ghats to the Eastern Ghats.
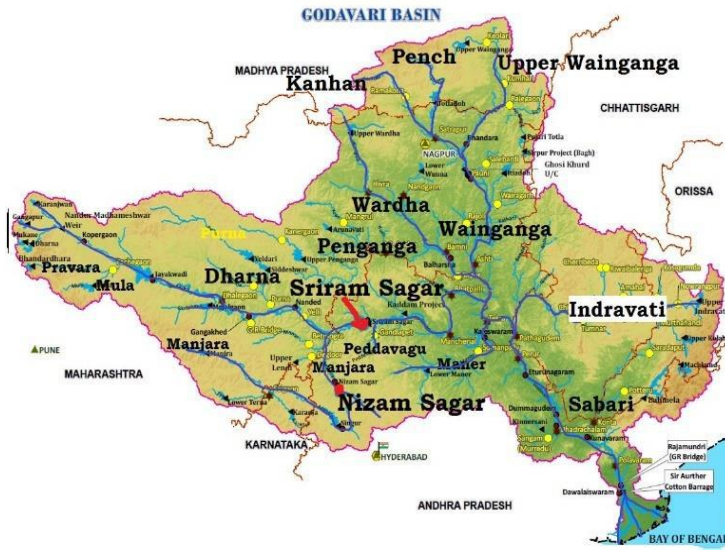
- It covers approximately 1,465 kilometers (910 miles) in a generally southeast direction, passing through the states of Maharashtra, Telangana, Andhra Pradesh, Chhattisgarh, and Odisha. Eventually, it empties into the Bay of Bengal through an extensive network of distributaries.

Tributaries:

- Right Bank Tributaries: Pravara, Manjira, Maner

- Left Bank Tributaries: Purna, Pranhita, Indravathi, Sabari

Source: Hindu

CLARION-CLIPPERTON ZONE

Context: India will apply for licences from International Seabed Authority (ISA) to explore deep-sea minerals in the Pacific Ocean. India plans to focus on the Clarion-Clipperton Zone, known to hold large volumes of polymetallic nodules containing minerals used in electric vehicles and solar panels including manganese, nickel, copper, and cobalt.

Background:

- The 36-member ISA council is meeting in Jamaica this month to negotiate the latest draft of a mining code.

About Clarion-Clipperton Zone:

- **Clarion-Clipperton Zone (CCZ)** lies in the North Pacific Ocean, stretching between Hawaii and Mexico.

- Administered by the **International Seabed Authority (ISA),** it encompasses the Clarion Fracture Zone and the Clipperton Fracture Zone—geological submarine fracture zone.

- It is known to hold large volumes of polymetallic nodules containing minerals used in electric vehicles and solar panels including manganese, nickel, copper, and cobalt. First discovered by British sailors in 1873, the potato-shaped nodules take millions of years to form.

- Up to 30 cetacean populations, including globally endangered species like blue whales, can be found in the CCZ, where 17 exploratory deep-sea mining licenses have been granted.

International Seabed Authority (ISA):

- Established in 1994, the ISA plays a critical role in regulating activities beyond national jurisdiction. This includes the international seabed, which covers most of the world's oceans.

- The 1982 **United Nations Convention on the Law of the Sea (UNCLOS)** provided the legal framework for the ISA's existence.

- With 169 members (including 168 Member States and the European Union), the ISA ensures responsible exploration and exploitation of mineral resources.

- Their headquarters in Kingston, Jamaica, serves as a hub for coordinating efforts to protect the marine environment while promoting equitable resource utilization.

Source: Economic Times

YAMUNA RIVER

Context: Several structures in the Yamunotri Dham area were damaged after water levels of the Yamuna River surged due to heavy rains.

Background:

- Yamunotri Dham is a part of Chota Char Dham (along with Gangotri, Kedarnath, and Badrinath), the four major Hindu pilgrimages sites in the Himalayas.

Key Takeaways :

- The Yamuna River originates from the Yamunotri Glacier near Bandarpoonch Peak in the Mussoorie range of the Lower Himalayas in the Uttarkashi district of Uttarakhand, India.

- It flows swiftly through the Himalayan foothills, exits Uttarakhand, and enters the Indo-Gangetic Plain.

- Along the border between Uttar Pradesh and Haryana, it feeds the Eastern and Western Yamuna canals.

Cities and Landmarks:

- The Yamuna passes through Delhi, **where it feeds the Agra Canal.**

- It then flows south-eastward near Mathura, passing through Agra, Firozabad, and Etawah.

Confluence:

- **Near Prayagraj (Allahabad), after a course of about 855 miles (1,376 km),** the Yamuna joins the Ganges (Ganga) River.

- This confluence is an especially sacred place for Hindus and hosts annual festivals and the Kumbh Mela, attended by millions of devotees.

Tributaries:

- The Yamuna is nourished by several tributaries such as Chambal River, Sindh River, Betwa River,

Hindon River Ken River and Tons River.

Source: Hindustan Times

POLAVARAM IRRIGATION PROJECT

Context: Union Finance Minister Nirmala Sitharaman has asserted that the Union government was committed to financing and early completion of the Polavaram Irrigation Project in Andhra Pradesh.

Background:

- The announcement has given fresh hopes for the people of Andhra Pradesh as the future of the project hangs in balance due to the damages it suffered in 2019-20 due to floods.

About Polavaram Irrigation Project

- The Polavaram Irrigation Project is on the river Godavari near Ramayyapeta village of Polavaram Mandal, where river emerges out of the last range of the Eastern Ghats and enters the plains.

- This multi-purpose major irrigation project is intended for development of a gross irrigation potential of 4,36,825 ha.

- The project also envisages generation of 960MW of hydro power, drinking water supply to a population of 28.50 lakh in 611 villages and diversion of 80 TMC of water to Krishna river basin.

- The project has been accorded National project status by the Central Government of India.

Source: Hindu

PALESTINE

Context: Israeli Prime Minister Benjamin Netanyahu has vowed heavy retaliation against Hezbollah following a rocket strike that tragically killed many in the Israeli-controlled Golan Heights.

Background:

- Israel aims to harm the Lebanon-based, Iran-backed Hezbollah movement, which it holds responsible for the attack, without escalating into an all-out war in the Middle East. The incident has raised concerns about further hostilities between Israel and Hezbollah, marking their worst tensions since the 2006 war.

About Golan Heights :

- The Golan Heights is a rocky plateau located in south-western Syria, approximately 60 km (40 miles) south-west of Damascus.

- Despite its relatively small size, it holds immense political and strategic significance.

- Israel seized the Golan Heights from Syria during **the closing stages of the 1967 Six-Day War.** Prior to that, it was under Syrian sovereignty.

- The Golan Heights straddles the borders of Syria and Israel.

- Israel currently controls about two-thirds of the territory, while Syria holds the remaining third.

- Despite its contested status, the Golan Heights remains a focal point in the complex dynamics of the Middle East. While the United Nations recognizes it as part of Syria, Israel's occupation persists, defying UN Resolution 242.

- The Golan Heights is bordered by Israel to the west, Lebanon to the northwest, and Jordan to the south.

Source: Livemint

THE PENCH TIGER RESERVE

Context: The Pench Tiger Reserve recently launched an advanced Artificial Intelligence (AI) system for the early detection of forest fires.

Background:

- The use of AI for early forest fire detection can significantly improve response times and help protect wildlife and habitats.

About PENCH TIGER RESERVE

- The Pench Tiger Reserve is named after the Pench River.

- Inside the park, the river flows from North to South before going on to join the Kanhan River, while splitting the Park into two, and forming the boundary of Seoni District and Chhindwara District districts of Madhya Pradesh.

- The **Meghdoot dam built** across Pench River at Totladoh has created a large water body of 72 km2 out of which 54 km2 falls in M.P. and the rest in the adjoining state of Maharashtra.

- The Pench River which emerges from Mahadeo Hills of Satpuda Ranges and the various nallas and streams which drain into it, all flow through the forests of the protected area.

- The Pench Tiger Reserve spans the southern reaches of the Satpura hills in the Seoni and Chhindwara districts of Madhya Pradesh.

- **It also extends into the Nagpur district in Maharashtra.**

Biodiversity:

- This reserve is home to a rich variety of flora and fauna.

- Tigers are the main attraction, but it also hosts large herds of Chital, Sambar, Nilgai, and Gaur (Indian Bison).

- The area supports over 325 species of resident and migratory birds, including the Malabar Pied Hornbill, Indian Pitta, Osprey, and Grey Headed Fishing Eagle.

Vegetation:

- The undulating terrain features a mosaic of vegetation, ranging from moist sheltered valleys to open, dry deciduous forests.

- Teak, saag, mahua, and various grasses and shrubs thrive here.

- The Pench region is the real-life setting of Rudyard Kipling's famous novel, **"The Jungle Book".**

Source: PTI

TALLEY WILDLIFE SANCTUARY

Context: Recently, a team of researchers from the Zoological Survey of India recorded the forest-dwelling frog from the Talley Wildlife Sanctuary and named it as Xenophrys apatani.

Background:

- The discovery was made by a team of researchers from the Zoological Survey of India (ZSI) in Shillong, in collaboration with their colleagues from ZSI, Pune, and ZSI, Itanagar.

About Talley Valley

- Talley Valley Wildlife Sanctuary is a protected area located in the Indian state of Arunachal Pradesh.

- The sanctuary ranges in elevation from 1,200 to 3,000 meters (3,900 to 9,800 feet) and features subtropical and temperate broadleaved and conifer forests.

- Notable species include the clouded leopard, Malayan giant squirrel, Indian muntjac, and Asian palm civet.

- Additionally, 130 bird species have been observed, including the black eagle, collared owlet, and Verditer flycatcher.

- The sanctuary is also home to 16 endangered plant species, such as Panax sikkimensis, Acer hookeri, and Lilium grandiflora.

Xenophrys Apatani

- The Xenophrys apatani is a newly discovered species of horned frog found in the Tale Wildlife Sanctuary in Arunachal Pradesh, India.

- It has been named after the Apatani tribe, which predominantly resides in the Lower Subansiri Valley of Arunachal Pradesh.

- It is distributed along the Eastern Himalayan and the Indo-Burma biodiversity hot spots of the country.

Source:Hindustantimes

MUDUMALAI TIGER RESERVE

Context: For the first time, a large-scale migration of Common Grass Yellow was observed during the three-day butterfly survey which concluded at the Mudumalai Tiger Reserve (MTR) recently.

Background:

- Other highlights of **the survey include the Malabar Raven,** Paris Peacock, Malabar Banded Peacock, Plain Puffin, Chocolate Albatross, Tamil Yeoman (the state butterfly) and Tamil Lacewing.

TIGER RESERVES IN INDIA

About Mudumalai Tiger Reserve (MTR)

- Mudumalai Tiger Reserve (MTR) is located in the Nilgiris District of Tamil Nadu, spread over 321 sq. km. at the tri-junction of three states, viz, Karnataka, Kerala, and Tamil Nadu.

- It lies on the Northeastern and Northwestern slopes of Nilgiri hills which is a part of the Western Ghats.

- It is part of the Nilgiris Biosphere Reserve, the first Biosphere Reserve in India.

- It has a common boundary with Wayanad Wildlife Sanctuary (Kerala) on the West, Bandipur Tiger Reserve (Karnataka) on the North, the Nilgiris North Division on the South and East, and Gudalur Forest Division on the South West.

- Ecological Significance:

  o The reserve encompasses diverse ecosystems, including montane forests, grasslands,

wetlands, and Shola forests unique to the Western Ghats.

- o It is home to a rich variety of flora and fauna, including the Indian rock python and the mugger crocodile.

Source:PIB

VAQUITA

Context: The world's most endangered marine mammal, the vaquita, is teetering on the edge of extinction. A recent survey revealed a devastating decline, with only 6-8 individuals spotted compared to 8-13 just a year ago.

Background:

- Despite their elusive nature making precise population estimates difficult, absence of calves in recent surveys highlights their critical situation.

About Vaquita

- The vaquita is a shy member of the porpoise family. Vaquitas are the most endangered of the world's marine mammals.

- Vaquitas have the smallest range of any whale, dolphin, or porpoise. It only lives in the northern part of the Gulf of California in Mexico.

- It is currently listed as Critically Endangered by the IUCN Red List;the steep decline in abundance is primarily due to bycatch in gillnets from the illegal totoaba fishery.

- **Totoaba**, is a large fish that also only lives in the Gulf of California. Because totoaba and vaquita are similar in size, gillnets illegally set for totoaba are the deadliest for vaquitas. Fishermen illegally catch totoaba for its swim bladder (an air-filled sac in the totoaba's body that helps it float), which they sell to China at high prices. In China, the swim bladders are used in soup with purported medicinal value.

- Scientists agree that for vaquitas to survive in the wild, gillnet fishing must end within vaquita habitat.

Source: Hindu

CLIMATE CHANGE FUELLED HURRICANE BERYL'S RECORD EARLY INTENSIFICATION

Context: Hurricane Beryl became the earliest storm on record during the Atlantic hurricane season to have reached the highest Category 5 classification.

Background:

- The storm, which tore through the Caribbean islands earlier this month, killed at least 11 people after triggering intense floods and dangerous winds in Jamaica, Grenada, Saint Vincent and the Grenadines, and northern Venezuela.

How are hurricanes formed?

- Hurricanes, or tropical storms, form over warm ocean waters near the equator.

- When the warm, moist air from the ocean surface rises upward, a lower air pressure area is formed below.

- Air from surrounding areas with higher air pressure rushes into this low pressure area, eventually rising, after it also becomes warm and moist.

- As warm, moist air rises, it cools down, and the water in the air forms clouds and thunderstorms.

This whole system of clouds and winds gains strength and momentum using the ocean's heat, and the water that evaporates from its surface.

- Storm systems with wind speeds of 119 kmph and above are classified as hurricanes.

- Hurricanes are classified using the Saffir-Simpson Hurricane Wind Scale into five categories (Category 1 to Category 5) based on their sustained wind speeds.

- While Category 1 **hurricanes bring winds of 119 to 153 kmph**, Category 5 hurricanes, which are the strongest, have winds of 252 kmph or higher.

- Storms that reach Category 3 and higher are considered major hurricanes due to their potential to inflict significant damage.

How did Beryl become a Category storm?

- Within 24 hours of emerging as a tropical depression with winds of 56.3 kmph on June 28, Beryl transformed into a hurricane.

- Over the next 24 hours, it rapidly intensified to become a Category 4 hurricane. At that point, Beryl was the first Category 4 hurricane to form in June, according to **National Oceanic and Atmospheric Administration (NOAA)**.

- On July 1, Beryl made landfall on Grenada's Carriacou Island as a Category 4 hurricane with sustained winds of over 241 kmph.

- As it travelled through the Caribbean Sea, it continued to gain strength, and became a Category 5 hurricane on July 2. This made it the earliest Category 5 hurricane seen during the Atlantic hurricane season on record.

Why did Beryl become a Category 5 hurricane so early?

- The hurricane season in the Atlantic begins in June and lasts until November. Generally, the first major hurricanes do not form until September. This is because till that time, the ocean is not warm enough either at the surface, or deeper down to fuel such strong hurricanes, according to NOAA.

- This is what makes Beryl so unprecedented. Although it is difficult to attribute a specific hurricane to global warming, scientists see unusually warmer oceans as the primary reason behind Beryl turning into a powerful storm this early in the season.

- Scientists are still debating over how exactly climate change impacts hurricanes. There is agreement, however, that at the very least, climate change makes hurricanes more prone to rapid intensification — where maximum wind speeds increase very quickly.

Source: Indian Express

SARUS CRANE

Context: The latest census in Uttar Pradesh has revealed a positive trend in the Sarus crane population.

Background:

- The sarus crane count has shown a consistent upward trend over the years from 17,329 in 2021 to 19,188 in 2022, 19,522 in 2023, and reaching 19,918 in 2024. This rise is a testament to the ongoing conservation efforts.

About Sarus Crane:

- The Sarus Crane is the tallest flying bird in the world.

- It was declared as the state bird of Uttar Pradesh in 2014.

- Distribution:

  o It is found in Southeast Asia, northern India, and northern Australia.

- Habitat:

  o Prefers wetlands such as canals, marshes, and ponds, often near human habitation.

  o Sarus Cranes are least social among crane species, usually found in pairs or small groups.

- **Threats:**

  o **Habitat Loss:** Due to agricultural expansion and urbanization.

  o **Predation:** By feral dogs, mongoose, and snakes.

  o **Human Activities**: Hunting and disturbance from human activities.

- **Conservation Efforts:**

  o Projects: The Sarus Crane Conservation Project in Uttar Pradesh involves local volunteers, NGOs, and the U.P. Forest Department.

- **Census:** Regular population monitoring and habitat protection efforts are ongoing.

- Conservation Status:

  o The Sarus is listed as vulnerable on the International Union for Conservation of Nature (IUCN) red list.

Source:Hindustan Times

MACKENZIE RIVER

Context: The Mackenzie River is currently experiencing record-low water levels.

Background:

- The low water levels are primarily due to extreme hot conditions and very little precipitation, which have led to significant evaporation. This has impacted local communities that rely on the river for transportation and fishing.

About MACKENZIE RIVER

- The Mackenzie River is located in Canada, flowing through the Northwest Territories.

- It is the longest river system in Canada, with a length of approximately 1,650 km (1,025 miles).

- The river originates from Great Slave Lake and empties into the Beaufort Sea in the Arctic Ocean.

- The river has been historically significant for transportation and natural resources.

Source:Global News

SALVINIA MOLESTA

Context: An exotic beetle released into a vastreservoir in Betul district (Madhya Pradesh) has successfully eradicated an invasive weed species, Salvinia molesta, within 18 months.

Background:

- Cyrtobagus salvinia, the exotic beetle , was imported to India after thorough research and with the necessary governmental approvals.Within 15 to 18 months, its population multiplied significantly, effectively consuming and destroying the weed.

SALVINIA MOLESTA :

- Salvinia molesta, commonly known as giant salvinia, or as kariba weed after it infested a large portion of Lake Kariba between Zimbabwe and Zambia, is an aquatic fern, native to south-eastern Brazil.

- It is a free-floating plant that does not attach to the soil, but instead remains buoyant on the surface of a body of water.

- It thrives in slow-moving, nutrient-rich, warm, freshwater. A rapidly growing competitive plant, it is dispersed long distances within a waterbody (via water currents) and between waterbodies (via animals and contaminated equipment, boats or vehicles).

- Salvinia molesta may form dense vegetation mats that reduce water-flow and lower the light and oxygen levels in the water. This stagnant dark environment negatively affects the biodiversity and abundance of freshwater species, including fish and submerged aquatic plants.

- Salvinia molesta can alter wetland ecosystems and cause wetland loss and also poses a severe threat to socio-economic activities dependent on open, flowing and/or high quality waterbodies.

- It is on the list of the World's 100 Most Invasive Species.

Source: Down To Earth

ROSEWOOD

Context: The Convention on International Trade in Endangered Species of Wild Fauna and Flora (CITES) has issued guidelines for its members involved in the sustainable harvest and trade of rosewood specimens.

Background:

- CITES oversees the international trade of various rosewood species, including those in the genera Dalbergia, Afzelia, Khaya and Pterocarpus. Currently, these species are listed in Appendix II, indicating they are not immediately threatened with extinction but could be at risk if their trade is not regulated.

About Rosewood:

- Genuine rosewoods belong to the genus Dalbergia.

- The pre-eminent rosewood appreciated in the Western world is the wood of Dalbergia nigra. It is best known as "Brazilian rosewood". This wood has a strong, sweet smell, which persists for many years, explaining the name rosewood.

- Another classic rosewood comes from Dalbergia latifolia, known as Indian rosewood. It is native to low-elevation tropical monsoon forests of south east India.

  o It grows as both an evergreen and a deciduous tree in the deciduous monsoon forests of India.

  o The tree produces a hard, durable, heavy wood that, when properly cured, is durable and

resistant to rot and insects.

  o Wood from the tree is used in premium furniture making and cabinetry, guitar bodies and fretboards, exotic veneers, carvings, boats, skis, and for reforestation.

  o **Under the Indian Forest Act, 1927** the exportation of lumber products from wild harvested D. latifolia is illegal.

- Another one is Dalbergia sissoo, known commonly as North Indian rosewood or shisham.

- It is a fast-growing, hardy, deciduous rosewood tree native to the Indian subcontinent and southern Iran.

Source: Down To Earth

JERDON'S COURSER

Context: Jerdon's Courserhas not been visually spotted in over a decade. This courser is a restricted-range endemic found locally in India in the Eastern Ghats of Andhra Pradesh.

Background:

- Once thought extinct, the species was miraculously rediscovered in 1986 near Reddipalli village in Kadapa, prompting the establishment of the Sri Lankamalleswara wildlife sanctuary.

About Jerdon's courser:

- The Jerdon's courser (Rhinoptilus bitorquatus) is a nocturnal cursorial (adapted for walking and running) bird endemic to India.

- The bird was discovered by the surgeon-naturalist Thomas C. Jerdon in 1848 but not seen again until its rediscovery in 1986.

- The Jerdon's courser is categorised as "Critically Endangered" by BirdLife International and the International Union for the Conservation of Nature and Natural Resource (IUCN) because it is believed to have a small and declining population.

- Information on its distribution, population, and habitat requirements is sparse for numerous reasons: its nocturnal habits, nature of its habitat, its shy habits and extreme rarity

Source: Times of India

SQUALUS HIMA

Context: Scientists from the Zoological Survey of India (ZSI) recently discovered a new species named Squalus Hima..

Background:

- The discovery of this new species is crucial for conservation efforts, as dogfish sharks are exploited for their fins, liver oil, and meat.

About SQUALUS HIMA:

- Squalus belongs to the genus of dogfish sharks (commonly known as spurdogs) in the family

Squalidae.

- These sharks are characterized by their smooth dorsal fin spines.

- Squalus hima was discovered off the coast of Kerala, specifically at the Sakthikulangara fishing harbor along the Arabian Sea.

- In the Indian coast, two species of Squalus are found from the southwest coast of India and the new **species, Squalus hima n.sp. very** similar to Squalus lalannei, but differs in many characteristics.

- Squalus hima sp.nov differs from other species by the number of precaudal vertebrae, total vertebrae, teeth count, trunk & head heights, fin structure and fin colour.

Importance and Conservation:

- The shark species belonging to the genus Squalus and Centrophorus are exploited for their liver oil, which contains high levels of squalene (or squalane when processed for products).

- This oil is in demand for pharmaceutical industries, especially for high-end cosmetic and anti-cancer products.

- The discovery of the new species is important to conserve such varieties of shark

Source: Hindu

GM MUSTARD DMH-11

Context: The Supreme Court recently delivered a split decision on the environmental release of genetically modified (GM) mustard DMH -11.

Background:

- Despite the dissent on the environmental release of GM mustard, the two judges were unequivocal in underlining the significance of a national policy on genetically modified organisms (GMOs). It directed the Union government to evolve a national policy on GMOs following appropriate consultations with all the stakeholders.

About Mustard cultivation

- Mustard is one of India's most important winter crops which is sown between mid-October and late November.

- Mustard is cultivated by around 6 million farmers in around 6.5-7 million hectares of land across the states of Rajasthan, Haryana, Punjab and Madhya Pradesh.

- DMH-11 has been shown to deliver 30 per cent higher yields than existing varieties. The average yield of existing mustard varieties is around 1,000-1,200 kilograms per hectare, while the global average is over **2,000-2,200 kgs.**

What is DMH-11?

- **DMH-11** is a hybrid variant of mustard developed by researchers at The Centre for Genetic Manipulation of Crop Plants, at the University of Delhi.

- **DMH-11** is a result of a cross between two varieties: Varuna and Early Heera-2. Such a cross wouldn't have happened naturally and was done after introducing genes from two soil bacterium called barnase and barstar. Barnase in Varuna induces a temporary sterility because of which it can't naturally self-pollinate. Barstar in Heera blocks the effect of barnase allowing seeds to be produced. The result is DMH-11 (where 11 refers to the number of generations after which desirable traits manifest) that not only has better yield but is also fertile.

- DMH-11 is a transgenic crop because it uses foreign genes from a different species.

Concerns

- GM mustard has been a subject of intense political debate in the country with both pro- and anti-GM activists placing their claims and counterclaims vigorously.

- Worried that a genetically modified mustard crop would impact honey production in India, honey cultivators have opposed the GM mustard variety and asked the government not to approve it for commercial cultivation.

- The DMH-11 mustard variety is herbicide tolerant, allowing farmers to spray over the crops with weed killer without harming the crops. This has raised fears that farmers may resort to excessive use of toxic herbicides which can lead to weeds becoming resistant to them and the emergence of so-called superweeds.

- Critics are also concerned about herbicide residue on GM crops.

Source: Hindu

PROJECT CHEETAH
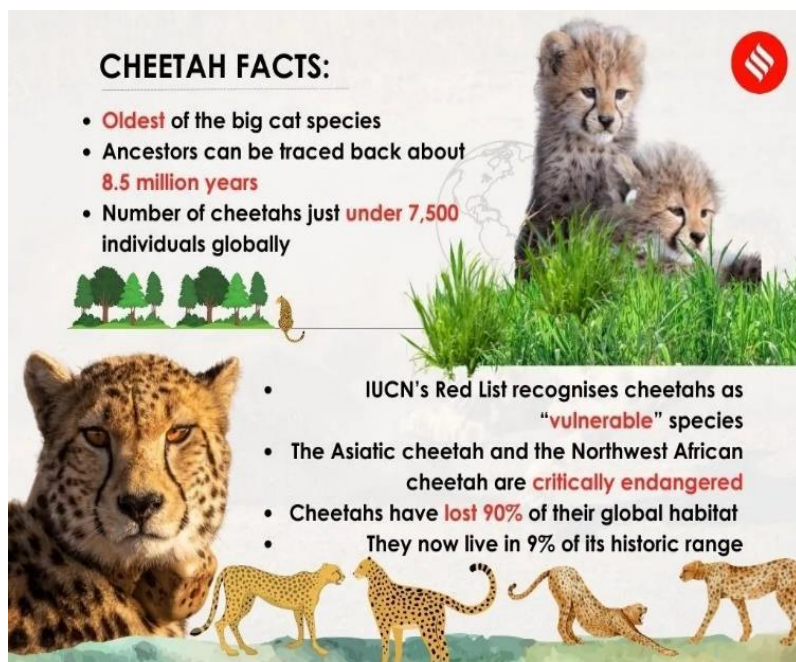
Context: Banni, a vast grassland in the southern part of Kutch, Gujarat, is being readied to host cheetahs from Africa as part of the next phase of Project Cheetah.

Background:

- Banni offers the advantage of having no leopards, making it a potential long-term site for a larger cheetah population once sufficient prey is established.

Key Takeaways :

- The Cheetah Reintroduction Project in India formally commenced on September 17, 2022, to restore the population of cheetahs, which were declared extinct in the country in 1952.

- The project involves the translocation of cheetahs from South Africa and Namibia to Kuno National Park in Madhya Pradesh.

- The project is implemented by the National Tiger Conservation Authority (NTCA) in collaboration with the Madhya Pradesh Forest Department, Wildlife Institute of India (WII), and cheetah experts from Namibia and South Africa.

CHEETAH FACTS:

- **Oldest** of the big cat species
- Ancestors can be traced back about **8.5 million years**
- Number of cheetahs just **under 7,500** individuals globally

- IUCN's Red List recognises cheetahs as **"vulnerable"** species
- The Asiatic cheetah and the Northwest African cheetah are **critically endangered**
- Cheetahs have lost **90%** of their global habitat
- They now live in **9%** of its historic range

- As of now, 20 cheetahs have been introduced in India under Project Cheetah:

- 8 cheetahs from Namibia (5 males and 3 females) introduced on September 17, 2022, at Kuno National Park in Madhya Pradesh.

- 12 cheetahs from South Africa (6 males and 6 females) introduced on February 18, 2023, at Kuno National Park in Madhya Pradesh.

Purpose of Project Cheetah:

- Reintroduce Cheetahs in India: The primary objective is to reestablish a viable and sustainable population of cheetahs in India. These magnificent animals were declared extinct

in the country in 1952, and Project Cheetah aims to reverse this loss.

- **Conservation:** Project Cheetah focuses on conserving the genetic diversity of cheetahs. By preserving the species, we ensure that future generations can appreciate and benefit from their existence.

- **Ecosystem Balance:** Reintroducing cheetahs plays a crucial role in restoring the balance of the ecosystem. As apex predators, cheetahs help regulate herbivore populations, which in turn affects vegetation and overall forest health.

- **Research and Education:** The project supports research and education related to cheetah conservation, ecology, and biology. By improving our understanding of cheetahs, we can better manage their habitats and protect them effectively.

- **Ecotourism:** Promoting ecotourism and wildlife tourism generates income and creates jobs for local communities. Simultaneously, it raises awareness about cheetah conservation, fostering a sense of responsibility among visitors.

- **Community Engagement:** Engaging local communities is vital. Project Cheetah addresses human-cheetah conflict, encourages coexistence, and ensures that communities actively participate in safeguarding these animals.

- **National Pride:** By restoring India's pride in having cheetahs, the project showcases the country's commitment to wildlife conservation. Cheetahs symbolize India's rich biodiversity and cultural heritage.

Source: Hindu

INTEGRATED DISEASE SURVEILLANCE PROGRAMME (IDSP)

Context: In India, a total of 1,862 disease outbreaks were reported to the Integrated Disease Surveillance Programme last year, the Lok Sabha was informed recently.

Background:

- The highest number of disease outbreaks were reported from Kerala.

About Integrated Disease Surveillance Programme (IDSP)

- The Integrated Disease Surveillance Programme (IDSP) is a decentralized, state-based surveillance system in India.

- It was initiated in 2004 with the assistance of the World Bank.

- The primary objective of IDSP is to detect early warning signals of impending disease outbreaks and facilitate an effective response in a timely manner.

Key points about IDSP:

- **Purpose:** IDSP aims to strengthen and maintain a decentralized, laboratory-based, IT-enabled disease surveillance system for epidemic-prone diseases.

- **Reporting:** The program includes online reporting from all states and union territories.

- **Surveillance:** IDSP monitors disease trends and detects and responds to outbreaks during their early stages through trained Rapid Response Teams (RRTs).

- **National Health Program:** It is one of the major National Health Programs under the National Health Mission.

Program Components:

- Integration and Decentralization: Surveillance units are established at the central, state, and district

levels.

- Human Resource Development: Training for State Surveillance Officers, District Surveillance Officers, RRTs, and other medical staff.

- Information Technology: Leveraging technology for data collection, analysis, and dissemination.

- Strengthening Public Health Laboratories: Enhancing diagnostic capabilities.

- Intersectoral Coordination: Addressing zoonotic diseases.

Source: Economic Times
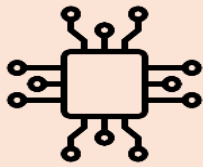
SCIENCE & TECHNOLOGY

MARS ODYSSEY

Context: NASA has recently captured an epic view of the largest volcano in our solar system named Olympus Mons using the Mars Odyssey orbiter.

Background:

- By capturing such images at different times during the year, scientists can study how the Martian atmosphere changes over the planet's four seasons. This data helps us understand the dynamics of Mars' climate and weather patterns.

About MARS ODYSSEY:

- Mars Odyssey is a NASA spacecraft that embarked on a mission to explore Mars.
- Mars Odyssey was launched on April 7, 2001 from Cape Canaveral Air Force Station, Florida.
- Its primary goal was to map the chemical elements and minerals that constitute the Martian surface. By doing so, it created the first global map of Mars, providing valuable insights into its composition.
- Mars Odyssey holds the record for the longest continually active mission in orbit around a planet other than Earth. It successfully completed its primary science mission from February 2002 through August 2004.

The main mission of the Mars Odyssey was to:

- Detect water and ice
- Study the geology of Mars
- Study the radiation environment of Mars
- Search for evidence of past or present life on Mars
- Act as a communication relay for future Mars missions

Source:[Money Control]

HOLOGRAM TECHNOLOGY

Context: Japan has introduced redesigned yen banknotes incorporating advanced 3D hologram technology to enhance security measures against counterfeiting.

Background:

- These advancements demonstrate Japan's commitment to staying ahead in the fight against counterfeit currency.

About HOLOGRAM TECHNOLOGY:

- Holograms are three-dimensional (3D) images created by recording light patterns that mimic how our eyes perceive objects in space.
- Unlike traditional photographs or flat images, holograms capture depth and parallax, making them appear lifelike and immersive.
- Their intricate design makes them a robust defence against counterfeiting.

Applications:

- Visual Displays: Holographic displays for advertising, art, and entertainment.

- Data Storage: Holographic data storage for high-capacity storage.

- Microscopy: Holographic microscopy for biological imaging.

- Interferometry: Precise measurements in fields like metrology and engineering.

- Medical Imaging: Holographic techniques in medical diagnostics.

Source: Hindu

TRANSPOSONS

Context: A recent paper by researchers at the University of California highlights the role of transposons in gene editing.

Background:

- Transposons have been called "junk" DNA and "selfish" DNA. They are "selfish" because their only function seems to make more copies of themselves and "junk" because there is no obvious benefit to their host.

About Transposons

- **Transposable elements (TEs)** or simply Transposons, also known as "jumping genes," are DNA sequences that move from one location on the genome to another.

- These elements were first identified more than 50 years ago by geneticist Barbara McClintock of Cold Spring Harbor Laboratory in New York. Biologists were initially skeptical of McClintock's discovery.

- **Barbara McClintock's** discovery of them earned her a Nobel Prize in 1983

- Over the next several decades, however, it became apparent that not only do TEs "jump," but they are also found in almost all organisms (both prokaryotes and eukaryotes) and typically in large numbers.

- For **example, TEs make up approximately 50%** of the human genome and up to 90% of the maize genome.

- Due to their mobility (or transposition), transposons facilitate horizontal gene transfer and foster the evolution of new molecular functions in prokaryotes and eukaryotes.

- As transposition can lead to detrimental genomic rearrangements, organisms have evolved a multitude of molecular strategies to control transposons.

- Apart from their biological impacts on genomes, DNA transposons have been leveraged as efficient gene insertion vectors in basic research, transgenesis and gene therapy.

Source: Nature

AXIOM-4

Context: The Indian Space Research Organisation (ISRO) has selected two out of its four trained Gaganyaan astronauts to participate in the Axiom-4 mission.

Background:

- Only one of the shortlisted astronauts will go on the mission which is supposed to take place "no earlier than October 2024," according to the information available on NASA website.

About AXIOM-4:

- The Axiom-4 mission is a private spaceflight to the International Space Station (ISS) conducted by

Axiom Space in collaboration with NASA.

- It will be the fourth private astronaut mission to the ISS.

- The mission will last for fourteen days.

Spacecraft:

- The spacecraft used for the Axiom-4 mission is a SpaceX Crew Dragon.

Indian Involvement:

- The Indian Space Research Organisation (ISRO) has shortlisted two of its four trained Gaganyaan astronauts to participate in the mission.

- These Indian astronauts will receive training from NASA, international partners, and SpaceX.

Objectives:

- The mission aims to facilitate commercial activities in space, including scientific research, technological development, and space tourism.

- It will demonstrate the viability of commercial space stations as platforms for business and innovation.

Diverse Crew:

- The Axiom-4 mission will carry a diverse crew of astronauts from different countries.

Scientific Experiments:

- During the mission, various scientific experiments and technological tests will be conducted in the unique microgravity environment of space.

Gaganyaan Mission

- The Gaganyaan Mission is India's ongoing project to send a 3-day manned mission to the Low Earth Orbit (LEO) of 400 km with a crew of 3 members and bring them safely back to Earth.

- The objective of the program is to demonstrate India's human spaceflight capabilities.

- As part of this program, two unmanned missions and one manned mission are approved by the Government of India.

- Upon its completion, India will become the fourth nation, after the US, Russia, and China, to undertake a manned spaceflight mission.

Source:Indian Express

APHELION

Context: Recently, on 5th July 2024, Earth reached aphelion.

Background:

- Our planet whirls around the sun in an ellipse, rather than a circle. On Friday (5th July) the planet reached its farthest point from its star, known as aphelion.

What causes aphelion and when does it happen?

- Earth reaches aphelion every July, and this year it occurred on Friday 5th of July.

- That Earth has an aphelion is a result of its orbit being elliptical, rather than circular. All planets in the solar system travel in elongated circles around the sun, rather than perfect ones. And it's most likely true for worlds around other stars, too.

- The culprit for all of these elliptical orbits is gravity.All the planets tend to jostle each other around

pulling their orbits from perfect circles.

- How much an orbit deviates from a perfect circle is measured by its eccentricity. The higher the eccentricity, the more elliptical the orbit.

How far are we from the sun at aphelion?

- At aphelion, Earth's distance from the sun is about 94.5 million miles. Six months later, at the start of January in the winter, Earth is at its closest point to the sun at 91.5 million miles. This location is known as perihelion.

Does aphelion affect temperatures on Earth?

- A common misconception is that Earth's varying distance from the sun is what gives rise to the seasons. It does have a small impact: We get 7 percent less sunlight at aphelion compared with the amount we are exposed to at perihelion, leading to slightly milder summers and winters in the Northern Hemisphere.

- But that effect is offset by Earth's tilt on its axis, meaning that at different points along its orbit the hemispheres slant either toward or away from the sun.

- At aphelion, which occurs just weeks after a solstice, the northern half of the planet is leaning toward the sun, resulting in the longer, hotter days of summer even though Earth is farther away.

- And at perihelion in January, the Northern Hemisphere tilts away from the sun, making the days shorter and the temperatures colder.

- In the Southern Hemisphere, this impact is reversed. Because the hemisphere leans away from the sun when Earth is at aphelion, southern winters are a little cooler than they would be if our orbit were perfectly circular. Then as the planet approaches perihelion in January, the hemisphere's lean toward the sun, making southern summers slightly warmer.

- For planets with more exaggerated eccentricities, the changing distance can have a bigger impact. Sunlight on Mars, for example, can vary as much as 31 percent along its orbit.

- It is a coincidence that Earth reaches aphelion close to when its tilt toward the sun is greatest. And this will eventually change, as other planets in the solar system gravitationally yank and squeeze Earth's orbit in the future. Its eccentricity is currently decreasing, meaning its path around the sun is becoming more circular.

Source:Newyork Times

CARBONATE COMPENSATION DEPTH

Context: Carbonate Compensation Depth is expanding according to latest research

Background:

- Below the CCD no calcium carbonate is preserved—generally there is no $CaCO_3$ beneath about 15,000 feet (4500 meters)

About Carbonate Compensation Depth

- **The carbonate compensation depth (CCD)** is the depth, in the oceans, at which the rate of supply of calcium carbonates matches the rate of solvation. That is, solvation **'compensates' supply.**

- Below the CCD solvation is faster, so that carbonate particles dissolve and the carbonate shells (tests) of animals are not preserved.

- Carbonate particles cannot accumulate in the sediments where the sea floor is below this depth.

Detailed information:

- When CaCO3-shelled organisms die, their skeletal remains begin sinking towards the bottom of the ocean. This creates a calcareous ooze that can, under pressure from the overlying water, form limestone or chalk.

- Not everything that sinks in the sea reaches the bottom, however, because the chemistry of ocean water changes with depth.

- Surface water, **where most plankton**live, is safe for shells made from calcium carbonate. These minerals are almost insoluble there.

- But the deep water is colder and under high pressure, and both of these physical factors increase the **water's power to dissolve CaCO3.** More important than these is a chemical factor, the level of carbon dioxide (CO2) in the water.

- **Deep water collects CO2 because** it's made by deep-sea creatures, from bacteria to fish, as they eat the falling bodies of plankton and use them for food. High CO2 levels make the water more acidic.

- The depth where all three of these effects show their might, where CaCO3 starts to dissolve rapidly, is called the lysocline.

- As you go down through this depth, seafloor mud starts to lose its CaCO3 content—it is less and less calcareous.

- The depth at which **CaCO3 completely disappears,** where its sedimentation is equaled by its dissolution, is the compensation depth.

Source:Down To Earth

CHAPEA – CREW HEALTH AND PERFORMANCE EXPLORATION ANALOG

Context: After spending over a year in a simulated Mars environment, a NASA crew has successfully completed their mission as part of the CHAPEA (Crew Health and Performance Exploration Analog) project.

Background:

- The four-member team emerged from their **17,000 sq ft** habitat at Johnson Space Center recently.

About CHAPEA :

- **CHAPEA is a series of analog missions conducted by NASA** to simulate year-long stays on the surface of Mars.

- It aims to assess and **collect data regarding NASA's** food system and physical and behavioral health patterns in humans, which will help during future space missions.

- Each mission will consist of four crew members living in Mars Dune Alpha, an isolated 1,700-square-foot habitat.

- The first CHAPEA crew completed their 378-day mission on July 6, 2024.

Mars Dune Alpha:

- Mars Dune Alpha **is a 3D-printed structure located at Johnson** Space Center in Houston, Texas.

- It simulates a realistic Mars habitat to support long-duration, exploration-class space missions.

Significance:

- CHAPEA's findings will be crucial for planning long-duration space missions and ensuring the well-being of astronauts on Mars.

Source: PIB

URANIUM CONTAMINATION

Context: A new study by Bhabha Atomic Research Centre (BARC) has concluded that concentration of uranium up to 60 micrograms per litre (millionth of a gram per litre or µg/l) in drinking water was entirely safe, suggesting that the recently formulated "more stringent" national standard of 30 µg/l could be counterproductive.

Background:

- For years, the acceptable level of uranium concentration in drinking water in India was 60 µg/l. In 2021, the Bureau of Indian Standards (BIS), the custodian of standards and quality in India announced a new limit of 30 µg/l, in line with recommendations of the **World Health Organization (WHO).**

About Uranium:

- Uranium is a silvery-white metallic chemical element, with atomic number 92. It is assigned the chemical symbol U.

- A uranium atom has 92 protons and **92 electrons, of which 6 are valence electrons.**

- Uranium has the highest atomic weight of all naturally occurring elements.

- Uranium occurs naturally in low **concentrations in soil, rock and water,** and is commercially extracted from uranium-bearing minerals such as uraninite.

- Uranium ore can be mined from open pits or underground excavations. The ore can then be crushed and treated at a mill to separate the valuable uranium from the ore. Uranium may also be dissolved directly from the ore deposits in the ground (in-situ leaching) and pumped to the surface.

- **Uranium mined from the earth is stored,** handled, and sold as uranium oxide concentrate (U_3O_8).

- Uranium was discovered in 1789 by Martin Klaproth, a German chemist. He named his discovery "**uran"** after the planet Uranus.

- For many years, uranium was used primarily as a colorant for ceramic glazes and for tinting in early photography.

- Its radioactive properties were not recognized until 1866, and its potential for use as an energy source was not manifested until the mid-20th century.

About the new standards

- The BARC study cited several medical researches to argue that small concentrations of uranium in drinking water pose no threat.

- **According to the researchers,** the WHO's standards of uranium concentration in drinking water — 30 µg/l — were mere guidelines, and not a recommended safety limit.

- **Finland and Slovakia** — two nations with considerable amounts of uranium consumption — have prescribed safety limits of 100 and 350 µg/l respectively; another uranium-rich country, South Africa, has a limit of 70 µg/l.

- The limits in countries like Canada and Australia that have the largest deposits of uranium among others, however, are 20 and 15 µg/l, respectively. Germany, which does not have uranium, has even lower limits.

- According to the BARC study, in the absence of any evidence of adverse health impacts at such small concentrations, considerations like geological (prevalence of uranium) and socio-economic conditions, and population dynamics must also be taken into account while deciding on national standards on uranium contamination.

Source: Indian Express

GRAPHITE

Context: State-run Coal India has secured a graphite block, a critical mineral asset, in Madhya Pradesh. It would be the company's first ever non-coal mineral mining venture.

Background:

- India imports about 69 per cent of its graphite needs - natural, synthetic and enduse products. Currently, the graphite mining industry has limited players and this offers space for willing players to venture into this business arena.

About Graphite

- **Graphiteis a crystalline form** of the element carbon. It consists of stacked layers of graphene (graphene is a single layer of carbon atoms, tightly bound in a hexagonal honeycomb lattice).

- Graphite has a greasy feel and leaves a black mark, thus the name from the Greek verb graphein, "to write."**Graphite is dark gray to black, opaque, and very soft.**

- Graphite occurs naturally and is the most stable form of carbon under standard conditions.

- Under high pressures and temperatures it converts to diamond.

- Graphite is a **non-metal but has many properties of metals**. It is a good conductor of both heat and electricity.

- Synthetic and natural graphite are consumed on a large scale (**1.3 million metric** tons per year in 2022) for uses in pencils, lubricants, and electrodes.

- About **75 percent of graphite is mined in China,** with significant amounts mined in Madagascar, Mozambique, and Brazil.

Source: Hindu Businessline

DARK OXYGEN

Context: Researchers have discovered **"dark oxygen"** being produced in the deep ocean.

Background:

- The recent study published in Nature Geoscience, a journal dedicated to Earth sciences research, shows oxygen emitted from mineral deposits 4,000 meters (about 13,000 feet) below the ocean's surface on the seafloor of **the Pacific Ocean's Clarion-Clipperton Zone (CCZ).**

Key takeaways

- Oxygen is essential for life on Earth, and we've long associated it with photosynthesis—the process by which plants and algae produce oxygen using sunlight.

- However, recent discovery challenge this understanding. Scientists have found evidence of an additional **source of oxygen called dark oxygen.**

What Is Dark Oxygen?:

- Dark oxygen is produced deep under the sea without sunlight.

- Polymetallic nodules, which are naturally occurring mineral masses found on the ocean floor, play a crucial role in this newly discovered process. These nodules, made up of metals like manganese, iron, cobalt, nickel, copper, and lithium, can generate oxygen through electrochemical activity even in the absence of light.

Implications and Significance:

- Until now, we believed that all oxygen came from photosynthetic organisms (plants and algae).

- Dark oxygen challenges this notion, suggesting that there might be alternative oxygen sources.

- It raises intriguing questions about the origins of life on Earth.

Where Did Dark Oxygen Come From?:

- Scientists discovered dark oxygen at a depth of 4,000 meters (about 13,000 feet) below the ocean's surface , specifically from the pacific ocean's Clarion-Clipperton Zone (CCZ).

- The fact that it's produced without sunlight implies that life might have existed before photosynthesis emerged.

Source: Hindustantimes

NASA'S PERSEVERANCE ROVER

Context: NASA's Perseverance rover recently made an intriguing discovery that could shed light on the ancient history of Mars and the possibility of past microbial life.

Background:

- The rover has identified a rock named "Cheyava Falls" that exhibits intriguing characteristics, suggesting it may have hosted microbial life billions of years ago.

About NASA's Perseverance rover:

- Perseverance is part of NASA's Mars 2020 Mission, which aims to study the geology, climate, and potential habitability of Mars.

- Its primary goal is to seek signs of ancient microbial life and collect samples for possible return to Earth.

Launch and Landing:

- **Launched on July 30, 2020,** from Cape Canaveral, Florida, Perseverance embarked on its journey to Mars.

- It successfully landed in Jezero Crater on February 18, 2021, after a complex entry, descent, and landing sequence.

Physical Characteristics:

- Perseverance is approximately 3 meters long, 2.7 meters wide, and 2.2 meters tall.

- Despite its car-like size, it **weighs only about 1,025 kilograms** due to careful design and lightweight materials.

Scientific Instruments:

- The rover is equipped with a suite of scientific instruments, including cameras, spectrometers, and environmental sensors.

- Its robotic arm features a drill for sampling rocks and regolith (soil) from the Martian surface.

Power Source:

- Perseverance relies on a Multi-Mission Radioisotope Thermoelectric Generator (MMRTG) for electricity.

- The MMRTG converts heat from the radioactive decay of plutonium into electrical power, allowing the rover to operate even in harsh Martian conditions.

Sample Collection and Return:

- Perseverance will collect rock and soil samples, encase them in sealed tubes, and leave them on the

Martian surface.

- A future mission (possibly by another rover) will retrieve these samples and bring them back to Earth for detailed analysis.

Source: NASA

HISTORY AND ART & CULTURE

ABHAYA MUDRA

Context: In his first speech as Leader of Opposition in Lok Sabha, Rahul Gandhi on Monday invoked the abhaya mudra, the gesture of the raised open palm that is commonly understood as conveying reassurance and a freedom from fear.

Background:-

- According to Buddhist legend, Devadatta, a cousin and a disciple of the Buddha, upon not being granted the special treatment he expected, plotted to harm the Buddha . He fed a wild elephant intoxicants and drove her on the Buddha's path. As the disciples scattered before the charging animal, the Buddha raised his hand in the abhaya mudra. The elephant is said to have calmed down immediately, gone down on her knees, and bowed her head to the Buddha.

Key takeaways

- In Sanskrit, the term mudra could mean a seal, **mark, sign, or currency, but in the Buddhist context**, it refers to "hand and arm gestures made during the course of ritual practice or depicted in images of buddhas, bodhisattvas, tantric deities, and other Buddhist images.

- Mudras are most commonly associated with visual **depictions of the Buddha (or Buddharupa),** with different gestures conveying different moods and meanings, signifying the subtle manifestations of the Buddha's states of realisation.

- The earliest depictions of the Buddha in physical form date to roughly around the turn of the first millennium. Depictions **started appearing in the Gandhara** art from the northwestern edge of the Indian subcontinent.

- In the earliest depictions of Buddharupa, four mudras can be found: the abhaya mudra, or **"gesture of fearlessness";** the bhumisparsha mudra, or **"Earth-touching gesture";** the dharmachakra mudra, or **"gesture of the wheel of dharma";** and the dhyana mudra, or "**gesture of meditation".**

Gesture of fearlessness

- The abhaya mudra is described as one typically formed with the palm of the right hand facing outward at shoulder height and the fingers pointing up. Occasionally, the index, second, or third finger touches the thumb, with the remaining fingers extended upward. In some cases, both hands may simultaneously be raised in this posture in a double abhayamudra.

- In Buddhist tradition, the abhaya mudra is associated with the Buddha immediately after he obtained Enlightenment, **"portraying a sense of the security, serenity, and compassion that derive from enlightenment".**

- The gesture of fearlessnessalso identifies the moment when Shakyamuni (the Buddha)tamed the mad elephant, illustrating the Buddha's ability to grant fearlessness to his followers.

- This is why the abhaya mudra is also seen as a **"gesture of protection"** or "gesture of granting refuge".

- Over time, the abhaya mudra appeared in depictions of Hindu deities, and the Buddha himself was absorbed into the Hindu pantheon as the ninth avatar of the Puranic god Vishnu.

- As multiple traditions, practices, and cultural influences mingled in the great melting pot of the Hindu religion, manifestations were seen in art and visual depiction of gods. The abhaya mudra was seen in the depictions, most commonly of Lord Shiva, Lord Vishnu, and Lord Ganesha.

Source: Indian Express

CLASSICAL LANGUAGES IN INDIA

Context: The Central government is set to revise the criteria for granting classical language status based on recommendations from the Culture Ministry's Linguistics Expert Committee.

Background:

- The revised criteria will be officially notified through a gazette notification after approval by the Union Cabinet. Languages like Marathi, which have been under consideration, may need to wait until the new criteria are in place.

Key takeaways

- The term "**classical language**" refers to a language that has had a significant influence on the development of literature, culture, and society, and is considered a language of high cultural or literary importance.

- Currently, six languages **enjoy the 'Classical' status in India.**

- These languages are recognized for their rich heritage, ancient texts, and cultural significance.

- Here are the six classical languages:

  o Tamil: Declared as a classical language in 2004.

  o Sanskrit: Attained classical status in 2005.

  o Kannada: Recognized as a classical language in 2008.

  o Telugu: Achieved classical status in 2008.

  o Malayalam: Granted classical status in 2013.

  o Odia: Received classical recognition in 2014.

- All these classical languages are listed in the Eighth Schedule of the Constitution.

- The Ministry of Culture provides the guidelines regarding Classical languages.

- Guidelines **for declaring a language as 'Classical' are:**

  o High antiquity of its early texts/recorded history over a period of 1500-2000 years

  o A body of ancient literature/texts, which is considered a valuable heritage by generations of speakers

  o The literary tradition be original and not borrowed from another speech community

  o The classical language and literature being distinct from modern, there may also be a discontinuity between the classical language and its later forms or its offshoots.

- Benefits:

    o Once a language is notified as a Classical language, the Human Resource and Development Ministry provides certain benefits to promote it:

    o Two major annual international awards for scholars of eminence in classical Indian languages.

    o A Centre of Excellence for studies in Classical Languages is set up.

    o The University Grants Commission is requested to create, to start with at least in the Central Universities, a certain number of Professional Chairs for the Classical Languages so declared.

Source: Hindu

MOIDAM'S

Context: Ahom era 'Moidams'in Assamhave been recommended for inclusion in the UNESCO World Heritage List by its international advisory bodyInternational Council on Monuments and Sites (ICOMOSO).

Background:-

- The Moidams situated in Charaideo are the burial grounds of Ahom kings and queens. These are comparable to the pyramids of Egypt and substances of wonder seen through the brilliant architecture and expertise of the artsmen and masons of Assam of the medieval era.

The story of Ahoms:

- The Tai-Ahom clan upon their migration from China established their capital in different parts of the Brahmaputra River Valleybetween 12th to 18th CE.

- Usurping the Barahi tribe, Chau-lung Siu-ka-pha established the first capital of the Ahoms at the foothill of Patkai hills and named it Che-rai-doi or Che-tam-doi, meaning "a dazzling city above the mountain".

- While the clan moved from city to city, the landscape of Che-Rai-Doi or Choraideo continued to retain its position as most sacred where the departed soul of the Royals could transcend into the after-life.

- Believing that their Kings were Gods on earth, the Tai Ahoms chose to bury the deceased Royals in Choraideo, the most sacred core of their Kingdom.

- The unique system of vaulted mounds, which persisted for over 600 years until many Tai-Ahoms converted to Buddhism or adopted Hindu cremation, created an undulating landscape reminiscent of the mountains of heaven, reflecting their beliefs in life, death, spirit, and the 'other world'.

- The Moidams of Choraideu remains the only area where the largest concentration of these vaulted-mound burial chamber exist together, demonstrating a grand royal burial landscape unique to the Tai Ahoms.

About Moidams

- Moidamsarevaulted chamber (chow-chali), often double storied entered through an arched passage. Atop the hemispherical mud-mound layers of bricks and earth is laid, where the base of

the mound is reinforced by a polygonal toe-wall and an arched gateway on the west.

- Eventually the **mound would be covered by a layer of vegetation**, reminiscent of a group of hillocks, transforming the area into an undulating landscape.

- Excavation shows that each vaulted chamber has a centrally raised platform where the body was laid.

- Several objects used by the **deceased during his life, like royal insignia,** objects made in wood or ivory or iron, gold pendants, ceramic ware, weapons, clothes to the extent of human beings (only from the Luk-kha-khun clan) were buried with their king.

- There is a great variety in materials and systems of construction used in building a moidam.

- From the period between **13th CE to 17th CE,** wood was used as the primary material for construction whereas 18th CE onwards stone and burnt bricks of various sizes were used for the inner chambers.

Source:Hindu

MAHABODHI TEMPLE COMPLEX

Context: A geospatial analysis utilising satellite images and ground surveys has found evidence of the presence of "huge architectural wealth" buried in the Mahabodhi temple complex and its surroundings in Bihar's Bodh Gaya.

Background:

- In the context of philosophical and cultural history, Mahabodhi Temple Complex is of great relevance as it marks the most important event in the life of Lord Buddha, the moment when Prince Siddhartha attained Enlightenment and became Buddha, an event that shaped human thought and belief.

About Mahabodhi Temple Complex:

- It is one of the four holy sites related to the life of the Lord Buddha, and particularly to the attainment of Enlightenment.

- The Mahabodhi Temple Complex is the first temple built by Emperor Asoka in the 3rd century B.C., and the present temple dates from the 5th–6th centuries.

- It is one of the earliest Buddhist temples built entirely in brick, still standing, from the late Gupta period and it is considered to have had significant influence in the development of brick architecture over the centuries.

- The present **Mahabodhi Temple Complex at Bodh Gaya comprises** the 50 m high grand Temple, the Vajrasana, sacred Bodhi Tree and other six sacred sites of Buddha's enlightenment, surrounded by numerous ancient Votive stupas, well maintained and protected by inner, middle and outer circular boundaries.

- A seventh sacred place, the Lotus Pond, is located outside the enclosure to the south.

- The most important of the sacred places is the giant Bodhi Tree, to the west of the main temple, a supposed direct descendant of the original Bodhi Tree under which Buddha spent his First Week and had his enlightment.

- To the north of the central path, on a **raised area, is the Animeshlochan Chaitya (prayer hall)** where Buddha is believed to have spent the Second Week.

- Buddha spent the Third Week walking eighteen paces back and forth in an area called

Ratnachakrama (the Jewelled Ambulatory), which lies near the north wall of the main temple. Raised stone lotuses carved on a platform mark his steps.

- The spot where **he spent the Fourth Week is Ratnaghar Chaitya.**

- Immediately after the steps of the east entrance on the central path there is a pillar which marks the site of the Ajapala Nigrodh Tree, under which Buddha meditated during his Fifth Week, answering the queries of Brahmans.

- **He spent the Sixth Week next to** the Lotus Pond and the Seventh Week was spent under the Rajyatana Tree, to the south-east of the main temple, currently marked by a tree.

- Next to the Bodhi Tree there is a platform attached to the main temple made of polished sandstone known as **Vajrasana (the Diamond Throne), originally installed by Emperor** Asoka to mark the spot where Buddha sat and meditated.

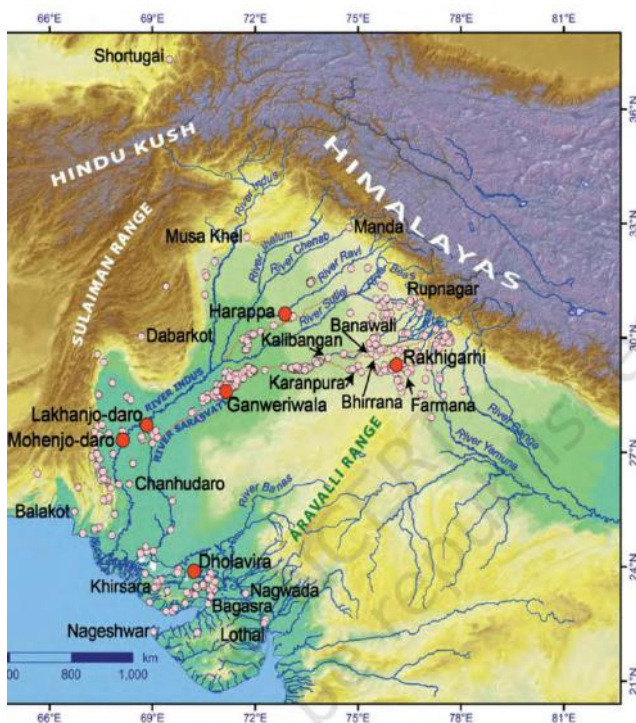Source: Economic Times

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HARAPPAN CIVILIZATION AND SARASWATI RIVER

Context: The new NCERT Class 6 Social Science textbook includes several new elements, such as referring to the Harappan civilisation as the 'Sindhu-Sarasvati' and 'Indus-Sarasvati' civilisation and multiple mentions of the 'Sarasvati' river, including noting its desiccation as a reason for the decline of Harappan society.

Background:-

- 'Exploring Society: India and Beyond' is the first Social Science textbook released by the NDA government in alignment with the National Curriculum Framework for School Education 2023.

Focus on Sarasvati river

- The new textbook makes multiple references to the 'Sarasvati' river in the chapter on the beginnings of Indian civilisation. The Harappan civilisation is referred to as the 'Indus-Sarasvati' or 'Sindhu-Sarasvati' civilisation, and the river is given a prominent place.

- According to new text, 'Sarasvati' basin included major cities of the harappan civilisation — Rakhigarhi and Ganweriwala — along with smaller cities and towns.

- The rivertoday goes by the name of 'Ghaggar' in India and 'Hakra' in Pakistan (hence the name 'Ghaggar-Hakra River'), and is now seasonal.

- The river also plays a key role in a section on how the Harappan civilisation declined.

- It states that two factors are agreed upon: one is "climate change," which led to reduced rainfall, and the other is that the "Sarasvati river dried up in its central basin; as a result, cities like Kalibangan and Banawali were suddenly abandoned."

Content in the Old textbook

- The old History textbook, 'Our Past I', mentioned the river only once in a section on the Rig Veda, where it is included among the rivers named in the hymns in the Vedas.

- The old one does not cite the drying up of the river as a reason for the decline of Harappan cities. Instead, it mentions that some scholars suggest river desiccation, while others point to deforestation and floods in certain areas. "But none of these reasons can explain the end of all the cities. Flooding, or a river drying up, would have had an effect in only some areas. It appears as if the rulers lost control," the old book stated.

Source: Indian Express

KADAMBINI GANGULY

Context: Recently, country celebrated the birth anniversary of Kadambini Ganguly

Background:

- Despite her many achievements, Kadambini remains largely unrecognised, absent from our textbooks or museums and ignored in the writings of Indian history.

About Kadambini Ganguly

- Kadambini was born in 1862 in Bhagalpur, Bihar. Her father, Brajkishore Basu, was a school headmaster and a stalwart of the Brahmo Samaj movement.

- Kadambini completed her BA from Bethune in 1882 and became the first woman graduate in Bengal along with Chandramukhi Bose.

- Kadambini had already begun considering a medical degree by then. Thiswas a far-fetched dream since the **Calcutta Medical College (CMC)** did not have any provision for allowing women students.

- Lieutenant Governor of Bengal, Augustus Rivers Thompson, stepped in and ensured that the medical college opened its doors to women.

- Kadambini graduated from CMC in 1886 and was appointed doctor at the Lady Dufferin Women's Hospital in 1888.

- Anandibai Joshi, who also graduated as a doctor in 1888 after studying in America, died of tuberculosis shortly after and couldn't practice medicine. Thus, Kadambini is widely regarded as the first woman medical practitioner in India.

- Kadambini decided to pursue another degree, this time from Britain.In 1893, Kadambini graduated from the University of Edinburgh, the only one of 14 women to pass the exams.

- At the 1889 Congress session, where six women were present, Kadambini moved the vote of thanks. Annie Besant hailed her as a **"symbol that India's freedom would uplift India's womanhood."**

- She organised the Women's Annual Conference in Calcutta in 1906 in the aftermath of the Partition of Bengal.

Role in Age of Consent Act

- The government had introduced a bill in 1890 to raise the age of consent for sexual intercourse for all girls in India, both married and unmarried.

- Kadambini was then appointed to carry out a survey and submit a report in this regard.It was on the basis of her report that the Age of Consent Act 1891 was passed.

Source: Indian Express

KANWAR YATRA

Context: Supreme Court prohibits enforcement of directives of UP, Uttarakhand govts on food stalls en

route the Kanwar Yatra.

Background:

- The UP and Uttarakhand governments had issued directives requiring food stalls en route the Kanwar Yatra to exhibit the names and other identity details of their owners and employees.

About Kanwar Yatra:

- The Kanwar Yatra, also known as Kavad Yatra, is an annual pilgrimage undertaken by devotees of Lord Shiva.

- It typically takes place in the month of Shravan (July or August) according to the Hindu calendar.

- Devotees, known as Kanwarias or Bhole, embark on this pilgrimage to fetch holy water from significant Hindu pilgrimage sites.

- During this pilgrimage, millions of devotees, known as Kanwariyas, travel to sacred places like Haridwar, Gaumukh, Gangotri, Sultanganj, Prayagraj, Ayodhya, and Varanasi.

- They carry containers of holy water (called kanwars) from the Ganga River and offer it at Shiva temples, including the 13 Jyotirlingas across India.

Rituals and Practices:

- Jal Abhishek: Devotees pour the collected water over Shiva lingams in temples.

- Barefoot Walk: Kanwariyas walk barefoot, often covering long distances.

- Saffron Attire: Devotees wear saffron clothes as a mark of devotion.

- Fasting: Many observe fasts during the yatra.

Source: Times of India

CHANDRA SHEKHAR AZAD

Context: Recently, Prime Minister paid his homage to Chandra Shekhar Azad on his birth anniversary.

Background:

- "If yet your blood does not rage, then it is water that flows in your veins. For what is the flush of youth, if it is not of service to the motherland?" These words echo the spirit of Chandra Shekhar Azad.

About Chandra Shekhar Azad:

- Chandra Shekhar Sitaram Tiwari (23 July 1906 – 27 February 1931), popularly known as Chandra Shekhar Azad, was an Indian revolutionary.

- In 1921, at the peak of the Non-Cooperation Movement, 15-year-old student Chandra Shekhar joined the cause. He was arrested and brought before the district magistrate, where he boldly gave his name **as "Azad"** (The Free), stated his father's name **as "Swatantrata"** (Independence), and his residence as "Jail". The infuriated magistrate punished him with 15 lashes.

- After the suspension of the non-cooperation movement in 1922 by Mahatma Gandhi, Azad became disappointed. He got associated with Ram Prasad Bismil, who had formed the Hindustan Republican Association (HRA).

- Azad became an active member of the HRA and started to collect funds for HRA. He was involved in the Kakori Train Robbery of 1925.

- In the aftermath of the Kakori train robbery, the British suppressed revolutionary activities. Prasad, Ashfaqulla Khan, Thakur Roshan Singh and Rajendra Nath Lahiri were sentenced to death

- for their participation. Azad and a few others evaded capture.

- In 1928, along with Bhagat Singh and other revolutionaries he secretly reorganised the **Hindustan Republican Association (HRA),** renaming it as the **Hindustan Socialist Republican Association (HSRA)** , so as to achieve their primary aim of an independent socialist India.

- **Azadconspired with revolutionaries like Shivaram Rajguru, Sukhdev Thapar,** and Bhagat Singh to assassinate the Superintendent of police, James A. Scott in order to avenge Lala Rajpat Rai's death.However, in a case of mistaken identity, the plotters shot John P. Saunders, an Assistant Superintendent of Police.

- On **27th Feb, 1931,** Police was tipped off by someone that Azad was at Alfred Park, following which the police surrounded the park. After a long shootout, holding true to his pledge to always remain Azad (Free) and never be captured alive, he shot himself in the head with his gun's last bullet.

Source: News18

NOUKA BAICH

Context: With the south-west monsoon gradually setting in, nouka baich boat races will soon begin in several rural pockets of West Bengal.

Background:

- Boat racing is an exhilarating and diverse water-based sport that involves racing boats or yachts over a set course or distance. This sport encompasses a wide range of boat types and categories, each offering unique challenges and requiring specific skills.

About Nouka Baich:

- Nouka Baich is the traditional boat race of Bengal, predominantly held in rural **pockets of West Bengal, including Murshidabad, Nadia, North 24 Parganas, and South 24 Parganas.**

- Historically male-dominated, recent years have seen increasing participation by women.

- The races commence with the onset of the south-west monsoon, usually starting in the middle of the rainy season.

- The events continue until September, with some races extending into October and November, depending on the region.

Types of Boats Used:

- Unlike Kerala's boat races, which typically feature a single type of boat, Bengal's races use various traditional boats.

- Chhip, Kaile Bachhari, Chande Bachhari, Chitoi, Sorpi, and Sorengi are commonly used boats in the races.

- Each boat type has unique design features and historical significance. For example, the Sorengi boat is over 90 feet long and designed to mimic natural forms.

Similar Festivals in India:

- Other regions in India also celebrate boat races with cultural significance. Some examples include:

  o Nehru Trophy Boat Race (Kerala)

  o Aranmula Uthrattadi Vallamkali (Kerala)

  o Payippad Jalotsavam (Kerala)

o Indira Gandhi Boat Race (Kerala)

o Pongal Boat Race (Tamil Nadu)

o Sithargal Boat Race (Tamil Nadu)

o Hiyang Tannaba (Manipur)

Source: Hindu

KALARIPAYATTU

Context: Ministry of Youth Affairs & Sports Recognizes Kalarippayattu Federation of India for Promotion of Kalarippayattu in Country.

Background:-

- As sports is a State subject, it is the responsibility of State Governments to develop sports infrastructure for various disciplines, including Kalaripayattu.

About Kalarippayattu

- Kalaripayattu also known simply as Kalari, is an Indian martial art that originated in Kerala.

- It is considered as one of the most ancient martial arts in the world.

- The word Kalaripayattu is a combination of two Malayalam words - kalari (training ground or battleground) and payattu (training of martial arts), which is roughly translated as "practice in the arts of the battlefield".

- Kalaripayattu training includes exercises to develop sharp reflexes for unarmed combat and skillful fight using sticks, dagger, knife, spear, sword and shield etc.

- It is noted for its high-flying acrobatics, graceful movements and employs the deadly weapons at ease.

- There are mainly two main styles of Kalarippayattu: –

  o Vadakkan or Nothern style – The Vadakkan Kalarippayattu is predominantly practiced in the Malabar region of Kerala. The Vadakkan style emphasizes more on graceful body movement and the weaponry.

  o Thekken or Southern Style- The Thekken Kalarippayattu or Adi Murai is practiced mainly in the Travancore region, this style involves more free armed techniques & powerful movements.

Source:PIB

DEFENCE& SECURITY.

ZAROWAR

Context: India has unveiled its 'Zorawar' light battle tank.

Background:

- As part of developmental trials, over the next six months, the tank will be tested in various conditions.

About Zarowar

- Zarowar is a joint effort between the Defence Research and Development Organisation (DRDO) and Larsen & Toubro (L&T).

- The air-transportable 25-tonne tank has been designed for rapid deployment largely along the frontier with China.

- Named after the 19th-century Dogra General Zorawar Singh, who led military operations in Ladakh and Western Tibet, Zorawar is the first tank to be designed and ready for trials in such a short timeframe.

- Its amphibious capabilities enable it to traverse steep climbs in mountainous terrain and cross rivers and other water bodies more easily than heavier predecessors like the T-72 and T-90 tanks.

- The Zorawar tanks are designed with an active protection system to shield combat vehicles from anti-tank guided missiles and projectiles.

- The tank is currently **powered by a Cummins engine and DRDO** has taken up a project to develop a new engine domestically.

What led to the development of Zarowar ?

- At the height of the ongoing standoff in Eastern Ladakh, following the confrontation on the Kailash range on the south bank of Pangong Tso in August 2020, **India and China had deployed tanks on the mountain peaks.**

- China has deployed **the third-generation modern light tank ZTQ 15** (Type 15), latest ZTL-11 wheeled Armoured Personnel Carriers and a series of assault vehicles along the Line of Actual Control in Eastern Ladakh during the standoff.

- The Chinese light tanks could move through steep climb along the Line of Actual Control (LAC) much more easily than the Indian Army's heavy-weight T-72 and T-90 tanks of Russian origin.

- It was during the standoff that the Army felt the need for a light tank to operate at 15,000 feet for easy deployment and manoeuvrability.

- Officials said the Zarowar tank will be able to fire at high angles of elevation and perform the role of

limited artillery and is an agile weapon platform thus providing enhanced tactical and operational mobility.

Source: Firstpost

HANNIBAL DIRECTIVE

Context: On October 7 last year, as Hamas raided southern Israel, the Israel Defence Forces (IDF) activated the "Hannibal Directive," a doctrine of using maximum force to prevent soldier capture, even at the cost of military and civilian lives, according to a recent media investigation.

Background:

- The IDF has not confirmed or denied the claims in the report, and has said that the results of internal investigations would be presented once complete.

what is the Hannibal Directive?

- The expression refers to a IDF operational policy that aims to pre-empt politically painful prisoner swaps by immediately eliminating everyone in the vicinity of a captive Israeli soldier, even if it poses a risk to the soldier himself.

- The full text of the purported doctrine has never been published, even though its existence has been an open secret.

- Describing the procedures to be used in the minutes and hours immediately following a possible abduction, the directive states: "In case of capture, the main mission becomes rescuing our soldiers from the captors, even at the cost of hitting or wounding our soldiers."

Why is it called Hannibal Directive?

- The policy is named after the Carthaginian general Hannibal, who reportedly chose to kill himself **to avoid capture by the Romans in 181 BCE**.

- Hannibal, who led Carthage against Rome in the 17-year Second Punic War, had taken refuge with Prusias I of Bithynia in northwest Anatolia.

- When the Romans pressured Prusias to surrender him, Hannibal, determined not to be captured, consumed poison upon realizing he was surrounded.

When was the purported doctrine embraced by Israel?

- The Hannibal Doctrine was formulated as a response to the Jibril Agreement of 1985 in which 1,150 Palestinian prisoners were exchanged for three Israelis who had been seized in Lebanon by the Syria-based militant group Popular Front for the Liberation of **Palestine-General Command (PFLP-GC).**

- The deal, which was negotiated over almost a year, was nicknamed after the leader of the PFLP-GC, Ahmed Jibril. Among the Palestinians released by Israel was Sheikh Ahmed Yassin, who went on to found Hamas in 1987.

- The swap negotiations were exhausting, and the deal was seen as costly by many Israelis, who did not want to see a repeat.

- In mid-1986, after Hezbollah attempted to abduct two Israeli soldiers to southern Lebanon, Yossi Peled, then head of the IDF's Northern Command, drafted the operational order that would become the basis of the Hannibal Doctrine.

- Peled essentially advocated the suspension of safety procedures that protect IDF soldiers from being fired on by their own in the possibility of capture, as opposed to actively targeting them.

How is this doctrine justified?

- After proof of its existence came to light, the directive did not attract criticism from Israelis, primarily because of the perception that any soldiers captured by militants would not be extended the dignity of being treated as prisoners of war.

- It also made sense to many soldiers to avoid being captured, even at the cost of risking dying in the process.

- The Hannibal Doctrine has been criticisedfor its disregard for human life.

What allegedly transpired on October 7, 2023?

- According to media report, the attack left the IDF red-faced, and prompteduse of the Hannibal Directive, with an explicit order relayed across its Gaza Division: **"Not a single vehicle can return to Gaza."**

- In the current iteration, the Hannibal Directive allows a division commander to assume extraordinary authority to block an enemy raid, even employing heavy fire inside Israeli territory if necessary.

Source: Indian Express

EXERCISE PITCH BLACK 2024

**Context:** Indian Air Force (IAF) is all set to participate in Exercise Pitch Black 2024.

Background:

- This edition is slated to be the largest in the 43 year long history of Ex Pitch Black, which includes participation by 20 countries, with over 140 aircraft and 4400 military personnel of various air forces.

About Exercise Pitch Black

- Exercise Pitch Black is a biennial warfare exercise hosted by the Royal Australian Air Force (RAAF).

- The exercise is normally held in Northern Australia, primarily at RAAF Bases Darwin and Tindal.

- The aim of the exercise is to practice Offensive Counter Air (OCA) and Defensive Counter Air (DCA) combat, in a simulated war environment.

- The name **'Pitch Black'** was derived from the emphasis on night time flying over large un-populated areas.

- The exercise provides an excellent opportunity for strengthening the ability of the participating nations to deploy over large distances, support integrated operations in the Indo-Pacific region and building strong aviation associations in a highly challenging environment.

- The IAF has previously participated in the 2018 and 2022 editions of this exercise.

Source: PIB
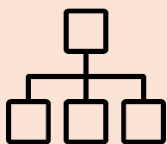
RIGHT TO REPAIR PORTAL

Context: The Centre asked the automobile companies to join the unified Right to Repair Portal India which has been launched by the Department of Consumer Affairs to provide consumers with an easy access to information for repairing their products and enabling them to reuse it.

Background:-

- The portal will serve as a single platform to provide easy access to necessary information on repair and maintenance of products to consumers.

What is right to repair ?

- The right to repair for consumer goods refers to the concept of allowing end users, consumers as well as businesses, to repair devices they own or service without any manufacturer or technical restrictions.

- **The Ministry of Consumer Affairs (MCA)** has set up a committee to come up with a Right to Repair framework.

- The framework is significant as it will give consumers a chance to repair their products at an optimal cost instead of buying new products altogether.

- Under this framework, it would be mandatory for manufacturers to share their product details with customers so that they can either repair them by self or by third parties, rather than only depending on original manufacturers.

- The framework also aims to help harmonize the trade between the **Original Equipment Manufacturers (OEMs),** third-party buyers and sellers - thus also creating new jobs.

- It will help reduce the vast mountain of electrical waste (e-waste) that piles up each year on the continent and boost business for small repair shops, which are an important part of local economies.

- It will save consumers' money and contribute to circular economy objectives by improving the life span, maintenance, re-use, upgrade, recyclability, and waste handling of appliances.

What is there in the right to repair portal?

- Customer care details across brands

  o The portal has consolidated list of consumer care contact details of all major consumer products manufacturers for your quick viewing.

- **Find warranty and post-sales service information**

  o Use website to search companies by name or consumer product name. All the public information related to their products service, warranty, terms and conditions, etc. are aggregated on this portal.

- **Links to the service network of the brands**

  o Visit links to the authorized service network of the brands and third-party service providers. Also view the warranty and prices of genuine spares and consumables of respective brands.

Source:Right to repare India

JUTE

Context: To boost livelihoods in the non-farm sector,Ministry of Rural Development organized a webinar on Jute Craft recently.

Background:

- The Indian Jute Industry is a very old & predominant in the eastern part of India.India is the world's largest producer of raw jute and jute goods , contributing to over 50 percent and 40 percent respectively of global production.

About Jute and its cultivation :

- Jute is one of the most important natural fibers after cotton in terms of cultivation and usage. Cultivation is dependent on the climate, season, and soil.

- Almost 85% of the world's jute cultivation is concentrated in the Ganges Delta. This fertile **geographic region is shared by India (mainly West Bengal)** and Bangladesh.

- The cultivation of jute in India is mainly confined to the eastern region of the country . The jute crop is grown in nearly 83 districts of seven states - West Bengal , Assam , Orissa , Bihar , Uttar Pradesh , Tripura and Meghalaya . West Bengal alone accounts for over 50 percent raw jute production.

- China also has a dominant place in jute cultivation. On a **smaller scale, Thailand, Myanmar (Burma),** Pakistan, Nepal, and Bhutan also cultivate jute.

- Temperatures ranging to more than 25 °C and relative humidity of 70%–90% are favorable for successful cultivation.

- Jute requires **160–200 cm** of rainfall yearly with extra needed during the sowing period.

- River basins, alluvial or loamy soils with a pH range between **4.8 and 5.8** are best for jute cultivation.

- Plain land or gentle slope or low land is ideal for jute cultivation. Since the jute seeds are small in size, land should be finely tilled, which can be done by careful ploughing.

- There are two main types of Jute :**Olitorius and Capsularis.**

- Jute takes 4 to 5 months to mature.

Source:PIB

SDG INDIA INDEX 2023-24

Context: NITI Aayog recently released the SDG India Index 2023-24, which evaluates India's progress on the 16 Sustainable Development Goals (SDGs).

Background:

- India's commitment to the SDGs since adopting the 2030 Agenda on Sustainable Development is reflected in concerted efforts on SDG localisation spearheaded by NITI Aayog, which works closely with States and UTs.

About SDG India Index :

- The SDG India Index provides a holistic view of the social, economic, and environmental status of the country and its states and union territories.

- The NITI Aayog, in collaboration with the United Nations in India, releases the SDG India Index.

- It helps in monitoring and evaluating the progress towards the 16 SDGs adopted by the United

- Nations in 2015.

- The Index uses a set of 113 indicators to assess performance across various parameters such as health, education, gender equality, climate action, economic growth, and environmental sustainability.

- SDG India Index 2023-24 measures and tracks national progress of all States and UTs on 113 indicators aligned to the Ministry of Statistics and Programme Implementation's (MoSPI) National Indicator Framework (NIF).

SDG India Index 2023-24 Highlights:

- **Overall Score:** India's overall SDG score improved to 71 in 2023-24, up from 66 in 2020-21 and 57 in 2018.

- **Top Performing States:** Kerala and Uttarakhand achieved the highest scores of 79 each.

- **Significant Progress:** Notable advancements in Goals 1 (No Poverty), 8 (Decent Work and Economic Growth), 13 (Climate Action), and 15 (Life on Land).

- **Fastest Moving States:** Uttar Pradesh (increase by 25 points), followed by J&K (21), Uttarakhand (19), Sikkim (18), Haryana (17), Assam, Tripura, and Punjab (16 each), Madhya Pradesh and Odisha (15 each).

- New Entrants in Front-Runner Category: Arunachal Pradesh, Assam, Chhattisgarh, Madhya Pradesh, Manipur, Odisha, Rajasthan, Uttar Pradesh, West Bengal, and Dadra and Nagar Haveli and Daman and Diu.

Key Initiatives Contributing to Progress:

- **Government Programs:** Pradhan Mantri Awas Yojana, Ujjwala, Swachh Bharat, Jan Dhan, Ayushman Bharat-PMJAY, Ayushman Arogya Mandir, PM-Mudra Yojana, Saubhgaya, Start-up India.

- **SDG Localisation:** Efforts spearheaded by NITI Aayog, working closely with States and UTs to promote competitive and cooperative federalism.

Source: PIB

VIBRANT VILLAGES PROGRAMME

Context: Union Home Minister Amit Shah recently reviewed the implementation of Vibrant Villages Programme.

Background:-

- Vibrant Villages Programmewas first announced in the 2022 Budget. The programme's targets are to provide comprehensive development of villages on the border with China and improvement in the quality of life of people living in identified border villages.

About Vibrant Villages Programme

- Government approved Vibrant Villages Programme (VVP) as a Centrally Sponsored Scheme in February2023, with financial outlay of ₹4800 crore for the FY 2022-23 to 2025-26.

- It aims for comprehensive development of the select villages in 46 blocks in 19 districts abutting northern border in the States of Arunachal Pradesh, Himachal Pradesh, Sikkim, Uttarakhand and UT of Ladakh.

- The objective of the programme is comprehensive development of these villages to improve the quality of life of people & thereby reversing outmigration.

- The programme envisages focused areas of interventions in the select villages for creation of opportunities for livelihood generation through promotion of tourism & cultural heritage, skill

development & entrepreneurship and development of cooperative societies including agriculture/horticulture, cultivation of medicinal plants/herbs etc. the interventions also include providing road connectivity to unconnected villages, housing & village infrastructures, energy including renewable energy, television & telecom connectivity.

- VVP has been conceived as an outcome oriented programme with outcome indicators at three levels- village, household & individual beneficiary.

Source:Business Standard

PRADHAN MANTRI SCHOOLS FOR RISING INDIA (PM-SHRI)

Context: The Education Ministry has stopped funds under the Samagra Shiksha Abhiyan (SSA), the flagship school education programme, to Delhi, Punjab and West Bengal because of their reluctance to participate in the Pradhan Mantri Schools for Rising India (PM-SHRI) scheme.
Background:-

- Delhi and Punjab refused to participate since the two states, ruled by the Aam Aadmi Party, already run a similar scheme for exemplar schools called "Schools of Eminence". West Bengal opposed prefixing "PM-SHRI" to the names of their schools.

About Pradhan Mantri Schools for Rising India (PM-SHRI)

- The PM SHRI is a centrally sponsored scheme initiated by the Government of India.

- Its objective is to establish over 14,500 PM SHRI Schools, overseen by the Central Government, State/UT Governments, local bodies, as well as **Kendriya Vidyalaya Sangathan (KVS) and Navodaya Vidyalaya Samiti (NVS).**

- These schools aim to create an inclusive and welcoming atmosphere for every student, ensuring their well-being and providing a secure and enriching learning environment.

- The goal is to offer a diverse range of learning experiences and ensure access to good physical infrastructure and appropriate resources for all students.

- These schools will not only focus on enhancing cognitive development but also creating holistic and well-rounded **individuals equipped with key 21st-century skills.**

- The pedagogy adopted in these schools will be more experiential, holistic, integrated, play/toy-**based (particularly in the foundational years),** inquiry-driven, discovery-oriented, learner-centred, discussion-based, flexible, and enjoyable.

- The focus will be on the learning outcomes of every child in every grade. Assessment at all levels will be based on conceptual understanding and application of knowledge to real-life situations and will be competency-based.

- PM SHRI Schools will help showcase the implementation of the National Education Policy 2020 and emerge as exemplar Schools over a period of time.

Source:Business Standard

INDIA YOUNG PROFESSIONAL SCHEME 2024

Context: UK recently announced second ballot for India Young Professional Scheme 2024.

Background:

- In 2024, the UK has allocated 3,000 places under this scheme, with most spots already filled during the February 2024 ballot. The second ballot period opened on July 16, 2024, at 13:30 Indian

Standard Time and closes on July 18, 2024, at the same time.

About India Young Professional Scheme 2024 :

- The India Young Professional Scheme is a youth mobility scheme that allows Indian nationals to live, work, and study in the United Kingdom for up to two years.

- This scheme was announced at the G20 summit in Bali in November 2022.

- It was formally launched in February 2023.

- It allows up to 3,000 degree-holding citizens aged between 18 and 30 from each country to live and work in the other country for two years.

- Interested applicants, aged between 18-30 years old or turning 18 by the travel date, with a bachelor's degree or higher, savings of GBP 2,530, and no dependent children under 18, are eligible to apply.

- India is the first visa-national country to benefit from this scheme.

Source: Economic Times

ENEMY PROPERTIES

Context: The Indian government has recently taken a significant step to auction properties classified as "enemy properties."

Background:

- Over 9,400 'enemy' properties, worth more than Rs 1 lakh crore, are set to be auctioned with the home ministry starting the process of identifying all such estates.

About Enemy properties:

- Enemy properties are those that were once owned by individuals who took Chinese or Pakistani citizenship after India fought wars with these countries.

- Enemy properties include both immovable (real estate) and movable (such as bank accounts, shares, and gold) properties left behind by those who migrated to Pakistan and China.

- These properties are vested with the Custodian of Enemy Property for India (CEPI), an authority **created under the Enemy Property Act, 1968.**

- The Enemy Property Act, 1968 governs the allocation and management of these properties. It was enacted in the aftermath of the 1965 Indo-Pakistani war.

The Enemy Property (Amendment and Validation) Act 2017:

- In 2017, the Enemy Property (Amendment and Validation) Act clarified that

    o Successors of those who migrated to Pakistan or China no longer have a claim over these properties.

    o The law of succession does not apply to enemy properties.

    o Transfers of such properties by enemies, enemy subjects, or enemy firms are prohibited.

    o The custodian preserves these properties until they are disposed of according to the Act's provisions.

- CEPI currently manages 13,252 enemy properties across India.

- Their total value exceeds Rs 1 lakh crore.

- Most of these properties belong to individuals who migrated to Pakistan, while a smaller number

are associated with those who migrated to China.

State-wise Distribution:

- Uttar Pradesh has the highest number of enemy properties (5,982).

- West Bengal follows closely with 4,354 properties.

Source: Hindu

NATIONAL PENSION SCHEME (NPS) VATSALYA

Context:The finance minister recently made the announcement of a new pension scheme under the National Pension Scheme (NPS), called NPS Vatsalya.

Background:

- In addition to NPS Vatsalya, the Budget 2024 also brought significant changes to NPS contribution limits, aimed at increasing tax benefits for both employees and employers.

About NPS Vatsalya Scheme:

- The NPS Vatsalya Scheme proposed in Budget 2024 enables parents and guardians to start a National Pension Scheme (NPS) for their children.

- It is designed to help parents and guardians plan for their children's future financial needs.

- Under the scheme, parents or guardians can open an account for their minor children and make contributions towards their retirement savings.

- **The funds will accumulate until the child turns 18.**

- Once the child reaches adulthood, the accumulated amount will be transferred to the standard NPS account.

- This plan could be seamlessly converted into a non-NPS plan when the child becomes an adult.

- The scheme operates similarly to the existing NPS.

- The NPS scheme introduced by the Central Government provides pension income to individuals to support their retirement needs. Thus, the NPS Vatsalya scheme is one of the finest retirement options, guaranteeing the child's financial security.

Source: Hindu

DIGIPIN

Context: The Department of Posts releases a beta version of DIGIPIN (Digital Postal Index Number) for public comments and expert opinion.

Background:

- The concept of a standardized, geo-coded system like DIGIPIN can greatly enhance efficiency and accuracy in delivering services.

About DIGIPIN :

- Digital Postal Index Number (DIGIPIN) is an initiative by the Department of Posts in India.

Purpose and Objective:

- DIGIPIN aims to establish a geo-coded addressing system across India.

- It is designed to create a National Addressing Grid and simplify addressing solutions for citizen-centric delivery of public and private services.

Development and Collaboration:

- The Department of Posts developed DIGIPIN in collaboration with IIT Hyderabad.

- It serves as a strong and robust pillar for Geospatial Governance and acts as a base layer for other ecosystems.

Features:

- DIGIPIN allows for logical location of addresses with directional properties built into it.

- It provides a unique code for each location, facilitating precise identification.

Significance:

- As India continues to digitize and improve its postal services, DIGIPIN plays a crucial role in enhancing address accuracy and accessibility.

Source: PTI

NIPUN BHARAT

Context: Recently, minister of state in the ministry of education, replied to questions on NIPUN BHARAT in Rajya Sabha.

Background:

- This initiative aligns with the National Education Policy 2020.

Key Takeaways :

- The National Initiative for Proficiency in Reading with Understanding and Numeracy (NIPUN Bharat) is a significant educational mission launched by the Ministry of Education.

- Its primary goal is to ensure that every child in the country attains foundational literacy and numeracy skills by the end of Grade 3.

· Key points about NIPUN Bharat:

- Objective: Achieve universal foundational literacy and numeracy in primary schools by 2025.

- Age Group: NIPUN Bharat focuses on children aged 3 to 9 years, including pre-school to Grade 3.

- Implementation Mechanism: The mission establishes a five-tier implementation mechanism at the National, State, District, Block, and School levels across all States and Union Territories. It operates under the Samagra Shiksha centrally sponsored scheme.

- Universal Acquisition of Skills: All Government, Government-Aided, and Private Schools are expected to work towards achieving universal foundational literacy and numeracy (FLN) skills by 2026-27.

Key Areas of Focus:

- Access and Retention: Ensuring children have access to quality education during their foundational years.

- Teacher Capacity Building: Enhancing teacher skills to effectively teach literacy and numeracy.

- Quality Learning Materials: Developing high-quality and diverse student and teacher resources.

- Progress Tracking: Monitoring each child's progress in achieving learning outcomes.

Source: Digital Sansad

PRADHAN MANTRI GRAMIN DIGITAL SAKSHARATH ABHIYAN (PM-GDISHA)

Context: The Minister of State for Electronics and Information Technology recently responded to a question regarding the Pradhan Mantri Gramin Digital Saksharta Abhiyan (PMGDISHA) in the Rajya Sabha.

Background:

- Under the scheme, around 7.35 crore candidates were enrolled and 6.39 crore were trained, out of which 4.78 crore candidates were certified as per the reply.

- Scheme was to bridge the digital divide, specifically targeting the rural population including the marginalized sections of society like Scheduled Castes (SC) / Scheduled Tribes (ST), Below Poverty Line (BPL), women, differently-abled persons, and minorities.

About Pradhan Mantri Gramin Digital Saksharta Abhiyan (PMGDISHA) :

- **Pradhan Mantri Gramin Digital Saksharta Abhiyaan (PMGDISHA)** is a Digital Literacy Scheme by **the Ministry of Electronics and Information Technology (MeitY).**

The main features of the PMGDISHA scheme:

- The scheme was implemented only in rural areas i.e. Gram Panchayat/Village to cover 6 crore rural households.

- **Only one person (14 - 60 years of age)** per eligible household was considered for training.

- The beneficiaries were provided with 20 hours of training consisting of 5 modules namely (i) Introduction to digital devices, (ii) Operating digital devices, (iii) Introduction to the internet, (iv) Communications using the internet, (v) Application of internet (includes citizen centric services) and use of financial tools for undertaking digital cashless transactions.

- The training content was made available in 22 scheduled languages and English. This content was made available in both online and offline mode.

- In addition, keeping in view the thrust of the government on promoting cashless transactions through mobile phones, the content on digital wallets, mobile banking, **Unified Payments Interface (UPI), Unstructured Supplementary Service Data (USSD),** Aadhaar Enabled Payment System (AEPS), and PoS were included.

- After training of the candidate, a third-party assessment of the trained candidates was carried out by recognized certifying agencies. Digitally Signed Certificates were issued for all successful candidates.

Source: PIB

MECHANISM TO DEAL WITH CYBER CRIMES

Context: Recently, minister of state in the ministry of home affairs, gave a detailed answer to a question regarding government efforts to tackle cybercrimes in Rajya Sabha.

Background:

- The country has been witnessing a massive increase in cyber crimes.

Government efforts to tackle cybercrime

- The Ministry of Home Affairs has set up the 'Indian Cyber Crime Coordination Centre' (I4C) as an attached office to deal with all types of cyber crime in the country, in a coordinated and comprehensive manner.

- **Seven Joint Cyber Coordination Teams (JCCTs)** have been constituted for Mewat, Jamtara, Ahmedabad, Hyderabad, Chandigarh, Vishakhapatnam, and Guwahati under I4C covering the whole country based upon cyber crime hotspots/ areas having multi jurisdictional issues by on boarding States/UTs to enhance the coordination framework among the Law Enforcement Agencies of the

States/UTs.

- The state of the art 'National Cyber Forensic Laboratory (Investigation)' has been established, as a part of the I4C, at New Delhi to provide early stage cyber forensic assistance to Investigating Officers (IOs) of State/UT Police.

- **The 'National Cyber Crime Reporting Portal'** has been launched, as a part of the I4C, to enable public to report incidents pertaining to all types of cyber crimes, with special focus on cyber crimes against women and children.

- The '**Citizen Financial Cyber Fraud Reporting and Management System',** under I4C, has been launched for immediate reporting of financial frauds and to stop siphoning off funds by the fraudsters. A toll-free Helpline number '1930' has been operationalized to get assistance in lodging online cyber complaints.

- **The Massive Open Online Courses (MOOC)** platform, namely 'CyTrain' portal has been developed under I4C, for capacity building of police officers/judicial officers through online course on critical aspects of cyber crime investigation, forensics, prosecution etc. along withcertification.

- The Ministry of Home Affairs has provided financial assistance to states/UT's under the 'Cyber **Crime Prevention against Women and Children (CCPWC)'** Schemefor their capacity building such as setting up of cyber forensic-cum-training laboratories, hiring of junior cyber consultants and training of LEAs' personnel, public prosecutors and judicial officers.

- **National Cyber Forensic Laboratory (Evidence)** has been set up at Hyderabad. Establishment of this laboratory provides the necessary -5- R.S.US.Q.NO. 249 FOR 24.07.2024 forensic support in cases of evidence related to cyber crime, preserving the evidence and its analysis in line with the provisions of IT Act and Evidence Act; and reduced turnaround time.

Source: MHA

DIGITAL BHARAT NIDHI (DBN)

Context: The Department of Telecommunications (DoT) on July 4 released draft rules to operationalise the Digital Bharat Nidhi, in a fresh attempt by the central government at increasing telecom connectivity in rural areas.

Background:

- With the Centre notifying parts of the Telecom Act last month, it has also proposed additional rules for the final makeover of the Universal Service Obligation Fund (USOF) as the Digital Bharat Nidhi (DBN) – which would have a relatively wider scope than the USOF.

AboutDigital Bharat Nidhi

- Digital Bharat Nidhi would replace the erstwhile Universal Service Obligation Fund (USOF), which is a pool of funds generated by a 5 per cent Universal Service Levy charged upon all the telecom **fund operators on their Adjusted Gross Revenue (AGR).** Since its establishment in 2003, a common criticism of the USOF has been its relative underutilisation.

- The idea is that this money would be used to fund the expansion of telecom networks in remote and rural areas, where private companies may otherwise resist offering their services due to them not being revenue-generating markets.

How the Digital Bharat Nidhi will work

- As per the Telecom Act, contributions made by telecom companies towards the Digital Bharat Nidhi will **first be credited to the Consolidated Fund of India (CFI).** The Centre will deposit the collected funds to the DBN from time to time.

- Funds collected under the DBN will be used to support universal service through promoting access to and delivery of telecommunication services in underserved rural, remote and urban areas; fund research and development of telecommunication services, technologies, and products; support pilot projects, consultancy assistance and advisory support for improving connectivity; and for the introduction of telecommunication services, technologies, and products.

For Your Information:

- On June 26, multiple sections of the Telecommunications Act, 2023 came into effect, giving way to the first piece of the larger technology legislative puzzle to fall into place. This is among the three key laws the Centre wants to put together as a comprehensive legal framework for the country's burgeoning tech sector.

Source: Indian Express

MISCELLANEOUS

UNCHECKED URBAN EXPANSION

Context: Unchecked and ill-thought-out urban expansion is the principal reason behind chronic urban flooding in Delhi, and the larger National Capital Region (NCR).

Background:

- Last week, a spell of heavy rain brought parts of Delhi to a standstill. Streets across the city and in the larger NCR were inundated, leading to hours-long traffic block. Water-logging also led to lengthy power cuts, property damage, and loss of life.

Rapidly growing city :

MANY CITIES, SAME PROBLEM

BENGALURU

13 cm of rainfall in Bengaluru's Rainbow Drive Layout in 2022; one of the worst floods in 15 years

"We must not overlook the critical role of the storm water drain network in replenishing these (Bengaluru's lakes) water bodies. It is a network which is crucial to the health of the city and its lakes."

NARESH V NARASIMHAN, ARCHITECT, URBAN PLANNER

MUMBAI

94.4 cm rain on July 26, 2005; wettest 24 hours ever; city stopped entirely; more than 1,000 dead

"We need to make an assessment of our storm water drains and see if they are capable of handling excessive rain…We need to then improve early warning systems…An evacuation strategy is important."

SUBIMAL GHOSH, HEAD OF CLIMATE STUDIES, IIT BOMBAY

KOCHI & OTHER KERALA CITIES

Worst ever floods in mid-Aug 2018; 4 districts of Kerala submerged; Kochi inundated for days

"We need strong legal systems in place to ensure future structures follow the lay of the land, allow water to percolate, and don't narrow down streams."

MANOJ KINI, MD, KERALA TOURISM INFRASTRUCTURE LTD.

SHIMLA & OTHER HILL TOWNS

Catastrophic rainfall in July-Aug 2023 wreaked havoc in Mandi, Kullu, Manali, Shimla

"There should be new paradigms of the architecture of governance. Communities should be made custodians and some kind of insurance model should be developed."

TIKENDER PANWAR, URBAN SPECIALIST

(The experts spoke to The Indian Express in 2023)

- Delhi is undergoing one of the world's fastest urban expansions. According to data from NASA's Earth Observatory, the geographic size of Delhi almost doubled from 1991 to 2011.

- Most of this expansion has occurred on the peripheries of New Delhi, with erstwhile rural areas becoming engulfed in the capital's urban sprawl.

- Cities outside Delhi, but a part of the NCR — Bahadurgarh, Ghaziabad, Faridabad, Noida, and **Gurugram — have also witnessed rapid urbanisation.**

- According to the United Nations' The World's Cities in 2018 data booklet, Delhi will overtake Tokyo as the world's most populous city by 2030, with an estimated population of nearly 39 million, roughly two and a half times its population in 2000.

Topography and drainage

- Urban expansion, however, has paid little heed to Delhi's natural topography.Topography determines drainage patterns.

- **If one looks at Delhi's historic cities** — from Tughlakabad, Mehrauli, and Shahjahanabad to Civil Lines, New Delhi, and the Cantonment area — all were carefully selected, and built on higher ground.

- This allowed rainwater to drain out. But as the city has expanded, not enough thought has gone behind building with regards to the land's drainage capacities.

- Thus, with high-intensity rain there is significant run-off (unconfined flow of water, which occurs when there is more water on the land's surface than it can absorb), and existing drainage systems have been inadequate.

Concrete everywhere

- Due to urbanisation, water cannot simply flow down the existing natural gradient. Today, much of the water gets channelised into concretised nallahs (drains), which have been turned into sewage dumps.

- Construction in low-lying areas only makes things worse. For instance, many nallahs from across South Delhi, as far as Chanakyapuri and R K Puram, converge at Sarai Kale Khan, a low-lying area in South East Delhi, next to the Yamuna. This is why the urban village sees intense flooding every year.

- Construction in Delhi's flood plains began as early as the 1900s, when the British decided to build a railway line along the river bed.

Need for water masterplan

- Urban planners need to come up with a "water masterplan".There has been a consistent neglect of water as a planning resource.

- No comprehensive planning taking into account the city's clean and waste water flows has been carried out in the last 70 years.This is why, for example, the new Pragati Maidan Tunnel, inaugurated in 2022, has been flooded each monsoon.

- Water bodies which can help manage flooding have also been systematically destroyed. According to official **records, Delhi has some 1,000 water** bodies. But on the ground there are not more than 400. These 600 'missing' water bodies which could have managed flooding in the city have been filled up, and converted into valuable real estate.

- Unless we stop building in low-lying areas, de-concretise our lawns and pavements, and stop blocking the drains with solid waste, the floods won't stop. Understanding gradients and working with the lay of the land is crucial.

Source: Indian Express

STORY OF MODERN OLYMPICS

Context: Paris olympics started on Friday with some celebration events attracting criticism for insensitivity.

Background:-

- The first written evidence of the official Games dates from 776 BC, when the Greeks began measuring time in Olympiads, or the duration between each edition of the Olympic Games. The first Olympic Games were **held every four years in honour of the god Zeus.**

- In 393 AD, the Roman Emperor Theodosius I banned the Olympic Games for religious reasons, claiming that they encouraged paganism. They were not revived until the modern era.

- While French baron Pierre de Coubertin is widely recognized as the "father of the modern Olympics," the concept dates back to 1830s Greece.

Modern Greece and the Revival of the Olympics

- Greece gained independence after centuries of foreign rule, including four centuries under Ottoman control.The nation faced economic and cultural lag compared to much of Europe.Greek intellectuals viewed independence as a chance for national revival.

- Poet Panagiotis Soutsos (1806-1868) invoked Greece's ancient glory to inspire national pride, writing several poems in the early 1830s.Soutsos suggested that March 25, the anniversary of the Greek War of Independence, be marked by a revived version of the ancient Olympics.

- By the 1850s, Evangelos Zappas, a wealthy veteran of the Greek War of Independence, supported Soutsos' idea.Zappas proposed to the Greek government to hold the Games which he would fund from his own pocket.

- After three years of lobbying, Zappas' Olympics were held in 1859 in a city square in Athens. A number of competitions were organised-and winners received cash prizes.

- Zappas left his fortune to fund future Olympiads. Thus, the games were held again in 1870, 1875,

and 1888.

- Efforts to revive the ancient Olympics were not limited to Greece. In 1859, inspired by Zappas' **Olympics, W P Brookes, a doctor in Wenlock**, England, organized the "Annual Wenlock Olympic Games." In 1866, he held the first "National Olympic Games" in London, attracting participants from across Britain.

- The British aristocracy, promoting amateurism, restricted participation to "gentlemen," a move that was adopted in Greece, leading to a decline in the quality and interest in the early Olympics.

- **In 1880, Brookes proposed an international Olympic** competition open to all, aiming to rejuvenate the Olympics.Thus far, both in Britain and Greece, the Olympics had been restricted to nationals.

- It is this idea that Pierre de Coubertin eventually claimed as his own in 1892, after meeting Brookes and witnessing the Wenlock games in 1890.

- In 1894, he organized the "Congress for the Revival of the Olympic Games" in Paris, leading to the proposal for the first International Olympic Games in Athens in 1896.

- The first Olympic Games of the modern era took place in Athens, in the country where the original Games took place in Antiquity, in April 1896.Paris hosted the second Games in 1900.

- The Paris 1900 Olympic Games saw women compete for the first time.

Source:Indian Express

STATE OF THE GLOBAL CLIMATE 2023

Context: Recently, The World Meteorological Organization (WMO) has released the State of the Global Climate report,2023.

Background:

- **The WMO is an intergovernmental organization** with a membership of 192 Member States and Territories. India is a member of WMO.

About State of the Global Climate Report 2023:

- The report is an annual report issued by the United Nations weather agency WMO.

- **It provides crucial insights into climate trends**, extreme events, and the impact of human activities on our planet.

- This report serves as a **vital resource for policymakers, scientists, and concerned citizens to understand and address climate change effectively.**

Key Points about the State of the Global Climate, 2023

- The report confirmed that 2023 was the warmest year on record.

- **The global average near-surface temperature surged to at least 1.45°C a**bove pre-industrial levels.

- **Records were broken for greenhouse gas levels**, surface temperatures, ocean heat and acidification, sea level rise, Antarctic Sea ice cover, and glacier retreat.

- Extreme weather events such as heatwaves, floods, droughts, wildfires, and rapidly intensifying tropical cyclones caused significant damage, disrupting everyday life for millions and inflicting substantial economic losses.

Source: Indian Express

PAPER 1

AMRAVATI AND BUDDHISM

GS I – Salient aspects of art forms

Context: Union Finance Minister Nirmala Sitharaman **announced a special package of Rs 15,000 crore** for Andhra Pradesh in the Union Budget, which would be key to developing **Amaravati, the state's capital city.**

History of Amravati:

- In the late **1700s, Raja Vessareddy Nayudu unknowingly** discovered ancient limestone ruins in Andhra's **Dhanyakatakam village**, which he and the locals used for construction, leading to the renaming of the village to Amravati.
- The systematic destruction of **the ruins continued until 1816**, when **Colonel Colin Mackenzie's intensive** survey, despite causing further damage, led to the rediscovery of the **grand Amravati Stupa.**
- In 2015, the Andhra Pradesh Chief Minister **announced the new capital, Amaravati**, inspired by the historic Buddhist site, **aiming to develop it into a modern city akin to Singapore.**

Buddhism in Andhra Pradesh and the Significance of Amravati:

- Buddhism emerged in the **fifth century BCE in the ancient kingdom of Magadh** and made its way to Andhra Pradesh mainly through trade routes in Andhra Pradesh.
- Historians note that Buddhism's presence in Andhra coincided with its first urbanisation process, significantly aided by oceanic trade, which facilitated the religion's spread.
- The first significant evidence of Buddhism in Andhra Pradesh dates back to the 3rd century BCE when Emperor Ashoka set up an inscription in the region, providing a major impetus to its spread.
- Monks from Andhra were present at the first Buddhist council **held in 483 BCE at Rajgir, Bihar.**
- Buddhism thrived in the region for nearly six centuries until the 3rd century CE in isolated **sites like Amravati, Nagarjunakonda, Jaggayapeta, Salihundam,** and Sankaram continuing to practice the religion until the 14th century CE.
- Amravati is renowned for being the **birthplace of Mahayana Buddhism**, one of the major branches of Buddhism that emphasizes the path of the Bodhisattva.
- Acharya Nagarjuna, a prominent Buddhist philosopher, lived in Amravati and developed the Madhyamika philosophy, focusing on the concept of emptiness and the middle way.
- From **Amravati, Mahayana Buddhism spread across South Asia, China, Japan, Korea, and Southeast Asia**.

Difference Between the Nature of Northern Buddhism and Andhra Buddhism:

- Buddhism in North India received patronage from royals like Bimbisara and Ajatashatru whereas Buddhism in Andhra got patronage from merchants, craftsmen, and wandering monks.
- The successful traders and their **association with Buddhism influenced Andhra's political** rulers to issue inscriptions supporting the Buddhist sangha suggesting a bottom-up spread of Buddhism.
- Buddhism in Andhra reflects a unique adaptation to regional traditions as it integrated local religious practices, such as megalithic **burials, and Goddess and Naga (snake) worship, into its**

doctrines.

Amravati School of Art:

- It emerged as one of the three most significant styles of ancient Indian art, alongside the Mathura and Gandhara schools.
- It was patronized by the **Satavahanas and later by the Ikshavaku.**
- It used white marble and the sculptures were carved in a naturalistic manner.
- **It reflects themes** based on the life of Buddha and Jataka stories.
- It depicts Buddha in **both human as well as in animal form.**
- It has both **religious and secular images.**
- The sculptured panels of Amaravati are characterised by the **delicacy of forms and linear grace.**
  - It adorns numerous scenes of **dance and music** displaying the joy of life.

Different Schools of Buddhism:

- **Mahayana** is one of the two main schools of Buddhism. It is also known as the **Greater Vehicle.** It **believes in the heavenliness of Buddha** and i**dol worship** of Buddha and **Bodhisattvas** embodying Buddha Nature.
- **Hinayana is also known as the Lesser Vehicle.** It **believes in the original teaching of Buddha.** It **does not believe in Idol worship** and tries to **attain individual salvation** through self-discipline and meditation.
- **Theravada** is a Hinayana sect. It **remains closest to the original teachings** of the Buddha.
- **Vajrayana is also known as the Vehicle of the Thunderbolt and T**antric Buddhism.** It is grounded on **esoteric elements** and a very **complex set of rituals** compared with the rest of the Buddhist schools.
- **Zen** is a school of **Mahayana Buddhism that originated in China** during the **Tang dynasty** as the Chan school of Chinese Buddhism and later developed into various schools. It lays emphasis on m**editation.**

ARCTIC WILDFIRES

GS I – Important Geophysical Phenomena

Context: Smoke from raging wildfires has once again darkened the skies over the Arctic. It is the third time in the past five years that **high-intensity fires have erupted in the region**, Europe's Copernicus Climate Change Service (C3S) said last week.

Wildfires:

- A wildfire is an unplanned, unwanted fire **burning in a natural area, such as a forest,** grassland, or prairie.
- Wildfires are triggered by natural causes such as lightning, or by human activity.

Arctic Wildfires:

- Wildfires have always been a natural part of **Arctic boreal forest and tundra ecosystems.**
- Some pine trees even rely on the heat from these fires to open their cones and disperse seeds.

Reasons for Arctic Wildfires:

- The Arctic is warming approximately four times faster than the global average. **Since 1980, the Arctic has become about 3°C warmer.** The fast-paced warming has led to more frequent lightning in the Arctic, which has further increased the likelihood of wildfires.
- Arctic Wildfires are being fueled by extreme **weather events like droughts, heatwaves,** and lightning strikes which are a direct result of climate change.
- Rising temperatures have slowed down the polar jet streams **which are responsible for circulating air** between the mid- and **northern latitudes due to less of a temperature difference between the Arctic and lower latitudes resulting in prolonged** warm weather and intense heatwaves, further increasing wildfire risk.

Consequences of Arctic Wildfires:

- Arctic wildfires contribute to climate change by releasing greenhouse gases (GHGs) such as carbon dioxide (CO_2) into the atmosphere. In 2021, Arctic wildfires accounted for a third of the worldwide wildfire CO_2 emissions.
- In addition to **releasing CO2,** wildfires emit methane and black carbon as well as smoke and soot that affectsair quality and pollution levels, which negatively affects the health of local communities.
- Arctic Wildfires make **permafrost more vulnerable** to thawing by destroying upper insulating layers of vegetation and soil, causing ancient organic materials to decompose and release carbon.
- Large-scale thawing of Arctic permafrost could result in an unstoppable release of carbon, making it impossible to limit global warming within the **1.5-degree Celsius threshold.**
- In the Arctic, wildfires are threatening the habitats of ecologically important species such as caribou and reindeer.
  Other consequences include risks to life and property, economic costs, health effects, and public anxiety and stress.

ARUNA ASAF ALI

GS I – Personalities

Context: July 16 is the birth anniversary of Aruna, who is widely remembered for her daring act of hoisting the Tricolour.

Aruna Asaf Ali (1909-1996):

- She was born **on July 16, 1909, in Kalka as Aruna Ganguly and had been** brought up with a liberal Brahmo Samaj upbringing.
- She received a well-rounded education by attending the Sacred Heart Convent in Lahore before pursuing higher education at All Saints' College in Nainital.
- After her **graduation, she worked as a teacher at Calcutta's Gokhale Memorial School.**
- She married a Muslim Congress leader, Asaf Ali, against her family primarily because he was 20 years older than her.
- She became part of the female leadership of the Congress along with figures like Sarojini Naidu, Sucheta Kripalani, **and Kamaladevi Chattopadhyay**.
- She is known by the moniker **"Heroine of Quit India Movement"** and the "Grand Old Lady of Indian Independence."

Contribution by Aruna Asaf Ali towards Indian Independence:

- She actively **participated in the Civil Disobedience Movement** and was jailed for participating in it.
- After the Gandhi-Irwin Pact, all the political prisoners were to be released. But she was released after the public protested against her arrest.

- In 1932, she went on a hunger strike **in Tihar Jail against the mistreatment of** the political prisoners, which led to an improvement in their living conditions.
- She is one of the prominent personalities who played an important **role in the Quit India Movement. Aruna** got the **distinction of unfurling** the Tricolour at the Gowalia Tank meeting of the Quit India Movement in Bombay (Mumbai). She was proclaimed an **offender by the police and her** property was seized and later auctioned. But she evaded arrest and found mentorship and protection under Ram Manohar Lohia.
- She co-edited a newspaper called 'Inquilab' with Lohia and continued to struggle till 1946.
- She also voiced her **political opinions by supporting the Royal** Indian Navy Mutiny of HMIS (His Majesty's Indian Ship) Talwar.
- After Independence, she left the Congress for the Communist Party of India in which she created the 'National Federation of Indian Women'.
- In 1958, Aruna Asaf Ali achieved a significant milestone in her political career by becoming the first Mayor of Delhi.
- She **started a weekly journal 'Link'and the newspaper**'Patriot' to attain the objective of social reform through newspaper-led protests.

Recognition:

- She was awarded the **Order of Lenin Prize in 1965.**
- She was awarded the second highest civilian honour, the Padma Vibhushan, by the government of India, in her lifetime in 1992.
- She was given the highest civilian award, the Bharat Ratna, posthumously in 1997.
- **A stamp commemorating her was issued in 1998.**

Aruna Asaf Ali Marg in New Delhi was named in her honour.

CLASSICAL LANGUAGES

GS I – Indian Culture

Context: Centre set to tweak criteria for according classical language status.

Classical Languages in India:

- **Six languages** have been given the status of 'Classical Language' in India.
- The **first language** to be accorded that status is **Tamil**, which was declared a classical language back **in 2004.**
- In 2005, **Sanskrit** was accorded with the status.
- In 2008, **Telugu and Kannada** were conferred with the status, **followed by Malayalam** in 2013.
- **Odia is the latest addition** to the list and received status in 2014.

Criteria to declare a language as a Classical Language:

- It should have **high antiquity in** its **early texts/recorded history over** a period of **1,500-2,000 years.**
- A **body of ancient literature** or texts that is considered a valuable heritage by generations of speakers.
- The **literary tradition should be original** and **not borrowed** from another speech community.
- The **said language and literature** should be **distinct from its modern format**; there may also be a discontinuity between the classical language and its later forms or its offshoots.

Benefits of identifying as Classical Language:

- It gets financial assistance for setting up a centre of excellence for the study of that language and also opens up an avenue for two major awards for scholars of eminence.

The University Grants Commission can be requested to establish professional chairs for scholars of classical languages, starting with central universities.

Recent Developments:

- The central government **has decided to modify the criteria** for granting classical language status based on the recommendations of the Linguistics Expert Committee of the Ministry of Culture. They are:
- There have been demands from other language groups to classify their languages as **classical languages. For example, Bengali, Tulu, etc.**
- According to **National Education Policy-2020 works of literature** of Pali, Persian, and Prakrit shall also be preserved.

JAGANNATH RATH YATRA

GS I – Indian Culture

Context : 147th Lord Jagannath's annual Rath Yatra festival took place in Odisha.

Jagannath Yatra:

- It is the symbolic journey of three deities - Lord Jagannath, his elder brother Balabhadra, and their sister Subhadra.
- It is a popular Hindu festival which is celebrated annually in the city of Odisha.
- It falls on the **Dwitiya Tithi, the second day of the bright fortnight** of the Sharad Paksha, a fortnight of the Hindu lunar month of Asadh. The Sharad Paksha is a period of increasing moonlight and is considered auspicious for spiritual activities.
- It began with estimates ranging from **the 12th to 16th centuries and became more important during the rule of Odisha's Gajapati kings.**
- At the heart of the Jagannatha Rath Yatra lies the symbolic journey of three deities: Lord Jagannath, his elder brother Balabhadra, and their sister Subhadra. These deities are believed to emerge from the confines of the Jagannath Temple in Puri and embark on a nine-day sojourn to the Gundicha Temple, about 3 kilometres away.
- The **raths (chariots) of Lord Jagannath, his brother Balbhadra, and his sister** Subhadra are pulled by Khalashi community members in Puri as per age-old traditions.
- It is also known as the **Festival of Chariots**, as the deities are carried on **three massive wooden chariots that are pulled by devotees with ropes.**

Jagannath Temple:

- It is believed to have been constructed in the **12th century by King Anatavarman Chodaganga Deva** of the **Eastern Ganga Dynasty.**
- It is called **'Yamanika Tirtha'** where, according to Hindu beliefs, the power of 'Yama', the god of death has been nullified in Puri due to the presence of Lord Jagannath.

It was called the **"White Pagoda"** and is a **part of Char Dham Pilgrimages.**

CASTE CENSUS

GS I – Population and associated issues

Context: The Census Act of 1948 should be amended to make enumeration by caste mandatory, instead of leaving it to the whims of the Union executive.

Caste Census:

- It means the inclusion of caste-wise tabulation of India's population in the Census exercise.
- India has **counted and published caste data - from 1951 to 2011** - of the Scheduled Castes and Scheduled Tribes only.
- It also publishes data related to religions, languages, and socio-economic status.
- The **last caste census was conducted in 1931. All** caste data are projected on this basis. It became the basis for quota caps under the **Mandal formula.**
- Caste **data were collected for the 2011 census but the data were never made public.**

Significance of Caste Census:

- As caste continues to be a foundational social construct in India, the caste census becomes a social imperative. **Only about 5% of Indian marriages were inter-caste as of 2011-12**, the use of caste surnames and caste marks, residential segregation by caste persists and even choices of candidates for elections and ministers for Cabinets continue to be dictated by caste considerations.
- It is a legal imperative as the constitutionally-mandated policies of social justice which include reservations in electoral constituencies, education, and public **employment cannot be pursued effectively without detailed caste-wise data.**
- It is an administrative imperative as detailed caste-wise data is necessary to avoid/correct wrongful inclusions of undeserving castes and exclusions of deserving castes, and to guard against a few dominant castes in a reserved category crowding out others.
- It is a moral imperative as the absence of detailed caste-wise data has helped a coterie of elites, among upper castes and dominant **Other Backward Classes (OBCs)**, to corner a disproportionate share of the nation's assets, incomes, and positions of power.

Arguments against Caste Census:

- It is socially divisive as **India's social divisions predate Census efforts by nearly 3,000 years.** The Census counts of the **SCs and STs since 1951 have not led to any conflicts among these** castes or tribes. Further, India's Census enumerates religion, language, and region which are as divisive as caste, if not more. Casteism will not wither away by not counting caste in the Census, any more than communalism, and regionalism will disappear by not enumerating religion, language, and region.
- It is an administrative nightmare, unlike race which is a fuzzy concept, but is still enumerated in many **countries such as the U.S.,** where there is little or no ambiguity about anyone's caste. The GOI has been able to smoothly enumerate **1,234 castes in the SC category and 698 tribes** in the ST category. Therefore, it is difficult to understand why the enumeration of the 4,000-odd other castes, most of which are State-specific, should pose an intractable problem.

It would fuel demands for increased reservations. **On the contrary, the availability of caste-wise Census data would help curb arbitrary demands from caste groups and capricious** decision-making by governments. Policymakers would be able to objectively debate and address the claims of, say, the Marathas, Patidars, Jats, or any other groups for reservations. However, governments prefer fuzzy data because it gives them the latitude to implement reservations arbitrarily for electoral considerations.

PAPER 2

BHARATIYA NAGARIK SURAKSHA SANHITA

GS II – Government Policies and Interventions

Context: From July 1, India replaced its colonial-era **criminal laws with a set of three new penal laws.**

New Criminal Laws:

- The **Indian Penal Code of 1860** is substituted by the **Bharatiya Nyaya Sanhita or the BNS,** the Code of Criminal Procedure of 1973 is substituted by the Bharatiya Nagarik Suraksha Sanhita or the BNSS, and the Indian Evidence Act, is substituted **by the Bharatiya Sakshya Adhiniyam or the BSB.**
- They aim to replace colonial-era punishments with a justice-focused approach, integrating technological advancements in police investigations and court procedures.

Key Provisions of Bharatiya Nagarik Suraksha Sanhita (BNSS):

- It deals with various offenses, from traffic violations to murder. It differentiates between bailable and non-bailable offenses, **determining who has the right to bail.**
- Under the CrPC, detainees who have served half the maximum imprisonment term must be released on personal bond, excluding those facing the death penalty. **The BNSS extends this exclusion to those** facing life imprisonment and individuals with multiple pending cases.
- The CrPC allows m**edical examination** in rape cases, by a registered medical practitioner upon request from at least a sub-inspector. The BNSS permits any police officer to request such an examination.
- It categorizes offenses into cognizable and **non-cognizable. For cognizable offenses, police can arrest and start investigations without a warrant.** Non-cognizable offenses require a warrant and, in some cases, a victim's or third party's complaint.
- **It makes forensic investigation m**andatory for crimes punishable by seven years or more.
- The CrPC allows magistrates to obtain signatures or handwriting samples whereas the BNSS expands this to include finger impressions and voice samples, even from non-arrested individuals.
- **It gives timelines for procedures such as m**edical reports on rape victims must be submitted within seven days and judgments should be given within 30 days post-arguments, extendable to 60 days.

Issues with Bharatiya Nagarik Suraksha Sanhita:

- It allows the use of handcuffs during arrests of habitual offenders which goes against the ruling of the Supreme Court deeming handcuffs inhumane without judicial consent.
- It permitted **15-day police custody over 40-60 days, potentially complicating bail and custody procedures.**
- It puts restrictions on bail and plea bargaining that could exacerbate overcrowding of prisons.
- It creates a redundancy with some laws. For example, both BNSS and the Maintenance and Welfare of Parents and **Senior Citizens Act, 2007, provide for senior citizen maintenance.**
  It limits the scope of mandatory bail in case of multiple charges.

BHARATIYA NYAYA SANHITA

GS II – Government policies and interventions

Context: From July 1, India replaced its colonial-era **criminal laws with a set of three new penal laws.**

New Criminal Laws:

- The **Indian Penal Code of 1860 is substituted by the Bharatiya Nyaya Sanhita or the BNS,** the Code of Criminal Procedure of 1973 is substituted by the Bharatiya Nagarik Suraksha Sanhita or the BNSS, and the Indian Evidence Act, is substituted by the **Bharatiya Sakshya Adhiniyam or the BSB.**
- They aim to replace colonial-era punishments with a justice-focused approach, integrating technological advancements in police investigations and court procedures.

Key Provisions of Bharatiya Nyaya Sanhita:

- It introduced a handful of new crimes like Clause 69, which penalises sexual intercourse through the employment of deceitful means which can be punished **with imprisonment of up to 10 years and also be liable for a fine.**
- Clause **103 of the BNS, for the first time, recognises murder on the ground of race, caste, or community as a separate offence.**
- The BNS has included offences such as organised crime and terror, previously in the ambit of specific stringent laws like the Unlawful **Activities Prevention Act for terrorism, and state-specific laws such as the Maharashtra Control of Organised Crime Act for organised crime.**
- The BNS has defined Snatching as a new crime distinct from theft in Clause 304(1). Both theft and snatching prescribe a punishment of up to three years in jail.

Significance of Bharatiya Nyaya Sanhita:

- It has introduced community service as an alternate form of punishment for some offences like small theft, defamation, and attempt to die by suicide with an intention to keep a public official from discharging her duty.
- It has included **sexual intercourse with a minor wife under the ambit of rape by addressing the grey area that 15–18-year-old married girls fell in, under the IPC.**
- It has included offences for mob lynching and signals a legislative acknowledgement of such hate crimes.
- It has laid emphasis on video-conferencing of trials and prescription of timelines for speedy trials.

Issues/Grey Areas of Bharatiya Nyaya Sanhita:

- It has included Sedition as offence with a wider definition while incorporating the SC **guidelines in the 1962 Kedarnath Singh case, which upheld the constitutional validity of the crime of sedition.**
- It may end up criminalising consensual relationships and provide a fillip to the love jihad narrative.
- It does not define what constitutes community service, leaving it to the discretion of judges.

Note:

"Deceitful means" includes the false promise of employment or promotion, inducement, or marrying after suppressing identity.

COOPERATIVES IN INDIA

GS II – Government policies and interventions

Context: On the occasion of the 102nd International Day of Cooperatives, Union Home Minister and

Minister of Cooperation **Shri Amit Shah address the 'Sahkar se Samriddhi' program in Gandhinagar, Gujarat.**

Cooperative:

- A cooperative is an **autonomous group of people who have come together voluntarily** to achieve their common economic, social, and cultural needs and objectives through a democratically governed and collectively owned business.
- Cooperatives are founded on self-reliance, accountability, democracy, equality, equity, and solidarity.
- India has one of the **world's largest cooperative networks,** with over 800,000 cooperatives spread across various sectors like agriculture, credit, dairy, housing, and fisheries.

Significance of Cooperatives in India:

- **It p**rovides agricultural credits and funds to farmers, traders, etc. For example, Sahkari banks of different states.
- **It empowers marginalised communities. For example, t**he **Amul Dairy Cooperative in Gujarat,** with over 3.6 million milk producers including small & marginal farmers, empowers **rural communities by providing fair prices for milk and fostering economic independence, particularly for women.**
- **It provides** strategic inputs for the agricultural sector. For example, **Indian Farmers Fertiliser Cooperative Limited (IFFCO)** is the world's largest fertiliser producer that provides farmers with **essential agricultural inputs** like fertilisers, seeds, and credit at competitive prices, leading to increased productivity and farm incomes.
- **It facilitates access to essential services. For example, Kerala State Milk Marketing Federation (Milma),** a dairy cooperative, procures milk from farmers and supplies it to consumers in Kerala at affordable prices. This ensures market access for producers and provides essential dairy products to the population.

Challenges/Issues faced by the Cooperatives in India:

- Cooperatives face challenges due to a lack of transparency, **accountability, and democratic decision-making processes due to the concentration of power in the hands of few individuals.**
- Due to a lack of awareness among people about the goals of the policies governing cooperative institutions.
- Cooperatives often face issues related to a lack of inclusivity, the existence of structural inequalities, etc.
- The majority of cooperatives related to marginalised communities face challenges in accessing financial resources due to a lack of collateral or formal documentation required by traditional financial institutions.
  Cooperatives face infrastructural constraints and functional weaknesses due to their limited outreach.

International Day of Cooperatives:

- It is celebrated on 6th July every year.
- The theme for the year 2024 **is "Cooperatives Building a Better Future for All".** It aligns well with the objectives of the upcoming UN Summit of the Future whose theme is "Multilateral Solutions for a Better Tomorrow".

DEVELOPMENT AID TO NEIGHBOURING COUNTRIES

GS II – India and its Neighbourhood

Context:A major chunk of the Ministry of External Affairs' outlay, Rs 4,883 crore, has been earmarked for "aid to countries", of which countries from the neighbourhood – Nepal, Sri Lanka, Bhutan, Maldives, Afghanistan, and Myanmar – get the lion's share.

Development Aid to Neighbouring Countries:

- Bhutan has emerged as the top recipient of Indian government aid to foreign countries. It received the highest aid at Rs 2,068.56 crore, though slightly less than last year's Rs 2,400 crore.
- Nepal stands out as a **significant beneficiary with an allocation of Rs 700 crore, marking a substantial** increase of Rs 150 crore from the previous year's budget of Rs 550 crore, later revised to Rs 650 crore.
- Maldives maintained a consistent **allocation of Rs 400 crore, despite a higher revised amount of Rs 770.90** crore for the previous year. Despite the anti-India protests as well as remarks from its top leadership late last year, which caused a diplomatic row, India's investment in the archipelago nation continues to remain consistent.
- Sri Lanka **received Rs 245 crore, an increase from Rs 150 crore last year.**
- **Afghanistan receives Rs 200 crore**, illustrating India's role in aiding the country's stability and development amidst ongoing challenges.
- Maldives: Maldives got Rs 400 crore despite the anti-India protests and remarks from its top leadership.
- The Chabahar port project in Iran continues to receive a steady allocation of Rs 100 crore, unchanged for the past three years.
- African countries **collectively received Rs 200 crore, showcasing India's** expanding influence and engagement with the continent.
- **Seychelles receives Rs 40 crore, up from Rs 10 crore.**

Significance of Development Aid to Neighbouring Countries:

- It helps to strengthen diplomatic relations by enhancing diplomatic ties and fostering stronger **political and economic relationships.**
- It promotes regional stability leading to a more secure and stable region that benefits India's strategic interests.
- It supports economic development by funding infrastructure projects, and development programs that can boost economic growth in recipient countries, creating a more prosperous region.
- The improved infrastructure can **lead to increased trade and investment opportunities for India.**
- It improves India's strategic influence as India can exert influence and build alliances, ensuring that neighbouring countries align more closely with its interests.
- It helps in addressing humanitarian needs such as health care, education, and disaster relief, improving the **quality of life in recipient countries.**
  It strengthens India's soft **power and increases its reputation as a responsible regional leader.**

EFFECT OF CLIMATE CHANGE ON CHILDREN'S RIGHT TO PLAY

GS II – Issues relating to the development and management of social sector/services relating to health, education, and human resources.

Context: Climate change is limiting the time children get to engage with their peers and the world around

them through play.

Right to Play:

- It is enshrined **in Article 31 of the United Nations Convention on the Rights of the Child.**
- The United Nations declared June 11, 2024, as the International Day of Play.

Significance of Right to Play:

- **According to UNICEF,** play is vital for children to build social connections, develop physical and mental health, and enhance creativity.
- Playful interactions contribute to the positive mental health of parents, caregivers, and children, offering respite from adverse experiences. They are a means to process and explore the world.
- Play helps children to **learn skills such as confidence, self-esteem, resilience, interaction, social skills, independence, curiosity, and coping with** challenging situations needed to study, work, and relationships.
- Physical play such as running, skipping, and riding a bicycle helps children develop good physical fitness, agility, stamina, coordination, and balance.
- Playing can help children develop their social skills with others by helping them explore their feelings, develop self-discipline, learn how to express **themselves, and work out emotional aspects of life.**

Effect of Climate Change on the Right to Play:

- With extreme weather events and rising temperatures, climate change is limiting the time children get to engage with their peers and the world around them through play.
- UNICEF's **Children's Climate Risk Index (CCRI) report 2021 suggests that with a rank of 26 out of 163** countries, India is among the countries where children are most at climate risk.
- With floods, heatwaves, and droughts impacting families and children more frequently than ever before, heatwaves, in particular, are making outdoor play increasingly unsafe.
- Climate Change is posing significant health risks to children. A recent analysis by UNICEF revealed that South Asia has the highest percentage of children exposed to extremely high temperatures compared to other regions.

Challenges faced by Children in Accessing Play Spaces:

- Many children, especially in low-income areas, face significant **barriers to accessing safe play spaces due to urbanization and environmental degradation.**
- **The socio-economic disparities** and social identities such as caste, class, disability, and gender limit access to leisure and public spaces.
- Due to the poor maintenance of public playgrounds in poorer communities, the access to children's right to play is affected.
- In urban areas, even the indoor play opportunities of children are restricted due to overcrowded small living conditions**.**

Way Forward:

- **The bioclimatic design principles** should be adopted in playground infrastructure to create safe, climate-adapted play areas.
- **Access to green spaces** within cities should be expanded to counteract the urban heat island effect

- that makes outdoor play more feasible.
- **There should be a** focus on improving playground conditions and creating shaded areas in parks for children to play during warmer days through the involvement of communities.
- **Efforts should be made to adapt and preserve traditional architectural techniques** for natural cooling in building playgrounds and public spaces.
  Children should be encouraged to participate in local environmental actions, such as biodiversity mapping, to empower them and integrate their perspectives in urban planning and climate resilience strategies.

FISCAL FEDERALISM

GS II – Federalism

Context: Tamil Nadu Chief Minister M.K. Stalin alleged that the centre was withholding funding for the state's Metro Rail and other vital projects.

Fiscal Federalism:

- It explains the way in which financial powers and responsibilities are divided between the different levels of government in a country.

Significance of Fiscal Federalism in India:

- **It helps the governments at different levels in the country to address** the regional imbalances via mechanisms like tax sharing, grants-in-aid, and performance-based incentives.
- **It ensures fiscal discipline through** frameworks like the Fiscal Responsibility and Budget Management (FRBM) Act which helps in maintaining macroeconomic stability and sustainability.
- **It promotes** cooperation and coordination between the centre and states, through negotiations regarding the sharing of **resources and responsibilities.**
- By empowering state and local governments with financial autonomy and resources it supports decentralization which helps to strengthen grassroots democracy and responsive governance.
- **It** helps to incorporate **dynamic changes like the shift towards** a market-oriented economy and undertake taxation reforms like the introduction of GST.

Challenges to Fiscal Federalism in India:

- **In the gross tax revenue, the share of states** has decreased from 35% in 2015-16 to 30% in 2023-24.
- **The centre's direct support** to states, in the form of grants-in-aid, has declined from ₹1.95 lakh crore in 2015-16 to ₹1.65 lakh crore in 2023-24.
- **There has been disproportionate growth between the centre and the state's revenue.**
  The centre's tax revenue has increased by 2.3 times from **₹14.6 lakh crore to ₹33.6 lakh** crore whereas the states' share in the tax revenue has only doubled from **₹5.1 lakh crore to ₹10.2 lakh** crore during 2015-16 to 2023-24.
- **There is an increase in conditional grants as s**everal grants to states are contingent on fulfilling certain conditions, including the insistence on specific labelling, which imposes the centre's preferences over state priorities.
- **There is an erosion of the state's autonomy regarding taxation due to the implementation of GST as t**he ability of states to set tax rates on their own revenue sources has been significantly diminished.

GS II – Appointment to various constitutional posts, powers, functions, and responsibilities of various constitutional bodies

Context:A three-judge SC Bench took up the issue of the Governor's immunity after a contractual employee of the West Bengal Raj Bhavan moved a petition against Governor CV Ananda Bose, alleging sexual harassment.

Article 361 of the Constitution:

- **It states that the President, or the Governor of a state,** "shall not be answerable to any court for the exercise and performance of the powers and duties of his office or for any act done or purporting to be done by him in the exercise and performance of those powers and duties" unless it is by Parliament for impeachment from office.
- It further says **"no criminal proceedings whatsoever shall be instituted or continued";** "no process for the arrest or imprisonment" can take place while the President, or the Governor, holds office.
- It is an exception to the Right to Equality under Article 14.
- It shields the President and Governor from criminal prosecution and bars any judicial scrutiny of their actions.

Governor's Immunity under Article 361 of the Constitution:

- It traces its origin to the Latin maxim rex non potest peccare or **"the king can do no wrong",** which is rooted in English legal traditions.
- During the Constituent Assembly's discussion on Article 361, member **H V Kamath questions the extent of criminal immunity for the President and Governors**, particularly regarding the initiation of proceedings against them for criminal acts. Despite these concerns, the article was adopted without further debate.
- No criminal cases can be initiated or continued **against them, and no arrest or imprisonment orders can be issued by any court.**
- It states that the President or the Governor of a State is not answerable to any court for the exercise of their powers and duties or for any act done in the exercise of those powers and duties.
- **It** mandates a two-month notice for any civil proceedings related to personal acts.
- **It** restricts any arrest or imprisonment orders during their term.

Judicial Interpretation of Article 361:

- In **Dr. SC Barat And Anr vs. Hari Vinayak Pataskar Case of 1961**, a distinction was made between the Governor's official and personal conduct. The official actions were granted complete immunity and civil proceedings can be initiated with the prior notice of two months for the Governor's actions.
- In the Rameshwar Prasad vs. Union of India Case of 2006 complete immunity was provided for the constitutional actions of the Governor but allowed judicial scrutiny for malafide actions.
- In the **Vyapam Scam Case of 2015,** the Madhya Pradesh High Court ruled that the Governor had absolute protection under Article 361(2) from malicious publicity while in office.
- **In the State of Uttar Pradesh vs. Kalyan Singh Case of 2017,** the Governor was entitled to immunity under Article 361 while in office. Charges related to the Babri Masjid demolition would proceed once he ceased to be Governor, reinforcing the protection of the Governor's duties and dignity. Telangana High Court Judgment of 2024 observed that **"there is no express or implicit bar in the Constitution which excludes the power of judicial review in respect of an action taken by the**

Governor". It stated that Article 361 immunity is personal and does not exclude judicial review.

IMPORTANCE OF QUAD AND BRICS FOR INDIA

GS II – Regional and Global Groupings and Agreements involving India and/or affecting India's interests.

Context: The Quad Foreign Ministers' meeting in Japan at the end of July in Tokyo. The meeting is taking place when the United Nations Security Council (UNSC) is paralyzed and its reform nowhere in sight, international law is violated with impunity both in the Ukraine war and the assault on Gaza by Israel, an axis of Russia, China, North Korea, and Iran is gaining traction, and Chinese influence is growing not just in the Indo-Pacific, but elsewhere too.

QUAD:

- It is a strategic forum comprising four countries: the United States, Japan, India, and Australia. It is also known as the Quadrilateral Security Dialogue. It is aimed at promoting **regional security** and economic cooperation in the Indo-Pacific region.

Importance/Significance of QUAD for India:

- **It plays an important strategic role as** a platform to discuss and address the common challenges faced by the Indo-Pacific region, such as China's increasing assertiveness in the region through the '**String of pearls'** theory.
- **It serves as a platform to** launch initiatives to promote economic development in the region. For example, the **Asia-Africa Growth Corridor, the Blue Dot Network, and the Supply Chain Resilience Initiative.**
- **It is significant in ensuring maritime security** by conducting joint naval exercises and coordinating on issues like freedom of navigation, piracy, and illegal fishing.
- **It helps to** promote regional stability in the Indo-Pacific region based on the principles of a free, open, and inclusive Indo-Pacific.
- **It** aligns with India's 'Act East Policy', emphasizing deeper engagement with East Asian nations and strengthening maritime security cooperation.

Issues/Challenges associated with the QUAD:

- **It lacks a definitive formal structure as it does not have** a secretariat or any permanent decision-making body.
- **It faces difficulty in engaging China constructively as China views** QUAD with suspicion and as an attempt to contain its rise.
- **It seems like an imbalanced cooperation as t**he members do not have the same levels of financial resources, strategic awareness, and military capabilities in the Indian Ocean.
- As QUAD members have varying levels of military capabilities it could limit the group's ability to take action if needed.
- **It requires coordinated efforts to tackle various geopolitical challenges like** territorial disputes, regional tensions, and non-traditional security threats which may be difficult.
- **It lacks coherent actions in dealing with** the issues in the Indo-Pacific region which can undermine the group's credibility in addressing regional challenges.
- Quad's security-centric approach, especially with AUKUS, does not fully align with India's broader vision.
India's independent stance on Russia and Ukraine conflicts with some Quad members' positions.

BRICS:

- It is an acronym representing a group of five major emerging economies: Brazil, Russia, India, China, and South Africa. These countries together account for over 40% of the world's population and nearly 30% of the global GDP. It aims to enhance cooperation in trade, finance, agriculture, and technology among these countries.

Importance/Significance of BRICS for India:

- **It provides a platform for strategic cooperation** on security, terrorism, climate, and trade.
- **It has economic significance as** India gains access to a large market of more than three billion people, offering vast business opportunities.
- **It helps in getting access to funds for development projects through the** New Development Bank.
- **It helps in reforming multilateral institutions by promoting them to be more inclusive and equitable global order.**
- It helps to strengthen ties with developing countries and balance Western influence.

Issues/Challenges associated with BRICS:

- **It faces challenges due to overlapping with other parallel groupings** like IBSA (India, Brazil, and South Africa).
- **Its objective is affected due to the** ongoing economic slowdown and trade disputes among member states.
- Initiatives like the Belt and Road Initiative highlight different geopolitical interests among its members.

It is dominated by the influence of Russia, India, and China which could potentially hinder the ability of other members, such as Brazil and South Africa, to have a meaningful impact on the group's decisions and direction.

INDIA-AUSTRIA RELATIONS

GS II – Bilateral Relations

Context: The recent visit of PM Narendra Modi's visit to Vienna was the first by an Indian Prime Minister to Austria since June 1983, when Indira Gandhi travelled to the country.

India and Austria Relations:

- India has maintained its political relations with Austria through high-level political exchanges by the heads of the states, ministerial-level engagements and visits, and parliamentary-level exchanges.
- **Both India and Austria** have taken steps to strengthen and deepen bilateral economic cooperation through the e**stablishment of The Indo-Austrian Joint Economic Commission (JEC), India exports e**lectronic goods, apparel, textiles, footwear, rubber articles, and railways parts to Austria whereas **India imports m**achinery, mechanical appliances, iron and steel **from Austria.**
- Both countries are cooperating in space technology as Austria's first two satellites TUGSAT-1/BRITE and UniBRITE **were launched by India's PSLV–C20 from Satish Dhawan Space Centre, Sriharikota.**
- Both India and Austria shared deep cultural relations since the 16th century when Balthasar Springer travelled from **Tyrol in 1505 to India and visited India's philosopher-poet and Nobel Laureate Rabindranath Tagore twice to Vienna – in 1921 and 1926. Ayurveda,** the

- Indian traditional system of medicine and Yoga has been widely acknowledged and practiced in Austria.
- The Indian diaspora estimated over **31,000 Indians mainly consists of professionals working primarily in the healthcare sector and the multilateral UN bodies.**

Significance of India-Austria Relations:

- Both countries have cooperated on global issues like UN Security Council reforms along with shared values of democracy and pluralism.
- Austria is an important link for India in its relationship with Europe, especially with countries of central and Eastern Europe.
- Austria has expertise in green hydrogen technologies which can be of immense significance for India's Green Hydrogen Mission and India's aim for net zero emissions by 2070.

Challenges in India-Austria Cooperation:

- There is a significant trade imbalance in favour of Austria. India mainly imports high-value goods like machinery, pharmaceuticals, and chemicals from Austria while exporting relatively less.
- India and Austria are geographically distant from each other which has limited the frequency and depth of bilateral engagements.
- Austria's economy has a strong industrial and manufacturing base whereas India's economy is primarily driven by services and agriculture. Thus, the difference in economic structures has led to low trade bilateral trade penetration.
  The slow and delayed visa policies and procedures for travel between the two countries can impact people-to-people contacts, business travel, and tourism.

INDO-FRENCH HORIZON 2047 ROADMAP

GS II – India's Bilateral Relations

Context: France President Emmanuel Macron and Indian Prime Minister Narendra Modi elevated the 'Partnership for the Planet' as one of the three pillars of the Indo-French Horizon 2047 Roadmap.

Initiatives related to the Indo-French Horizon 2047 Roadmap:

- Both India and France are committed to promoting environmental sustainability through initiatives that focus on sustainable **urban developmen**t, curb plastic pollution through international agreements, recycling programs with innovative solutions, **waste management**, **and water conservation.** Projects like the **Pune Metro** which emphasises sustainable urban infrastructure development are supported by the **French Development Agency (AFD)**.
- **India and France s**upport renewable energy, enhancing energy efficiency, and reducing greenhouse gas emissions through initiatives such as the **International Solar Alliance.**
- **India and France** are engaged in conservation efforts to protect biodiversity hotspots and endangered species through projects such as the **conservation of one-horned rhinos in Assam**, supported by AFD.
- France is targeting 30,000 Indian students **by 2030** and issuing **5-year short-stay** visas for Indian Master's degree holders.
- **Both countries have opened** new consulates in Marseille and Hyderabad.
- **Both countries have c**ollaborated on establishing a new National Museum in New Delhi and exchanging audio-visual content.

- India and France have jointly made plans to enhance cooperation in the **Indo-Pacific by** focusing on maritime security, and economic collaboration, and forming strategic partnerships with regional nations by conducting joint military exercises like **Shakti, Varuna, and Garuda.**
- **The** Defence Acquisition Council (DAC) has approved the acquisition of **26 Rafale aircraft from France for the Indian Navy.**
- India and France signed an agreement on **civil nuclear cooperationin 2008**. France is involved in the construction of the **Jaitapur Nuclear Power Project.**

Significance of India-France Relations:

- It helps maintain the stability and security of the Indo-Pacific region and counter the growing Chinese aggression with initiatives like the India-France Joint Strategic Vision for cooperation in the Indian Ocean Region in 2018
- It is uniquely balanced, free from Anglo-Saxon influences in France and anti-Western sentiments in India. It is depicted in France's support of India after the nuclear tests in May 1998.
- 3. France's support plays an important role in India's entry into important organisations like the United Nations Security Council and the Nuclear Suppliers Group.
- It is significant for checking Russia's assertiveness in Europe and China's assertiveness in Asia to ensure global stability and power parity in the emerging world order.
- The **Horizon 2047 agreement outlines a 25-year roadmap** for bilateral cooperation by emphasising collaboration in advanced technologies like **supercomputing, artificial intelligence, and quantum computing**, which are critical for India's future development.

Challenges in India-France Relations:

- Due to absence of a Free Trade Agreement between India and France, there has been issues in deepening of India-France economic relations.
- India- France's economic relation suffers due to trade imbalances and France is critical of India due to inadequate protection of intellectual property rights (IPRs) of French businesses operating in India.
- Non-operationalisation of the negotiated projects like stalled Jaitapur Nuclear Project makes it challenging in the relation between India and France.
  Differing approaches to global issues where France has openly criticised Russia's invasion of Ukraine, while India has maintained a more neutral stance.

LEADER OF OPPOSITION IN LOK SABHA

GS II – Parliament

Context: Rae Bareli MP Rahul Gandhi is Leader of Opposition in Lok Sabha, a position that lay vacant for 10 years because no party had numbers equalling a tenth of the strength of the House, which has been by practice a requirement to lay claim to the post.

Leader of Opposition in Lok Sabha:

- It is a statutory office provided for in the Salary and Allowances of Leaders of Opposition in the Parliament Act, of 1977.
- The Act describes the Leader of Opposition as a **"member of the Council of States or the House of the** People, as the case may be, who is, for the time being, the Leader in that House of the party in opposition to the Government having the greatest numerical strength and **recognised as such by the Chairman of the Council of States or the Speaker of the House of the People".**

- In order of precedence, the Leaders of Opposition in Lok Sabha and Rajya Sabha come at No. 7, along with Union Cabinet Ministers, the National Security Advisor, the Principal Secretary to the PM, the Vice-Chairperson of the NITI Aayog, former PMs, and Chief Ministers.
- The leader of the party in opposition to the government which has the greatest number becomes the Leader of Opposition.
- The **Speaker needs to recognise him/her as the Leader of Opposition.**
- The Leader of Opposition sits in the front row to the left of the Chair and enjoys certain privileges on ceremonial occasions like escorting the Speaker-elect to the rostrum.
- The Leader of Opposition is also entitled to a seat in the front row during the Address by the President to both Houses of Parliament.
- The main duty of the Leader of Opposition is to serve as the voice of the opposition in the House. An official booklet on Parliament published in 2012 says the Leader of Opposition in Lok Sabha "is considered as a shadow Prime Minister with a shadow Cabinet, **ready to take over the administration if the Government resigns or is defeated on the floor of the House".**
- The Leader of Opposition is the opposition's representative in the high-powered committees headed by the Prime Minister for appointment to key posts such as the Director of CBI, the Central Vigilance Commissioner and Chief Information Commissioner, the Chairperson, and Members of the National Human Rights Commission, and the Lokpal.

NATIONAL TESTING AGENCY (NTA)

GS II – Regulatory Bodies

Context: The National Testing Agency (NTA), which is under scrutiny for multiple question paper leak controversies, failed to ramp up its infrastructure for conducting tests in online mode in 2024, as its tender to multiply testing centres failed to take off.

National Testing Agency (NTA):

- It is an autonomous and self-sustained testing organization to conducts entrance examinations for admission/fellowship in higher educational institutions.
- It was established as a society **registered under the Indian Societies Registration Act, of 1860.**
- **It** aims to conduct efficient, transparent, and international standardized tests to assess the competency of candidates for admission and recruitment purposes.

Concerns/Issues faced by NTA:

- There have been allegations of irregularities in the conduct of exams like NEET-UG, including suspected question paper leaks, distribution of wrong question papers, and technical glitches which have posed serious questions on the integrity of the organisation.
- The award of grace marks to the candidates and the unusual spike in the number of candidates securing full marks, for example, in the recently held NEET exam 67 students secured full **720/720 which has posed questions regarding the procedure adopted by the National Testing agency.**
- There have been allegations due to the lack of transparency and accountability on the part of NTA to address the concerns of the students as it has often been an opaque body regarding its functioning.
- Its centralised nature has created operational and administrative challenges for the agency like a lack of infrastructure in empanelled test centres.
- **Its vulnerability to paper leaks increased due to t**he reversal of pen and paper mode from the online mode.

Way Forward:

- **NTA has to promote complete transparency in its functioning** from the conduct of examination to and publishment of results which helps in regaining the trust of candidates.
- The government should take steps to overcome the technical glitches, cheating scams, paper leaks, and proxy candidates that have plagued the exams this year.
- **The government should make efforts to decentralise the structure of** the NTA which will help to conduct examinations on an enormous scale.
  The states should join hands with the central government in conducting All India exams which helps in promoting integrity of the examination system.

RIGHT TO SHELTER

GS II – Government policies and interventions

Context: The Supreme Court urged a balance to be struck between railway infrastructure development at Haldwani, considered to be the doorway to the hills in Uttarakhand, and the fundamental right to shelter of nearly 50,000 people accused of illegally living on railway land.

Right to Shelter:

- In India, it is a fundamental right under the Right to Life guaranteed by Article 21 of the Indian Constitution.
- Article 19(1)(e) provides the Right to reside and settle in any part of the territory of India.
- It ensures that every citizen has access to adequate housing, which is considered essential for living a life with dignity.
- It stands violated when there are forced evictions without proper rehabilitation and due process.

Judicial pronouncements related to the Right to Shelter:

- In Olga Tellis v. Bombay Municipal Corporation **Case of 1985, the Supreme Court recognized the right to livelihood as a part of the right to life under Article 21.**
- In the State of Maharashtra v. Basantibhai Khetan Case of 1986, the Supreme Court upheld land ceiling laws, stating they do not violate fundamental rights. However, it made the state responsible for providing rehabilitation and resettlement.
- **In the Chameli Singh v. State of Uttar Pradesh Case of 1996**, the Supreme Court declared that the right to shelter is a fundamental right under Article 21. It includes adequate living space, safe and decent structures, clean surroundings, light, air, water, electricity, and sanitation.
- In the Ahmedabad Municipal **Corporation v. Nawab Khan Gulab Khan Case of 1997, the Supreme Court directed the state to construct** affordable houses for the poor, reiterating the state's duty to provide shelter and make the right to life meaningful.
- In Sudama Singh and others v. State of Delhi and others Case of 2010 the Delhi High Court ruled that any eviction must include adequate compensation or alternate accommodation.

Legislations to aid the Right to Shelter in India:

- Slum Areas (Improvement and Clearance) Act of 1956 gives authority to the government to clear slum areas that are unfit for habitation due to health and safety risks. It also formulates redevelopment plans to replace substandard housing with better, more durable structures.
- The Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act of

2006 provides the right to hold and live in forest land under individual or common occupation for habitation or self-cultivation for livelihood. It recognizes the rights of forest communities to use and manage forest resources.

- **Real Estate (Regulation and Development) Act of 2016 (RERA) regulates** the real estate sector to ensure transparency, accountability, and timely delivery of housing projects. It protects homebuyers by mandating the registration of projects and providing a grievance redressal mechanism.
- Right to Fair Compensation and Transparency in Land Acquisition, Rehabilitation and Resettlement Act of 2013 provides detailed provisions for resettlement and rehabilitation of those affected by land acquisition. It ensures that displaced families receive **support to relocate and rebuild their lives, including housing.**

Model Tenancy Act of 2021 aims to establish a speedy adjudication mechanism for dispute resolution, regulate the renting of premises, and protect the interests of landlords and tenants.

SHANGHAI COOPERATION ORGANISATION (SCO) SUMMIT 2024

GS II – International Organisation

Context: Shanghai Cooperation Organisation (SCO) Summit 2024 was concluded in Astana, Kazakhstan.

Shanghai Cooperation Organisation (SCO):

- It is a Eurasian political, economic, and military organisation aiming to maintain peace, security, and stability in the region.
- It is a **permanent intergovernmental international organisation**, created in June 2001 in Shanghai (China).
- Its founding members are Kazakhstan, China, Kyrgyzstan, Russia, and Tajikistan.
- It represents **approximately 42% of the world's population, 22% of its land area, and 20% of its GDP**.
- **Its official working languages are** Chinese and Russian.
- **Its Secretariat is located in** Beijing, China.
- **India became a permanent member of the SCO in 2017.**
- It currently has ten member states namely the Republic of India, the Islamic Republic of Iran, the Republic of Kazakhstan, the People's Republic of China, the Kyrgyz Republic, the Islamic Republic of Pakistan, the Russian Federation, the Republic of Tajikistan, Belarus, and the Republic of Uzbekistan.
- It focuses on **strengthening mutual trust and neighborliness among the Member States,** promoting their effective cooperation in politics, trade, economy, research, technology, and culture, as well as in education, energy, transport, tourism, environmental protection, and other areas; making joint efforts to maintain and ensure peace, security, and stability in the region; and moving towards the establishment of a democratic, fair and rational new international political and economic order.

Key Highlights of SCO Summit 2024:

- Belarus has become the 10th member state of the SCO.
- The 24th SCO Summit in Astana adopted the **Astana Declaration** and approved 25 strategic agreements on energy, security, trade, finance, and information security.
- It adopted the SCO Development Strategy until 2035, including resolutions on combating terrorism, separatism, and extremism, anti-drug strategy, energy cooperation, economic development, and cooperation in **protected areas and eco-tourism.**

- **The External Affairs Minister of India and the Chinese** Foreign Minister emphasised the need for complete disengagement of troops and restoring peace along **the Line of Actual Control (LAC).** They also agreed to expedite efforts through diplomatic and military channels to resolve remaining issues in Eastern Ladakh.
- The **'Make in India'** initiative was highlighted as it has the potential to become a significant engine for global economic growth. India expressed openness to partnering with countries in the Global South for capacity building and economic development.
- The External Affairs Minister of India urged the global community to isolate countries that harbour terrorists and condone terrorism.

SIGNIFICANCE OF THE GULF REGION FOR INDIA

GS II – Bilateral, Regional, and Global Groupings and Agreements affecting India's interests.

Context: Since the 1980s, the Gulf countries have been among India's top petroleum suppliers.

Gulf Region:

- It consists of countries that share the border with the Persian Gulf. It consists of Bahrain, Kuwait, Oman, Iraq, Qatar, Saudi Arabia, and the United Arab Emirates.

Significance of the Gulf Region for India:

- The Gulf region plays a crucial role in India's energy security and pace of economic growth as nearly 40 % of India's crude oil is imported from the region.
- The Gulf region is g**eostrategically important due** to its connectivity with Europe, Asia, and Africa. India's enhanced engagement in the region provides it with a platform to expand its influence and shape regional dynamics.
- The well-balanced relationship with the Gulf countries provides a platform for India to participate in the Gulf Cooperation Council (GCC), **Arab League**, and **Indian Ocean Rim Association (IORA)**,
- India seeks to enhance trade and economic cooperation with Gulf countries as they have robust economies with substantial investment potential, exploring opportunities for investment, infrastructure development, and bilateral trade. It makes way for Indian businesses to tap into the Gulf's lucrative markets and benefit from their diverse **sectors such as construction, real estate**, finance, and tourism.
- The Gulf countries are home to millions of Indian people who play a vital role in India's economy through remittances. The good ties with these nations benefit Indian workers by providing better welfare and protection, enhancing labour migration, and creating more employment opportunities.
- The strong bilateral relations **promote cultural exchanges, tourism**, and people-to-people interactions, fostering mutual understanding and goodwill between the nations that help preserve and promote the shared heritage, traditions, and values of the Indian diaspora in the Gulf.

Issues/Challenges in India-Gulf Region Relations:

- **The Gulf region faces geopolitical rivalries such as** the Iran-Saudi Arabia rivalry, the Yemeni civil war, and the Qatar diplomatic crisis which can impact India's relationship with the Gulf region adversely.
- **The trade between India and the Gulf region is affected due to regional instability caused by** political instability by the rise of extremist groups such as ISIS.
- Even though China has emerged as an important player in the region's geopolitics it is nowhere near displacing the US **as the principal external actor in the Gulf region which makes India heavily**

dependent on the US for fostering its relations with Gulf nations.

WORLD DRUG REPORT 2024

GS II – Issues related to Health

Context:The World Drug Report 2024 was released by the United Nations Office on Drugs and Crime (UNODC).

Key Highlights of the World Drug Report 2024:

- The number of drug users worldwide reached 292 million which resulted in a 20% increase over the past decade.
- **Cannabis is the most popular drug used by 228 million** users. It is followed by Opioids, Amphetamines, Cocaine, and Ecstasy.
- It warns about a new class of synthetic opioids called nitazenes which is more potent than fentanyl.
- There is a treatment gap as only one in eleven gets treatment who are suffering from drug use disorders.
- There is a gender disparity in treatment access as only one in 18 women with drug use disorders receive treatment, compared to one in seven men.
- According to data from the **Narcotics Control Bureau (NCB)**, there are currently around **100 million people** in India addicted to various narcotic substances.

World Drug Day 2024:

- It is also known as International Day Against Drug Abuse and Illicit Trafficking and is observed every year on the 26th of June.
- It was **established in December 1987 by the United Nations General Assembly to** raise awareness about the global fight against drug abuse and illicit drug trafficking.

The theme for 2024 was "The evidence is clear: invest in prevention".

Major Drug-Producing Regions in the World:

- The Golden Crescent comprises Afghanistan, Iran, and Pakistan. It is a major global hub for opium production and distribution.

The Golden Triangle is located at the intersection of Laos, Myanmar, and Thailand notorious for heroin production.

PAPER 3

AIR POLLUTION IN DELHI

GS III – Pollution

Context: The recent Lancet Report found out that about 11.5 percent of deaths in Delhi every year, roughly 12,000 deaths, can be attributed to air pollution, the highest for any city in the country, a first-of-its-kind multi-city study in India.

Reasons for Air Pollution in Delhi:

- Pollutants produced due to stubble burning by farmers in Punjab, Haryana, and Uttar Pradesh are carried towards Delhi and get trapped over the region because of stagnant winds in winter.
- Delhi has more than 9 million registered vehicles. The Central Pollution Control Board (CPCB) and the National **Environmental Engineering Research Institute (NEERI)** have declared vehicular emissions as a major contributor to Delhi's increasing air pollution.
- Industrial **pollution as industries located in Delhi-NCR have failed to adopt environment**-friendly fuels and techniques.
- During the winter months when pollution levels are at the peak, the bursting of firecrackers during festivals adds to the already existing pollution load.
- With more than 11000 people per square kilometer, Delhi is among the most densely populated cities in the world. Overpopulation adds up to the various types of pollution.
- The burning of municipal solid waste, both at landfill sites and other areas further contributes to pollution.
- Delhi is landlocked from all sides. The north-westerly winds coming from Pakistan and Afghanistan bring large amounts of dust particles to the region.
- Due to very little focus on public transport as an alternative mode of transport.

Measures taken to tackle Air Pollution in Delhi:

- According to the Odd-Even Vehicles Plan, vehicles with odd and even registration numbers would ply on the road on alternate days.
- The government of Delhi has banned diesel vehicles over 10 years old, and petrol vehicles over 15 years old.
- Graded Response Action Plan (GRAP) has been implemented to tackle air pollution in Delhi. It includes measures like shutting down Badarpur Thermal Power Plant and a ban on construction activities.
- Farmers are **subsidized to use farm machinery that reduces the need to burn stubble and fines have been imposed for stubble burning.**
- The government of Delhi has banned the bursting of firecrackers to prevent an increase in air pollution.
- Construction of Eastern and Western Expressways for by-passing non-destined traffic to Delhi.
- Vehicles plying on the streets of Delhi-NCR must use vehicles that follow Bharat Stage VI norms.

The key findings of the recent Lancet Report:

- **Every year on average, more than 33,000 deaths could be attributed**

to air pollution across 10 cities - Ahmedabad, Bengaluru, Chennai,
Delhi, Hyderabad, Kolkata, Mumbai,
Pune, Shimla, and Varanasi.

- **The PM2.5 concentrations in the above-mentioned 10 cities, exceeded the safe limits defined by the World Health Organisation (15 micrograms per cubic meter) on 99.8 percent of the days.**
- The study found a 1.42 percent rise in mortality for every increase of 10 micrograms/cu meter in the PM2.5 levels when all the ten cities were taken together.

ARTIFICIAL INTELLIGENCE (AI) IN HEALTHCARE

GS III – Artificial Intelligence

Context: India has a large and growing population, but a shortage of qualified healthcare professionals. Artificial Intelligence (AI) offers a way to bridge this gap and improve access to care for millions of people.

Significance of Artificial Intelligence (AI) in Healthcare:

- India has **only 64 doctors available per 1,00,000 people compared** to the global average of 150. AI can help with the shortage of healthcare workers in India by allowing doctors to consult patients remotely through telemedicine, reaching those in remote areas.
- AI tools can quickly analyze medical tests and images, helping doctors make accurate diagnoses. Virtual health assistants can monitor patients and give advice.
- AI has been used to develop a digital nurse to help people monitor a patient's condition and follow up with treatments, between doctor visits.
- According to Harvard's School of Public Health, using AI to make diagnoses may reduce treatment costs by up to 50% and improve health outcomes by 40%.
- AI helps monitor the medication courses of patients which is very important to ensure the proper dose regime to be followed by the patient.

Challenges in using Artificial Intelligence (AI) in Healthcare:

- Due to the limited availability of high-quality, labelled healthcare data needed to train AI models. The patient data is often fragmented across different systems and formats, making integration difficult.
- Inadequate **digital infrastructure, particularly in rural areas, affects** the deployment of AI solutions. The poor internet connectivity in remote regions hampers the use of AI-driven services.
- Shortage of skilled professionals with expertise in both AI and healthcare. There is a need for continuous **education and training programmes for healthcare providers** to effectively use AI tools.
- There is an absence of a comprehensive regulatory framework specific to AI in healthcare which puts patient data privacy at risk and biases in training data can lead to unfair diagnoses.
- **High initial costs of AI technologies and the need** for significant investment in infrastructure and training.
- Resistance from healthcare providers and patients to adopt new AI technologies.
- The vast and diverse population presents varied healthcare needs, making standardised AI solutions challenging. Socioeconomic disparities lead to unequal access to healthcare technologies, particularly in rural and underserved communities.

Way Forward:

- There is a need for a comprehensive and collaborative approach to improve data quality and

availability, strengthen infrastructure, address skill gaps, develop a regulatory framework, ensure financial sustainability, raise awareness and encourage adoption, **ensure interoperability, build trust and reliability, and address cultural and socioeconomic barriers.**

There should be collaborative efforts between government, private sector, and academia, along with investments in education, infrastructure, and innovation, which are crucial for successful AI integration.

ASSAM FLOODS

Context: The Assam flood situation is critical with over 24.50 lakh affected.

Floods:

- They occur when an overflow of water submerges land that is usually dry and is the most frequent type of natural disaster.
- These are caused by heavy rainfall, rapid snowmelt, or a storm surge from a tropical cyclone or tsunami in coastal areas.

Causes of Floods in Assam:

- There are more than 120 rivers in Assam, many of which originate from the hills and mountains of extreme rainfall hotspots in Arunachal Pradesh **and Meghalaya as well as in China and Bhutan.** The Brahmaputra River, flowing through Assam, accumulates significant sediment as it reaches the lower elevation of Assam, slowing down and depositing sediment and debris.
- In the Northeast the monsoon is intense. As per data from the Assam government, 85% of the annual rainfall in the **Brahmaputra basin takes place during the monsoon months. The region also gets a good amount of rainfall in April and May due to thunderstorm (Kalbaisakhi) activities which** account for flooding during heavy rain in June.
- Due to global warming and climate change, the glaciers and snow caps in the Tibetan Plateau are melting which is causing increased water flow in the Brahmaputra River, impacting downstream regions like Assam with more frequent flooding.
- Human activities like the construction of embankments first started in Assam in the 1960s to control floods. However, six decades later, most of these embankments have either outlived their utility or are in bad condition.
- The increasing population has put more pressure on the state's ecology. The population density of Brahmaputra valley has **increased from 9-29 people per sq**. km. in 1940-41 to 398 per sq. km in the plain areas of Assam as per the 2011 census, according to a report by the Brahmaputra Board. This has led to human settlements in river basin areas becoming more vulnerable to floods.
- Shifting cultivation also known as **Jhum cultivation involves slash-and-burn practices that strip the soil's protective layer, leading to accelerated erosion and reduced water absorption** capacity that contribute to sedimentation in river basins and floods.

Implications of Floods in Assam:

- **More than 130 wild animals, including at least 6 rare one-horned** rhinos in Kaziranga National Park, Assam have died due to recent Assam floods.
- The floods have caused extensive damage to roads and other infrastructure, hampering rescue and relief efforts.
- The floods in Assam have led to the **displacement of over 2 million people, with many seeking shelter in relief camps which has put additional strain on the resources and management**.

CHEMICAL INDUSTRIAL ACCIDENTS

GS III – Disaster Management

Context: The Maharashtra government has ordered an investigation into a recent chemical factory blaze that killed at least 11 people in an industrial complex in Thane and injured more than 60 others.

Chemical Industrial Accident:

- It occurs due to the **release or spill of a toxic chemical** that results in an abrupt and serious disruption of the functioning of a society.
- It may cause the loss of life or injury, property damage, social and economic disruption, or even environmental degradation.

Reasons for Chemical Industrial Accidents in India:

- **It occurs due to inadequate regulation as chemical industrial safety is fragmented** under 15 Acts and 19 Rules leading to overlapping jurisdictions and loopholes by weakening the enforcement of safety measures.
- **There is no** central database on industrial chemicals and **their risks which leads to a knowledge gap, hindering hazard assessment** and safety protocol development.
- There is a poor inspection rate due to a shortage of personnel. At the All-India level, the appointment rate was 67.58%.
- Boiler operation often falls to untrained, contractual workers, lacking proper safety and emergency response training which leads to confusion during accidents.
- **Lack of investment in worker safety equipment and infrastructure by industries.**

Consequences of Chemical Industrial Accidents:

- **It leads to enormous loss of life and injuries. For example,** the **Bhopal Gas Tragedy** killed more than 3,700 people.
- **The improper chemical waste disposal and leaks from industries may** cause severe environmental damage. For example, the **Chasnala Mining Disaster of 1975** caused by methane gas led to an increase in surface ozone that caused harmful chlorosis, or a yellowing of the leaves.
- **It creates economic losses** as it includes the cost of repairing, damage to facilities, compensating victims' families, and treating injured workers.
- It creates p**sychological trauma like a**nxiety, depression, and **post-traumatic stress disorder (PTSD) that can** have long-lasting effects on survivors, witnesses, and families of victims.
- **It can lead to a breach of public trust in regulatory bodies and leads** to public fear and resistance to new industrial projects.

Way Forward:

- **It can be prevented by d**etecting, characterizing, and improving early warning systems by improving a robust risk management framework.
- The **UNEP** encourages industries to **adopt environmentally sound technologies (ESTs) that** can minimize the use of hazardous materials, improve waste management, and reduce the risk of accidents.
- By incentivizing safety improvements, **financial aid like tax breaks or subsidies can be offered for**

upgrading infrastructure and adopting new technologies.

- There must be sufficient qualified and well-provided inspectors who shall enter the establishments freely and without prior notice at any time to secure due compliance with the labour laws.
- The government must ensure a strong labour market governance by implementing the provisions of the ILO Convention.

CLIMATE-RESILIENT AGRICULTURE (CRA)

GS III – Agriculture

Context: The Union government plans to unveil a framework to promote climate-resilient agriculture in 50,000 villages located in climatically-vulnerable districts.

Climate-Resilient Agriculture (CRA):

- It is an approach that includes sustainably using existing natural resources through crop and livestock production systems to achieve long-term higher productivity and farm incomes under climate variabilities.
- It reduces hunger and poverty in the face of climate change for forthcoming generations.
- It can alter the current situation and sustain agricultural production from the local to the global level, especially in a sustainable manner.

Significance of Climate-Resilient Agriculture in India:

- Around the world climate change is posing challenges. It is hurting Indian agriculture resulting in crop failure, decreased yields, and farmer distress. Thus, climate-resilient agriculture can **protect farmers' livelihoods.**
- India is suffering from frequent floods, droughts, and heatwaves which are impacting crop growth and production so through the practice of climate-resilient agriculture the **resilience of food systems** will increase thereby ensuring food security.
- The practice of climate-resilient agricultural practices has the potential to reduce greenhouse gas emissions while **increasing farmers' income and productivity.**
- The adoption of climate-resilient agriculture can **promote sustainable water use and management** in agriculture.
- The investment made in climate-resilient agriculture can **generate economic benefits** such as increased employment opportunities and improved rural development.

Way Forward:

- Reduction of greenhouse gas emissions from all agriculture and non-agricultural sources has to be prioritized. The introduction of neem-coated urea is one such policy intervention.
- Structured training is essential to build confidence in stakeholders and sensitise them to understand climate change events.
- Implementing CRA across the country is the need of the hour.

Collaboration between farmers, research institutions, funding agencies, governments, non-government organisations, and private sectors combines strengths to promote CRA.

Recent Government Plan to Promote Climate-Resilient Agriculture:

- It plans to promote climate-resilient crop varieties in 50,000 villages.

- The framework may include measures such as promoting less water-intensive crops, conserving water sources in the respective areas, and monitoring fertilizer inputs.

The initiative will run for five years and most of its funding will come through convergence with existing schemes.

CROP RESIDUE BURNING

GS III – Environmental Pollution

Context: The Punjab government urged the central government to restore the funding pattern for the Crop Residue Management Scheme from 60:40 (centre:state) to 100 percent centrally funded as the burning of crop residue is an important issue.

Crop Residue:

- It is the agricultural waste that is left in the fields after the harvesting and threshing process.
- In the Indian context, stubbles, stalks, stover, husk, bran, bagasse, and molasses are generally classified as crop residue (CR).

Factors contributing to Crop Residue Burning:

- **There is a short time interval between rice harvesting and wheat sowing which leads farmers** to use quick solutions like burning.
- **Due to the increased use of combine harvesters a large amount of stubble is generated which becomes difficult to remove manually and prompts farmers to burn the** leftover residue.
- **There is a lack of adequate alternatives for crop residue management** such as **composting, mulching, incorporation, and conversion to bioenergy which further exacerbates the problem**.
- **The rice straw is unsuitable for animal feed due to its low nutritional value which** pushes farmers toward disposal methods like burning.
- **Various economic and social factors like labour scarcity, resource constraints, and peer pressure come into play which in turn leads to choosing the easy option of residue burning.**
- There is a lack of awareness regarding the detrimental impacts of residue burning.

Challenges/Problems posed by Crop Residue Burning:

- **It leads to** environmental degradation by releasing harmful pollutants like carbon dioxide, methane, and other **greenhouse gases** into the atmosphere, contributing to global warming.
- It kills beneficial microorganisms, insects, and plants in agricultural lands leading to reduced biodiversity. This in turn can affect the natural balance of the ecosystem and make the crops more vulnerable to pests and diseases.
- **It destroys essential nutrients** such as **nitrogen**, **phosphorus,** and potassium in soil which leads to a decrease in soil fertility and soil degradation
- **It leads to air pollution as it** releases large amounts of **particulate matter (PM), carbon monoxide (CO), methane (CH4), nitrous oxide (N2O), ammonia (NH3),** and non-methane **volatile organic compounds (NMVOC)** into the atmosphere.
- The pollutants released by the burning of crop residue can cause respiratory problems, cardiovascular diseases, cancer, and premature death in humans.

Way Forward:

- According to the report by the Centre for Science and Environment, about **10 kg of agricultural**

residue can generate 1 kg of compressed **biogas. So, c**rop residue can be efficiently **used for producing clean renewable energy**.

- **Steps should be taken to promote circular agriculture that involves** efficient on-farm management of crop residue for restoration of soil organic nutrients and off-farm management by turning it into fodder, thatches, mulches, and organic manure.
- **Bio-CNG is** one of the clean and renewable energy sources for energy. The latest initiative of allocating ₹10,000 crores in **Budget 2023-24** to install 500 new bio-CNG plants under the **GOBARdhan Scheme** can be a potential step towards creating a viable value chain for crop residue as feedstock.

More Biogas Plants should be established in rural areas that contribute to **renewable energy** production and generate significant non-farm rural employment opportunities, addressing economic aspects.

CROSS-BORDER TERRORISM

GS III – Internal Security.

Context: In the face of continued Pakistan-sponsored terror as seen in J&K, strengthening of counter-terror machinery and a punitive approach is necessary.

Cross-Border Terrorism:

- It is a form in which the soil of one country is used to create terror in bordering countries.
- As a grey zone conflict, it is an undeclared war and is considered to be the highest form of strategy to bleed a nation for a prolonged period with small efforts.
- It is considered to be the highest form of strategy to bleed a nation for a prolonged period by small efforts.

Reasons behind Cross-Border Terrorism in India:

- It has been exacerbated by Pakistani **terrorist groups like Lashkar-e-Taiba and Jaish-e-Mohammad.** These terrorist organizations view the border as illegitimate and continue to infiltrate India to carry out attacks.
- Sometimes the local population supports and facilitates the cross-border movement of terrorists by providing them with conveyance and safe places to hide. This could happen due to a multitude of reasons such as identical ethnic affiliation, monetary requirements, fear of life, lack of education, dissatisfaction with the present governance system, etc.
- India's borders are porous **with most of its neighbours like Bangladesh, and Nepal which makes** it difficult to fully secure due to complex geographical features like mountains, deserts, and riverine areas which makes it easier for terrorists to infiltrate into India.
- Corrupt officials allow illegal cross-border movement in exchange for bribes. This provides avenues for criminal elements and terrorists to enter India.

Consequences of Cross-Border Terrorism in India:

- Due to **cross-border terrorism,** thousands of civilians have lost their lives along with thousands of defense, paramilitary, and police personnel who have sacrificed their lives in the line of duty.
- **It** has disrupted peace and security along India's borders, particularly with Pakistan. It has facilitated illegal infiltration and smuggling of **narcotics, arms, and weapons across India's borders, especially with Pakistan and Bangladesh**.
- The resources and efforts diverted to counter cross-border terrorism have come at an economic cost to India in terms of defense expenditure and lost economic opportunities.

- The constant threat of cross-border terrorism has created an atmosphere of fear and insecurity among the civilian population living along the borders.

Measures taken by India to Counter Cross Border terrorism in India:

- **The National Investigation Agency (NIA)** acts as a federal agency to combat terror which **was created** in 2008 after the Mumbai attacks.
- Combating Financing of Terrorism Cell (CFT- Cell) has been created to deal with the policy matters on combating terrorist financing and Fake Indian Currency.
  A Comprehensive Integrated Border Management System (CIBMS) has replaced manual surveillance/patrolling of international borders with electronic surveillance to enhance detection and interception capabilities.

DIGITAL PERSONAL LOANS

GS III – Banking

Context: The Financial Stability Report (FSR) released by the Reserve Bank of India (RBI) highlights concerns over the proliferation of digital personal loans and their impact on financial stability measures.

Digital Personal Loans:

- They are loans offered through mobile applications or online platforms.
- The lenders while taking these loans leverage technology for a streamlined application process, often with minimal paperwork and near-instantaneous approvals.

Issues/Concerns associated with Digital Personal Loans:

- There has been a rise in digital personal loans in the past 11 years as the digital lending market has grown significantly, reaching **an estimated USD 350 billion by 2023.**
- The personal loans disbursed through digital apps have the highest share of overdue accounts, raising alarms for financial stability.
- There has been a surge in retail loans surpassing both industrial and service loans in outstanding amounts.
- There have been increasing slippages and the addition of fresh bad loans, from retail loans (excluding home loans), **forming 40% of fresh NPAs in FY24.**

Way Forward:

- Fintech companies should be encouraged to develop recovery tools such as automated repayment plans and debt consolidation options to continuously monitor loan performance and identify potential delinquencies in the early stage.
- There is a **need to explore alternative credit scoring models that take into account income stability and financial behaviour patterns.**
- Efforts should be made to streamline digital NPA recovery processes by automating tasks like communication and data analysis.
- The Debt Recovery Tribunals (DRT) can be used to facilitate the recovery of dues along with legal **frameworks like Lok Adalat and the SARFAESI Act of 2002 for efficient recovery.**

DOMESTIC SILK ROUTE

GS III – Agriculture

Context: India aims to become the world's top silk producer by 2030, focusing on byproducts of the sericulture industry.

Status of Silk Production in India:

- India is the second-largest producer of silk in the world.
- The annual **production of silk, estimated at 36,500 tonnes in 2022-23**, is projected to surge to more than 50,000 tonnes by 2030 and surpass that of China, the world's largest silk producer.
- **The country's sericulture industry employs around 9.76 million people in** rural and semi-urban areas.
- India has the unique distinction of being the only country producing all five known commercial silks, namely, mulberry, tropical tasar, oak tasar, eri, and muga.

Significance of the Sericulture Sector in India:

- It provides employment opportunities and increases income to farmers which leads to economic growth.
- It helps to boost exports by providing a lucrative market internationally. There is a huge demand for Indian silk in European markets which increases export opportunities.
- It provides sustainable livelihoods in agricultural areas thus leading to rural development.
- India produces various types of silk like **Mulberry, Muga, Eri, and Tussar which creates diverse products catering to various market needs.**
- It is used in creation of value-added silk products, such as silk-based cosmetics and health supplements which can enhance profitability.

Issues/Challenges faced by Sericulture in India:

- The sericulture sector suffers from low quality and low productivity due to traditional methods and a lack of technological advancement.
- Its export potential is limited due to the immense domestic demand for silk.
- There is a lack of **research and development due to insufficient investment which hampers innovations in disease-resistant silkworm breeds.**
- It can have adverse environmental impacts due to the use of chemical fertilizers and pesticides in cultivation.
- Its cultivators suffer from financial instability as the sector is vulnerable to market fluctuations.

Sericulture:

It is a cottage-based industry that broadly encompasses four activities- cultivation, silkworm rearing, silk reeling, and weaving, printing, and dying.

ECONOMIC SURVEY 2023-24

GS III – Government Budgeting

Context: The Economic Survey for 2023-24 was presented by the Minister for Finance in the parliament. It provided a comprehensive overview of the Indian economy's performance, prospects, challenges, and policy recommendations in the previous year.

Key Highlights of the Economic Survey 2023-24:

- India's real GDP grew by 8.2% in FY24, surpassing the 8% mark in three out of four quarters of FY24.
- Direct taxes contributed 55% of the total tax revenue, with indirect taxes making up the remaining 45%.
- At the end of March 2024, India's forex reserves could cover more than 10 months of projected imports and 98% of external debt.
- Retail inflation was maintained at 5.4%, the lowest since the pandemic, due to effective policy interventions and RBI measures.
- Food inflation increased from 6.6% in FY23 to 7.5% in FY24.
- The RBI forecasts inflation to decline to 4.5% in FY25 and 4.1% in FY26.
- The **Current Account Deficit (CAD) improved to 0.7% of GDP in FY24 from 2.0% in FY23.**
- The government progressively increased capital expenditure and provided free food grains to 81.4 crore people.
- The Reserve Bank of India maintained a steady policy repo rate at 6.5% throughout FY24. The core inflation **declined by around 4% from April 2022 to June 2024.**
- Credit disbursal by Scheduled Commercial Banks (SCBs) reached Rs 164.3 lakh crore, growing by 20.2% by March 2024.
- Gross and Net non-performing assets are at multi-year lows, and bank asset quality has improved. As per the RBI's Financial Stability Report of June 2024, the asset quality of SCBs has improved, with the Gross Non-Performing Assets (GNPA) ratio declining to 2.8% in March 2024, a 12-year low.
- Primary capital markets facilitated capital formation of Rs 10.9 lakh crore, approximately 29% of the gross fixed capital formation of private and public corporates in FY23.
- India's services exports grew **by 4.9% to USD 341.1 billion in FY24, with significant contributions from IT/software and other business services.**
- India remains the top global recipient, with remittances totaling USD 120 billion in 2023.
- India's external debt to GDP ratio stood at 18.7% as of March 2024.
- In the World Bank Logistics Index, India's rank improved from 44th in 2014 to 38th in 2023.
- India's share in world tourism receipts increased from 1.38% in 2021 to 1.58% in 2022.
- As of May 2024, non-fossil sources accounted for 45.4% of installed electricity generation capacity.
- **India's energy needs are projected to grow 2 to 2.5 times by 2047.**
- The clean energy sector attracted investments of Rs 8.5 lakh crore between 2014 and 2023.
- Welfare expenditure grew at a CAGR of 12.8% between FY18 and FY24.
- Over 34.7 crore Ayushman Bharat cards have been issued.
- 2.63 crore houses constructed under PM-AWAS-Gramin in the past 9 years.
- 15.14 lakh km of roads constructed under the Gram Sadak Yojana since 2014-15.
- Unemployment rate declined to 3.2% in 2022-23.
- **Youth unemployment fell from 17.8% in 2017-18 to 10% in 2022-23.**
- The female labour force participation has been rising for six consecutive years which is at 37.0% currently.
- The workforce in the gig economy is expected to reach 2.35 crore by 2029-30.
- Agriculture grew at 4.18% annually over the past five years, the industry grew at 9.5% in FY24, and the services sector contributed 55% to the economy in FY24.
- **7.5 crore Kisan Credit Cards issued with a Rs 9.4 lakh crore limit.**
- India's pharmaceutical market is the world's third-largest by volume, valued at USD 50 billion.
- India's electronics sector accounts for an estimated 3.7% of the global market share.

- India's share in global digitally delivered services exports increased to 6% in 2023.
- **Start-ups increased from around 2,000 in 2014 to approximately 31,000 in 2023.**
- India has 55 active space assets, including 18 communication, 9 navigation, 5 scientific, 3 meteorological, and 20 earth observation satellites.
- The DigiLocker platform has over 26.28 crore registered users and over 674 crore issued documents.
- The overall teledensity (number of telephones per 100 population) in India increased from 75.2% in March 2014 to 85.7% in March 2024. The internet density also increased to 68.2% in March 2024. India's ethos emphasises a harmonious relationship with nature, in contrast to the culture of overconsumption in other parts of the developed world. Shifting towards traditional multi-generational households could pave the way towards sustainable housing. Mission LiFE focuses on human-nature harmony, promoting mindful consumption rather than the overconsumption that lies at the root of the
global climate change problem.

FINANCIAL STABILITY REPORT

GS III – Banking

Context: The Reserve Bank of India (RBI) recently released its Financial Stability Report (FSR) which provides a comprehensive assessment of the resilience and stability of India's financial system.

Financial Stability Report:

- It is released twice a year by the Reserve Bank of India.
- It reflects the collective assessment of the Sub-Committee of the Financial Stability and Development Council on risks to financial stability and the resilience of the financial system.
- **It provides information regarding the state of financial stability in the country** that is prepared after taking into account the contributions from all the financial regulators.

Key Highlights of the Financial Stability Report:

- It states that the global economy and financial system are exhibiting resilience amidst heightened risks and uncertainties. The International Monetary Fund (IMF) **projects global growth to remain steady at 3.2% in 2024, while the World Bank forecasts a lower rate of 2.6%.**
- The Scheduled Commercial Banks (SCBs) have shown remarkable improvement in profitability and asset quality. The asset quality of SCBs recorded sustained improvement and their GNPA ratio moderated to a 12-year low of 2.8% in March 2024. The decline has been observed across public, private, and foreign banks. **The Return on assets (RoA) and return on equity (RoE) have increased to 1.3% and 13.8%, respectively.**
- SCBs maintain strong capital buffers, with capital to risk-weighted assets ratio (CRAR) remaining stable at 16.8%, with PSBs seeing an improvement and private/foreign banks witnessing a slight decline.
- Strong macroeconomic fundamentals and a sound and stable financial system have supported the sustained expansion of the Indian economy. Moderating inflation, a strong external position, and ongoing fiscal consolidation are anchoring business and consumer confidence.
- Deposit growth picked up in **the second half of FY24, reaching 13.5% in the quarter ending March 2024. Private sector banks saw the highest deposit growth at 20.1%,** followed by foreign banks at 15.1% and PSU banks at 9.6%.
- **Non-Banking Financial Companies (NBFCs)** maintained robust credit growth in 2023-24. Personal loan growth decelerated whereas growth in loans to industry and services accelerated. Credit

growth in respect of the largest category of NBFC by activity, investment, and credit companies (NBFC-ICCs), has been accelerating in the post-pandemic period.

- The asset quality of the non-banking financial companies (NBFCs) remains healthy. **It has a CRAR of 26.6 percent, a GNPA ratio of 4.0 percent, and a return on assets (RoA) of 3.3 percent.**
- Banks have shown substantial resilience to stress, with SCBs well-capitalized to handle macroeconomic shocks in both medium and extreme stress scenarios. A stress test is an analytical tool used by RBI to assess how a bank or financial system can withstand adverse economic scenarios.

Capital to Risk-weighted Assets Ratio (CRAR):

- It is a measure of a bank's available capital as a percentage of its risk-weighted credit exposures. It is used to ensure that banks have enough capital to handle potential losses and avoid insolvency.

FOREST CONSERVATION EFFORTS

GS III – Environment Conservation

Context: The World Bank estimates that the world has **lost about 10 million square kilometres** of forests since the start of the 20th century. The emphasis on forest restoration approaches to bring such degraded ecosystems back to their earlier state was the main purpose of declaring **the decade of 2021-2030** as a Decade of Ecosystem Restoration by the United Nations.

Forest Conservation:

- It is the protection and preservation of forests. It includes:
- Planting and maintaining forested areas for the benefit and sustainability of future generations
- Preserving the forest ecosystem, including plant and animal species

Importance of Forests in India:

- It helps in biodiversity conservation as the Ministry of Environment and Forests Govt. of India (2000) records **47,000 species of plants and 81000 species of animals in India.**
- It acts as a carbon sink and helps in climate change mitigation as India's forests and trees absorb 15% of its total CO2 emissions.
- It provides livelihood support to more than 250 million people. **Initiatives like Van Dhan Yojana aims to** enhance forest-based livelihoods sustainably.
- It provides ecosystem services that are valued at trillions of rupees annually, including air purification, soil conservation, and pollination.
- It has deep cultural and spiritual importance among many communities in India by supporting traditional knowledge systems and practices.

Issues/Challenges faced by forests in India:

- India is losing forest cover due to development projects, mining, and agriculture expansion. The Forest Survey of India Report of 2021 reported that India's moderately dense forest area decreased by 1,582 sq. km.
- Due to the shrinking of forests, there is an increase in cases of human-wildlife conflict. For example, more than 500 people, and 100 elephants die every year due to human-animal conflict in India.
- It is facing challenges due to climate change which includes altered precipitation patterns, increased forest fires, and pest outbreaks. **For example, the 2024 forest fires in Uttarakhand.**
- It is threatened by the spread of invasive species which is leading to loss of native biodiversity in

many Indian forests. For example, the rapid spread of Lantana camara in the Western Ghats and Senna spectabilis in Mudumalai Tiger Reserve is altering ecosystem dynamics.

Issues with India's Tree Planting Schemes:

- They have been criticised for limited community participation, a lack of adequate post-planting measures, and for promoting monoculture, thereby proving less effective for carbon sequestration and biodiversity development.
- They neglect ecology and locality with little involvement of people in various tree planting programmes.
- The tree planting drives in certain locations such as grasslands **and animal habitat destroys plant and animal habitats and can damage ecosystems, increase wildfire intensity, and exacerbate global warming.**
  The majority of tree planting drives lack adequate provisions for post-planting measures and monitoring of tree growth.

Note:

- The World Bank estimates that the world has lost about 10 million square kilometres of forests since the start of the 20th century.
- The decade of 2021-2030 is declared as a Decade of Ecosystem Restoration by the United Nations. This targeted the restoration of 350 million hectares of degraded land to generate $9 trillion in ecosystem services and sequester an additional 13 gigatons-26 gigatons of greenhouse gases from the atmosphere.
- The Bonn Challenge aims to **restore 150 million hectares of degraded and deforested landscapes by 2020** and 350 million hectares by 2030.
- In India, nearly 10 million hectares of its forests are under encroachment, nearly 27.5 crore people are dependent on forests for subsistence and nearly 5.7 million hectares of forest land have been lost for non-forestry purposes since Independence.

GM MUSTARD

GS III – Biotechnology

Context: The Supreme Court pronounced a split verdict on the validity of the Centre's 2022 decision granting conditional approval for the environmental release of genetically modified (GM) mustard crops. Now, the case will be referred to a Supreme Court's three-judge Bench.

GM Mustard (DMH-11):

- **It** is created by crossing the Indian variety Varuna with the Eastern European variety '**EarlyHeera-2'.**
- It has been claimed that the yield of DMH-11 is 28 percent higher than Varuna.
- It was created by a team of scientists from Delhi University's **Centre for Genetic Manipulation of Crop Plants (CGMCP)** with assistance from the **National Dairy Development Board (NDDB)** and the **Department of Biotechnology.**
- It is classified as an herbicide-tolerant (HT) mustard variety and it is engineered to withstand specific herbicides, which can aid in weed control and enhance crop yield.
- **It** has been developed using the **genetic male sterility (GMS)** technique, especially the **'barstar-barnase' system,** to make herbicide resistant.

Significance of GM Mustard:

- **It helps to increase production as it** can **increase yield by 25 to 30 percent** despite using less water, chemical fertilizers, and pesticides.
- **It expands pathways for** further **genetic engineering research** toward developing mustard hybrids with other selective traits such as better input efficiency, better product quality, and higher pest resistance.
- **It helps in pest management as it** has been modified to be resistant to the broad-spectrum plant-killer or **herbicide glufosinate.**
- It helps in retaining soil moisture and nutrients along with effective weed control as it is a herbicide-tolerant**crop.**

Issues/Concerns regarding GM Mustard:

- **It can affect honeybees and honey production as it** has **mutated flowering and pollen production. Protease inhibitors** have proved unfavourable to the longevity and behaviour of bees.
- It may create h**ealth concerns as a g**enetic modification with the genes bar, bacterial protein Barnese, and barstar used to prepare GM mustard seed has never been a part of the human diet.
- **It increases the use of herbicide as GM Mustard** is herbicide tolerant, allowing farmers to spray over the crops with weed killer which can lead to the **emergence of superweeds**.

It can cause unemployment as it eliminates the need for manual labour to remove weeds as GM Mustard contains a third-time gene that makes it **weedicide glufosinate ammonium tolerant**

GREEN REVOLUTION IN MAIZE

GS III – Agriculture

Context: Maize production in India has more than tripled over the last two decades, making it a private sector-driven green revolution success story.

Maize Production in India:

- Between **1999-2000 and 2023-24, its annual output has more** than tripled, from 11.5 to over 35 million tonnes (mt), with average per-hectare yields also rising from 1.8 to 3.3 tonnes.
- India is the **fifth largest maize producer** accounting for 2.59% of global production in 2020.
- Karnataka, Madhya Pradesh, Bihar, Tamil Nadu, Telangana, Maharashtra, and Andhra Pradesh are the primary maize-growing states.

Uses of Maize:

- Approximately 60% of India's maize is used as feed for poultry and livestock. Poultry feed contains a significant amount of maize, **with broiler feed consisting of 55-65% maize by weight, egg-layer feed at 50-60%, and cattle feed at 15-20%.**
- Only a fifth of India's maize production is used for direct human consumption.
- Around 14-15% of maize is used industrially, particularly for its high starch content that has applications in textile, paper, pharmaceutical, food, and beverage industries.
- It is used as a feedstock for ethanol production, particularly as a **substitute for rice in ethanol blending** due to food security concerns. It is particularly used during the off-season for sugarcane.

Green Revolution in Maize:

- The **cross-pollinating** nature of maize makes hybrid breeding commercially viable. Hence more than **80% of maize cultivation** is private-sector **hybrids with high yields limited to the first generation.**

- **Th**e Indian Agricultural Research Institute (IARI) has bred India's first **waxy maize hybrid** (AQWH-4) with high **amylopectin starch content**, making it better suited for ethanol production as the normal maize starch has 30% amylose and 70% amylopectin, while IARI's waxy maize hybrid has 93.9% amylopectin.

A Maize **Doubled Haploid (DH)** facility has been established by the International Maize and Wheat Improvement Center (CIMMYT) to produce high-yielding, genetically pure inbred lines. It enables the production of completely uniform lines after **just two cropping cycles.**

Note:

- Amylose starch makes the grain hard, while amylopectin makes it soft, affecting starch recovery and fermentation rates.
- Softness aids in better grain grinding for flour production. Granules with higher amylopectin are more easily broken down into glucose units. The glucose is then fermented into ethanol using yeast.

INDIAAI MISSION

GS III – Indigenization of technology and developing new technology

Context:
In the Union Budget 2024, the Ministry of Electronics and IT has been allocated Rs 551.75 crore for the IndiaAI Mission for 2024-25.

IndiaAI Mission:

- It aims to create a comprehensive ecosystem, drive AI innovation, and encourage AI use across sectors.
- It prioritizes skill development and socio-economic change, in line with the vision of 'Making AI in India' and 'Making AI Work for India'.
- **The** Ministry of Electronics and Information Technology is the nodal ministry and is implemented by the 'IndiaAI' Independent Business Division (IBD) under Digital India Corporation (DIC).

Components of the IndiaAI Mission:

- **IndiaAI Compute Capacity aims** to develop an AI compute infrastructure comprising 10,000 or more Graphics Processing Units (GPUs) via partnerships between the public and private sectors. Additionally, an AI marketplace will be developed to provide AI as a service and pre-trained models to AI innovators.
  2. IndiaAI Innovation Centre will create and use its own Large Multimodal Models (LMMs) and domain-specific foundational models in critical sectors.
- **IndiaAI Datasets Platform** will simplify access to high-quality, non-personal datasets for AI innovation. It aims to offer Indian startups and researchers a single platform for easy access to non-personal datasets.
- **IndiaAI Application Development Initiative** will promote AI applications in critical sectors by addressing problem statements obtained from Central Ministries, State Departments, and other sources.
- **IndiaAI FutureSkills** aims to reduce barriers to entry into AI programs and will expand AI courses at undergraduate, master's, and Ph.D. levels. Additionally, Data and AI Labs will be established in Tier 2 and Tier 3 cities across India to offer basic-level courses.
- **IndiaAI Startup Financing** aims to help and speed up deep-tech AI startups, offering them easier access to funding for futuristic AI projects.

- **Safe and Trusted AI** will support the execution of responsible AI projects, which involve creating indigenous tools and frameworks.

Issues/Challenges associated with IndiaAI Mission:

- There are concerns regarding the procurement and deployment of GPUs to meet the objective of the mission to build a high-end AI compute capacity of 10,000 GPUs is ambitious.
- It also faces challenges due to the high costs of GPUs, like Nvidia's A100 chip costing up to USD 10,000 which makes it difficult for smaller businesses.
- It faces difficulty in data access and quality as the training of AI models on diverse datasets, particularly for Indic languages, is crucial. However, the current datasets are inadequate for developing effective indigenous AI models.
- In India, **there is a shortage of skilled AI professionals due to the high costs of training and limited AI expertise.**
- The implementation cost of AI models in the manufacturing sector is very high which may hinder its widespread adoption.
- The lack of infrastructure like advanced cloud computing which is necessary for AI applications hampers effective AI deployment.
- It causes ethical concerns as AI algorithms increasingly influence decision-making. As it handles sensitive and personal data it faces risks related to data security and privacy.

It causes environmental pollution because the AI applications due to the increased data processing more heat is generated leading to the need for powerful air-conditioning and cooling systems in data centres.

MILITANCY IN JAMMU AND KASHMIR

GS III – Role of external state and non-state actors in creating challenges to Internal Security

Context: From June 9, five terror strikes have occurred in the Jammu division of the Union Territory, in which eight security personnel and 10 civilians have been killed.

Reasons for the Rise in Militancy in Jammu and Kashmir:

- The troop reduction in the region with the movement of forces to the Line of Actual Control in 2021 led to an increased area of responsibility for each battalion, contributing to an increased revisit time by every patrol.
- As Jammu is a crucial gateway to the rest of India and is of high strategic importance, it is an attractive target for militants aiming to disrupt normalcy in the country.
- Jammu and Kashmir provides easy access **to militants from Pakistan-occupied Kashmir** to infiltrate due to its proximity to the **Line of Control (LoC).**
- The lack of economic opportunity and development in remote and border areas of Jammu provides a fertile ground for the recruitment of local youths by militant groups.
- There is a gap in human intelligence as the locals who provided information decades ago are now in their 60s or 70s, and the security forces have not nurtured relations with younger generations.

Challenges in dealing with Rise in Militancy in Jammu and Kashmir:

- Militants often exploit tough terrains to infiltrate through **the 192-km international border (IB) in Jammu and the 740-km Line of Control (LoC) in Kashmir.**
- There exists a persistent challenge in gathering intelligence by locals due to trust deficit because of historical grievances and demographic diversity.
- Militants use sophisticated communication technologies and gain local sympathisers which makes it

difficult to get accurate and timely intelligence.
- There have been influences of external factors due to allegations of cross-border support from Pakistan, including weapons supply via drones.

Way Forward:

- There should be increased border surveillance and fortification **of vulnerable points along the Line of Control (LoC) and International Border (IB)** as they are used as the main entrance for infiltration.
- There should be technological advancements through advanced surveillance technologies, drones, and night-vision equipment that enhance operational effectiveness and real-time monitoring of militant activities.
- There is a need to strengthen legal frameworks against terrorism financing and ensuring robust mechanisms for prosecuting suspects are essential for effective counter-terrorism operations.
- There is an essential need to build trust in local communities through initiatives aimed at socio-economic development, youth empowerment, and fostering inter-community dialogue.

There is a need for enhanced diplomatic efforts to address cross-border implications of militancy, coupled with international cooperation on counterterrorism, which can help disrupt external support networks.

NATIONAL QUANTUM MISSION

GS III – Science and Technology

Context: India launched the National Quantum Mission last year and became one of the few countries in the world to have a dedicated programme to harness the power of quantum technologies.

National Quantum Mission:

- **It targets to develop intermediate-scale quantum computers with 50-100 physical qubits in 5 years and 50-1000 physical qubits in 8 years.**
- It aims to facilitate satellite-based secure quantum communications between ground stations over a range of 2000 km within India.
- It **aims to set up four thematic hubs (T-Hubs)** in top academic and national research and development institutes in the domains of quantum technology that include quantum computation, quantum communication, quantum sensing and metrology, and quantum materials and devices.
- It supports the design and synthesis of quantum materials such as superconductors, novel semiconductor structures, and topological materials for the fabrication of quantum devices.

Significance of the National Quantum Mission:

- **It helps to boost the economic growth of India by adopting new-age** technologies like quantum computing, artificial intelligence, Internet-of-Things (IoT), and machine learning.
- **It creates job opportunities** in the fields of research and the manufacturing of quantum systems. According to a report, the adoption of quantum **technologies in India can contribute $280-310 billion to** the economy by 2030.
- **It leads to** a boost in the industrial ecosystem in India that includes aerospace engineering, weather prediction, simulations, cyber security, advanced manufacturing, health, agriculture, and education.
- **It** helps to secure the financial transactions infrastructure and communication through Quantum Key Distribution.
- **It** supports and improves other national socio-economic development programs like Digital India and Make in India.

- **It** will augment in improving solutions to problems such as clean energy and affordable healthcare.

Issues/Challenges associated with the National Quantum Mission:

- The amount earmarked for the mission is less when compared to other countries. The **National Quantum Mission has a budget of** Rs 6,000 crore (around $0.75 billion) whereas China is estimated to be investing $15 billion in this effort, while the US is pumping in about $3.75 billion.
- The research papers on quantum-related science published by Indian researchers are fewer compared to other countries. Indian researchers have published 1,711 papers between 2000 and 2018 while Chinese and American researchers have published 12,110 and 13,489 papers respectively during the same period.
- India does not have enough **infrastructure that can support the entire chain of operations from working out the proof-of-principle to developing working prototypes.**
- The number of patents registered by Indians is less. Between 2015 and 2020, Chinese and American researchers acquired 23,335 and 8,935 quantum-related patents respectively. However, Indian researchers had only 339 such patents in the same period.

There is a lack of strong collaborations between academic institutions, research organizations, and industries which has slowed down the progress of quantum computing development in India.

PRIMARY AGRICULTURAL CREDIT SOCIETIES (PACS)

GS III – Agriculture

Context: Minister of Home Affairs and Cooperation Amit Shah urged stakeholders in cooperative societies — district registrars, heads of district cooperative banks, and heads of milk unions — to support the establishment of primary agricultural credit societies (PACS) in all villages and blocks of the country.

Primary Agricultural Credit Societies (PACS):

- PACS are credit societies that are registered under the Cooperative Societies Act of the State concerned.
- They are distinguished by the nature that they are grassroots-level institutions in villages with individual **farmers, artisans, and other weaker sections as member shareholders.**
- They form the lowest tier of the federated short-term **cooperative credit structure with District Cooperative Banks (DCCBs)** and/or State Cooperative Banks (StCBs) in their upper tiers.
- The first PACS was formed in **1904**. Currently, there are more than 1,00,000 PACS in the country with a huge member base of more than 13 crore farmers. However, **only 63,000 of them are functional**.
- Since these are cooperative bodies, individual farmers are members of the PACS, and office-bearers are elected from within them. A village can have multiple PACS.

Significance of PACS:

- PACS helps to increase the productivity and increase income of small farmers as they help them to purchase seeds, fertilizers, and other inputs for their farms.
- PACS increases access of rural farmers to formal financial services which helps to improve financial inclusion.
- PACS is very convenient in **providing services to farmers as it eliminates the need to travel to banks in urban areas to access financial services.**
- PACS conducts training programs on modern agricultural practices and organic farming for small and marginal farmers.

- PACS encourages farmers to save money, which can be **used to improve their livelihoods and invest in their farms.**
- PACS requires farmers to repay their loans on time which in turn enhances credit discipline and **reduces the risk of default.**

Challenges/Issues with the PACS:

- **PACS has not been** geographically active in some parts of the country, especially i**n the northeast and it has covered** only 50% of all the rural households.
- **PACS suffer from a lack of resources in relation to the short- and medium-term credit** needs of the rural economy as funds come from higher financing agencies.
- PACS as a credit institution has been politicised with the election of dominant local politicians as the chairperson of PACS which leads to a partisan basis of awarding loans.

PACS is facing the problem of large over-dues which reduces the circulation of loanable funds, the **borrowing as well as lending power of societies.**

SOCIAL INFRASTRUCTURE IN INDIA

GS III –Infrastructure

Context: The Ministry of Labour and Employment has joined the PM Gati Shakti portal to identify and bridge gaps in social security coverage.

Social Infrastructure:

- It is the set of organizational arrangements and investments in society's systems, relationships, and structures that enable us to generate **a just, equitable, more resilient, and sustainable world**. It comprises **social, economic, environmental, and cultural assets**.
- It is a combination of tangible and intangible assets that facilitates the development of society.
- It includes the **physical Infrastructure, human resources**, and **intellectual capital** needed to render social services.

Significance of Social Infrastructure in India:

- It promotes inclusive growth by reducing incidents of poverty and cases of inequality.
- It enhances human resource productivity by improving education and skill levels, which in turn maximizes the chances of utilizing India's demographic dividend.
- **It encourages upward social mobility and enhances social well-being by improving a person's socio-economic situation.**
- It helps in achieving the Sustainable Development Goals by adopting eco-friendly practices such as reducing carbon footprints and promoting resilience to climate change.
- It reduces the sense of alienation among citizens by creating liveable and inclusive settlements where social and economic benefits.

Issues/Challenges faced in developing Social Infrastructure in India:

- The key social sectors such as education and health face inadequate public funding which in turn leads to low learning outcomes.
- Social infrastructure faces low private sector participation due to low returns on investments.
- There is a lack of human resources such as an absence of trained teachers, a lack of highly skilled

health professionals, planning, etc.
- There is an inequality in access due to affordability issues in marginalized communities, especially in lower-income groups.

There is a lack of awareness among citizens about the importance of social infrastructure.

PM Gati Shakti:

- It is a national master plan for multi-modal connectivity that aims to provide a competitive advantage for manufacturing in India.

It brings together 16 ministries and departments of the Government of India for integrated planning and coordinated implementation of infrastructure connectivity projects.

STAMPEDE/CROWD DISASTER

GS III –Disaster Management

Context: At least 121 people, almost all women, were killed on July 2 in a stampede during a religious gathering in Uttar Pradesh's Hathras district.

Stampede/Crowd Disaster:

- It can be described as the disruption of the orderly movement of a crowd leading to injuries and fatalities often in response to a perceived danger, loss of physical space, or a will to attain something seen as gratifying.

Why do stampedes kill?

- Death in a stampede occurs due to traumatic asphyxia, myocardial infarction, heart attack, direct crushing injury to internal organs, head injuries, and neck compression.

Causes for Stampede/Crowd Disaster:

- Stampedes almost always take place during mass gatherings — either spontaneous gatherings, like in a metro station during the rush hour, or planned ones, like the Hathras *satsang*.
- Some stampedes may also be triggered due to a craze based on a positive wish-fulfillment belief which can be rational or irrational.
- Stampedes may occur due to structural failures like lack of light, crowd flows not being divided for different crowds, the collapse of barriers, and buildings, blocked exits, poor design of hardware, and fire hazards.
- Stampedes may also occur due to crowd density and the dynamics of the crowd's likely movement.

Way Forward:

- Planners must make a proper number of exists at easily accessible places along with good event organisers' vigilance, monitoring, and real-time preventive interventions.
- Planning for mass **gatherings should be based on a multi-disciplinary approach that relies on the** identification of potential hazards to the design and execution of appropriate mitigation measures.
- There should be live surveillance of the crowd to enable the organisers to monitor the pressure buildup, increase in crowd density, and bottlenecks, and to identify the source of crowd disturbance.

There should be communication between organisers who are often from different bodies, and

organisations as well as between organisers and the crowd.

Data:

- According to data collated by **F T Illyas and others, 79% of all stampedes in India from 1954**-2012 took place in religious mass gatherings.

Notable Deadly Stampedes in India:

- The most fatal Kumbh Mela stampede in **Allahabad, India (1954).** The first post-independence Kumbh Mela was plagued by a lack of crowd control mechanisms, poor planning, and excessive presence of VIPs.

The annual pilgrimage at the Mandhardevi temple in Maharashtra's Satara district turned tragic when more than 340 people were trampled to death, and hundreds injured in **2005**. The stampede occurred when some people fell down the steps made slippery by devotees breaking coconuts.

TELECOM SECTOR IN INDIA

GS III –Telecom Sector

Context: The telecom industry has submitted a few policy recommendations to the Ministry of Communications, which are crucial for achieving the Government's vision of digital empowerment and inclusivity.

Significance of the Telecom Sector in India:

- **It provides tremendous opportunities as this sector** will need **about 22 million skilled workers in 5G-centric technologies** such as the **Internet of Things (IoT), Artificial Intelligence (AI)**, robotics, and cloud computing by 2025.
- The telecommunication sector is instrumental in the **development and poverty reduction** through the empowerment of the masses, unlocking economic growth, employment generation, bringing in FDI, and digital transformation of essential services like education, healthcare, financial services, etc.
- India is one of the **biggest consumers of data worldwide.** As per TRAI, the average wireless data usage per wireless data subscriber was **11 GB per month in FY20.**
- **The telecom sector has policy support through the production-linked incentive (PLI) scheme as t**he union cabinet approved Rs. 12,195**.**
- It gets immense support from the government as in the union budget **2022-23** the **Department of Telecommunications** was allocated **Rs. 84,587 crores.**

Challenges/Issues related to the Telecom Sector in India:

- **The sector faces high debt** as levels rose from 3.8 trillion rupees in 2014 to 7.7 trillion rupees in 2019 as per the CRISIL report which makes it difficult to invest in new technologies.
- Voice calls and SMS services are provided by **OTT platforms** like WhatsApp and Telegram **using the network infrastructure of telecom providers like Airtel and Jio.** Telecom Service Providers (TSPs) **contend that these features adversely affect their sources of revenue** (voice calls, SMS).
- **It faces the issue of predatory pricing as v**ery few competitors are left in the market due to **intense price competition post-JIO launch.**
- The telecom industry **causes environmental pollution in multiple ways,** including by generating e-waste.** In India, more than 95% of e-waste is illegally disposed of.

- **It faces** challenges due to the **rising costs of acquiring spectrum** from around 66000 crore Rupees in 2010 to around 3.9 lakh crore Rupees in 2016 as per the Department of Telecom's report.

The telecom sector faces regulatory uncertainty as multiple government agencies oversee multiple aspects and on account of the lack of inter-ministerial and inter-departmental cooperation.

Recent policy recommendations made by the telecom industry to the Ministry of Communications:

- The government should consider reducing the levy and tax burden experienced by the operators. These include the longstanding demands for abolishing the USOF levy, as well as reducing the license fee from 3% to 1%.
- There is an ambiguity in the current definition of gross revenue (GR), which leads to imperfect calculation of taxes pertaining to non-telecom activities.
- It strongly urged the government to exempt service tax on additional AGR liabilities imposed by the Supreme Court's judgment.
- It recommended reducing customs duty to zero and gradually increasing the manufacturing ecosystem, especially for 4G and 5G products, is desirable.

It urged for exemption of GST under the Reverse Charge Mechanism (RCM) on payments made to DoT for license fees, spectrum usage charges, and spectrum acquired in auctions

URBAN FLOODS

GS III –Disaster Management

Context: Two boys drowned in the waterlogged section at an underpass in outer north Delhi's SP Badali area a day after the city was lashed with heavy rains.

Urban Flooding:

- It refers to the **inundation of land or property in a built environment,** particularly in more densely populated areas (like cities), caused by rainfall overwhelming the capacity of drainage systems.

Causes of Urban Flooding in India:

- The destruction of forests has reduced the ability of the land to absorb water which in turn has resulted in quick water run-off and accumulation in urban areas, causing floods.
- **Due to climate change, there are variations in** weather patterns and the intensity of rainfall has increased which leads to frequent urban floods by overwhelming the existing drainage infrastructure.
- Improper disposal of solid waste and other non-biodegradable materials clogs drains and obstructs the flow of water, leading to flooding.
- **The lack of** awareness among the public about flood preparedness hampers the implementation of preventive measures and timely response to flood situations.
- Unplanned and **sudden release of water from dams** and lakes leads to floods in an urban area, without giving the public enough time to respond.
- Many cities in India have outdated and insufficient drainage systems that are unable to handle heavy rainfall leading to waterlogging and subsequent flooding.

Consequences/Impacts of Urban Flooding in India:

- Many times, urban flooding results in the loss of human lives and injuries as people can get trapped in submerged areas or swept away by the strong currents, leading to fatalities and injuries.

- Trees and plants are **washed away during extreme flood** events and **riverbank erosion** is caused by high-speed flood water.
- Floodwaters can cause extensive damage to buildings, roads, bridges, and other infrastructure resulting in significant financial losses for individuals, communities, and the government.
- Stagnation of stormwater in the localities, and **Contamination of consumable water** leads to various health problems resulting in plagues/epidemics.
- Urban flooding can force people to evacuate their homes and seek temporary shelter.
- **Urban flooding** leads to soil erosion, water pollution, and damage to ecosystems.

Way Forward:

- Incorporate **robust flood mitigation plans** by identifying and mapping **flood-prone areas. It helps to r**estrict construction and development in these vulnerable zones to reduce the risk of flooding.
- Installing a good drainage system and maintaining the existing channels to create alternative paths for water to flow throughout the city.
- Take steps to implement **the "Sponge" Cities Concept.** It is an urban planning model designed to use **nature-based solutions** to **distribute water better and improve drainage and storage.**
- Wetland management needs to be prioritized, and local communities need to be included.
- Implementing a proper system for managing solid waste to prevent it from entering the drainage systems in urban areas.

Establish and improve e**arly warning systems** through modern technologies to alert residents about impending floods which can help people evacuate and take necessary precautions.

Practice Questions

Q1.) Who among the following declared a state of emergency on 25th June following advice from Prime Minister Indira Gandhi ?
   a. Fakhruddin Ali Ahmed
   b. Giani Zail Singh
   c. Neelam Sanjiva Reddy
   d. K. R. Narayanan

Q2.)With reference to the Shyok River, consider the following statements:
   1. The Shyok River originates at the Rimo Glacier in the Aravalli Range.
   2. It is a tributary of the Yamuna River.
   3. The Nubra River is a significant tributary of the Shyok River.
Which of the statements given above is/are correct?
   a. 1 only
   b. 1 and 2 only
   c. 3 only
   d. 1,2 and 3

Q3.)Consider the following countries:
   1. Russia
   2. Ukraine
   3. Georgia
   4. Turkey
How many of the above-mentioned countries share a border with the Black Sea?
   a. Only one
   b. Only two
   c. Only three
   d. All four

Q4.) Consider the following statements about National Party status
   A national party gets several benefits, which includes land or accommodation for an office in Delhi and airtime on Doordarshan and All-India Radio during elections.
   Currently, there are six political parties recognised as national parties by the Election Commission – BJP, BSP, Congress, AAP, National People's Party, and CPM.
Which of the statements given above is/are correct?

   a. 1 only
   b. 2 only
   c. Both 1 & 2
   a. Neither 1 nor 2

Q.5)Consider the following statements:
   1. Rim of the Pacific (RIMPAC) exercise is a biennial multinational maritime exercise.
   The exercise aims to enhance interoperability, strengthen strategic maritime partnerships, and ensure the safety of sea lanes in the free and open Indo-Pacific region.
Which of the statements given above is/are correct?
   a. 1 only
   d. 2 only
   e. Both 1 & 2
   f. Neither 1 nor 2

Q.6) The Mars Odyssey, recently seen in news is launched by
   g. ISRO
   h. NASA
   i. ESA
   j. JAXA

Q.7)Consider the following statements:
   1. With reference to the Purchasing Managers' Index (PMI), consider the following statements:
   2. The PMI is a survey-based measure of current and future business conditions.
   3. It is usually released at the start of every month.
   4. It is calculated separately for the manufacturing and services sectors.
Which of the statements given above is/are correct?
   a. 1 only
   b. 1 and 2 only
   c. 2 and 3 only
   d. 1,2 and 3

Q.8)With reference to the Project Nexus, consider the following statements:

1. Project Nexus is an initiative by the Bank for International Settlements (BIS)
2. Project Nexus aimed at enhancing the efficiency and security of cross-border payments.

Which of the statements given above is/are not correct?

e. 1 only
f. 2 only
g. Both 1 and 2
h. Neither 1 nor 2

Q.9) Vanuatu island, recently seen in news located in

a. Black Sea
b. Caspian Sea
c. Indian Ocean
d. Pacific Ocean

Q.10)Senna spectabilis, recently seen in news is

a. Horned frog
b. Invasive plant
c. Rare disease
d. Spider

Q11.)Talley Valley Wildlife Sanctuary, recently seen in news located in

a. Meghalaya
b. Arunachal Pradesh
c. Assam
d. Tripura

Q12.) Consider the following statements about a private bill

1. Only opposition MPs are referred as private members and bills introduced by them are called private bills.
2. Number of Private Bills introduced in parliament have considerably decreased over time.

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

Q13.)With reference to the Cassava-Based Bioplastics initiative in Nagaland, consider the following statements:

1. The initiative to produce compostable bioplastic bags made from cassava starch are supported by the North East Centre for Technology Application and Reach (NECTAR).
2. The concept of 'cassava village' is central to this initiative.
3. The primary goal is to replace single-use plastics with biodegradable alternatives.

How many of the statements given above are correct?

a. Only one
b. Only two
c. All three
d. None

Q14.)With reference to the project cheetah, consider the following statements:

1. Project Cheetah is a program to reintroduce cheetahs to India which were declared extinct in the country in 1952.
2. The project involves the translocation of cheetahs from South Africa and Namibia to Kuno National Park in Madhya Pradesh.

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

Q15.) With reference to the hologram technology, consider the following:

1. Advertising and entertainment
2. Data storage for high-capacity storage
3. Microscopy for biological imaging
4. Defence against counterfeiting

How many of the above are the application of the hologram technology?

a. Only one
b. Only two
c. Only thee
d. All four

Q16.)Consider the following statements about National Medical Commission

1. It is a statuary body established under the National Medical Commission Act of 2019
2. It is responsible for the creation and regulation of all elements of medical education, practice, and institutions.

Which of the statement (s) given above is/are correct?
   a. 1 only
   b. 2 only
   c. Both 1 & 2
   d. Neither 1 nor 2

Q17.)Consider the following rivers in India:
   1. Lakshmana Tirtha
   2. Kabini
   3. Bhavani
   4. Arkavati

How many of the above-mentioned rivers are the left bank tributaries of the Kaveri River?
   a. Only one
   b. Only two
   c. Only three
   d. All four

Q18.) Vaquita, a marine mammal, recently seen in news lives in which of the following areas?
   a. Gulf of California
   b. Persian Gulf
   c. Gulf of Aden
   d. Gulf of Aqaba

Q19.)With reference to the National Register of Citizens (NRC), consider the following statements:
1. The National Register of Citizens is a register of all Indian citizens.
2. The purpose of the NRC is to document legal citizens of India, allowing authorities to identify and deport illegal immigrants.
3. The National Register of Citizens was first implemented in the northeastern state of Manipur.

Which of the statements given above is/are correct?
   a. 1 only
   b. 1 and 2 only
   c. 2 and 3only
   d. 1,2 and 3

Q.21)Pangong Lake, recently seen in news, is located in
   a. Sikkim
   b. Himachal Pradesh
   c. Ladakh
   d. Jammu and Kashmir

Q22.) Digital Bharath Nidhi, recently heard in news, will replace the erstwhile
   a. Universal Service Obligation Fund
   b. Universal Service Updation Fund
   c. Universal Service Extension Fund
   d. None of the above

Q23.)With reference to the Kaziranga National Park, consider the following statements:
   1. Kaziranga National Park sits on the southern banks of the Brahmaputra River.
   2. This park hosts two-thirds of the world's Indian rhinoceroses.
   3. It is recognized as a UNESCO World Heritage Site.

Which of the statements given above are correct?
   a. 1 only
   b. 1 and 2 only
   c. 1 and 3 only
   d. 1,2 and 3

Q24.)Consider the following statements:
Statement-I:
The Axiom-4 mission is a private spaceflight to the International Space Station conducted by Axiom Space in collaboration with ISRO.
Statement-II:
The Axiom-4 mission aims to facilitate commercial activities in space, including scientific research, technological development, and space tourism.

Which one of the following is correct in respect of the above statements?
   a. Both Statement-I and Statement-II are correct and Statement-II is the correct explanation for Statement-I
   b. Both Statement-I and Statement-II are correct and Statement-II is not the correct explanation for Statement-I
   c. Statement-I is correct but Statement-II is incorrect
   d. Statement-I is incorrect but Statement-II is correct

Q25) Consider the following countries
1. Poland
2. Norway
3. Finland
4. China
5. Mongolia

How many of the above countries shares border with Russia
a. Only two
b. Only three
c. Only four
d. All five

Q26.)Panna biosphere reserve is located in which among the following states in India?
a. Tamil Nadu
b. Gujarat
c. Madhya Pradesh
d. Uttarakhand

Q27.)With reference to the classical language in India, consider the following statements:
1. All the Classical Languages are listed in the Eighth Schedule of the Constitution.
2. The Ministry of Culture provides the guidelines regarding Classical languages.

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

Q28.) Moidams, recently seen in news
a. are the burial grounds of Ahom kings and queens.
b. Is a neolithic tool used in parts of south India
c. Is a prehistoric site of industrial valley
d. None of the above

Q29.)The border known as 'Blue Line' sometimes appears in the news in the context of events related to
a. Central Asia
b. Middle East
c. South-East Asia
d. Central Africa

Q30.)The Anand Marriage Act, recently seen in news is related to which of the following minority communities in India?
a. Sikhs
b. Buddhists
c. Zoroastrians
d. Jains

Q31.) Upper siang hydropower project, recently seen in news, is coming up in
a. Arunachal Pradesh
b. Assam
c. Tripura
d. Meghalaya

Q32.)With reference to the Sarus Crane, consider the following statements:
1. The Sarus Crane is the tallest flying bird in the world.
2. It is listed as the critically endangered species on the International Union for Conservation of Nature (IUCN) red list.

Which of the statements given above is/are not correct?
a. 1 only
b. 2 only
c. Both 1 and 2
d. Neither 1 nor 2

Q33.)Consider the following:
1. Prediction and monitoring of cyclones
2. Detecting harmful algal blooms
3. Understanding ocean currents and temperature gradients

How many of the above are the applications of the Regional Analysis of Indian OceaN (RAIN) system?
a. Only one
b. Only two
c. All three
d. None

Q34.) Uming La, recently seen in news is located in
a. Ladakh
b. Arunachal Pradesh
c. Sikkim
d. Himachal Pradesh

Q35.)Which of the following rivers that empties into the Arctic Ocean recently experienced an acute water shortage?
   a. Yangtze River
   b. Murray River
   c. Mackenzie River
   d. Congo River

Q36.)Consider the following Countries:
   1. India
   2. Canada
   3. Mexico
   4. Papua New Guinea
   5. Marshall Islands
   6. Nauru
How many of the above-mentioned countries are the members of the Forum for India-Pacific Islands Cooperation (FIPIC)?
   a. Only two
   b. Only three
   c. Only four
   d. Only five

Q37.) Consider the following statements about Salvinia molesta, recently seen in news
   1. It is on the list of the World's 100 Most Invasive Species.
   2. Cyrtobagus salvinia, a bioagentis effective in the control of Salvinia molesta.
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

Q38.) With reference to the shigella infection, consider the following statements:
   1. It is an intestinal infection caused by a family of viruses known as shigella.
   2. Children under age 5 are most likely to get shigella infection.
   3. Currently, there are no vaccines available for shigella.
Which of the statements given above is/are not correct?
   a. 1 only
   b. 1 and 2 only
   c. 2 and 3 only
   d. 1,2 and 3

Q39.) The SDG India Index, recently seen in news released by the
   a. Ministry of Statistics and Programme Implementation
   b. Ministry of Environment, Forest and Climate Change
   c. NITI Aayog
   d. Ministry of Labour and Employment

Q40.) Consider the following statements about SCOMET list, recently seen in news
   1. SCOMET list is India's National Export Control List of dual use items, munitions and nuclear related items, including software and technology.
   2. It is maintained under India's Foreign Trade Policy which is implemented by the Directorate General of Foreign Trade (DGFT).
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

Q41.) Consider the following states in India:
   1. Uttar Pradesh
   2. Uttarakhand
   3. Bihar
   4. Assam
   5. West Bengal
   6. Sikkim
How many of the above-mentioned states share border with Nepal?
   a. Only two
   b. Only three
   c. Only four
   d. Only five

Q42.) Crew Health and Performance Exploration Analog (CHAPEA) project, recently seen in news is a series of analog missions conducted by
   a. ISRO
   b. NASA
   c. JAXA
   d. Roscosmos

Q43.) Consider the following statements about International Civil Aviation Organization
1. It is a specialized agency of the United Nations.
2. It was established by the Chicago Convention.

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

Q44.) Nouka Baich recently seen in news is the traditional boat race of
   a. Manipur
   b. West Bengal
   c. Tamil Nadu
   d. Kerala

Q45.) With reference to the India Young Professional Scheme, consider the following statements:
1. It is a youth mobility scheme that allows Indian nationals to live, work, and study in the United States for up to two years.
2. This was scheme announced at the G20 summit in Bali in 2022.

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

Q46.) Consider the following
1. Jerdon's courser
2. Pigmy Hog
3. Great Indian Bustard
4. Indian Leopard

How many of the above are classifeid as critically endangered?
   a. Only one
   b. Only two
   c. Only three
   d. All four

Q47.) With reference to the National Company Law Tribunal (NCLT), consider the following statements:

1. The NCLT is a quasi-judicial body under the Companies Act, 2013.
2. The NCLT disposes of proceedings under the Companies Act, including arbitration, compromise, reconstruction, and winding up of companies.
3. The NCLT is the Adjudicating Authority for insolvency proceedings under the Insolvency and Bankruptcy Code, 2016.
4. Decisions taken by the NCLT can be appealed to the National Company Law Appellate Tribunal (NCLAT).

How many of the above given statements are correct?
   a. Only one
   b. Only two
   c. Only three
   d. All four

Q48.) Consider the following statements about the Article 341 of the Indian Constitution.
1. Article 341 of the Indian Constitution empowers the President to specify castes, races, or tribes as SC for various states and union territories.
2. Parliament has the authority to include or exclude any caste, race, or tribe from the list of Scheduled Castes specified in the Presidential notification.

Which of the statements given above is/are not correct?
   a. 1 only
   b. 2 only
   c. Both 1 and 2
   d. Neither 1 nor 2

Q49.) Consider the following countries
1. Rwanda
2. Botswana
3. Chad
4. Zambia

How many of the countries given above are landlocked?
   a. One only
   b. Two only
   c. Three only
   d. All four

Q50.)Squalus Hima, recently found in news is a

a. green pit viper
b. wolf snake
c. burrowing frog
d. dogfish shark

Q51.) With reference to the Enemy properties in India, consider the following statements:

5. Enemy properties are those that were once owned by individuals who took Chinese or Pakistani citizenship after India fought wars with these countries.
6. Enemy properties include immovable properties only.
7. The law of succession does not apply to enemy properties.

Which of the statements given above is/are correct?

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

Q52.) Consider the following statements about Cyprus

1. It is an island country in the eastern Mediterranean Sea, north of the Sinai Peninsula, south of the Anatolian Peninsula, and west of the Levant.
2. The northeast portion of the island is de facto governed by the self-declared Greek Republic of Northern Cyprus.

Which of the statements given above is/are correct?

a. 1 only
b. 2 only
c. Both 1 & 2
d. Neither 1 nor 2

Q53.) Consider the following statements:

1. The International Centre for Audit of Local Governance (iCAL), a pioneering initiative by supreme audit institutions (SAIs) India.
2. iCAL's main objectives are to improve Local Government Audit standards, strengthen data collection and reporting, and empower auditors, executives, and elected representatives with training programs and leadership development initiatives.

Which of the statements given above is/are correct?

a. 1 only
b. 2 only
c. Both 1 & 2
d. Neither 1 nor 2

Q54.) Ratapani Wildlife Sanctuary, recently seen in news is located in

a. Karnataka
b. Mizoram
c. Madhya Pradesh
d. Odisha

Q55.) Consider the following statements about Kadambini Ganguly

1. She is regarded as the first female medical practitioner in India.
2. She played a crucial role in the passing of Age of Consent Act 1891.

Which of the statements given above is/are correct?

a. 1 only
b. 2 only
c. Both 1 & 2
d. Neither 1 nor 2

Q56.) Consider the following statements:

1. India Maritime Centre (IMC) is a cornerstone initiative of the Ministry of Ports, Shipping, and Waterways under the Maritime India Vision 2030.
2. The IMC aims to provide a unified platform for the Indian maritime industry, acting as a think tank for policy formulation and industry recommendations.

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

Q57.) Consider the following statements about the Kanwar Yatra:

1. The Kanwar Yatra is a sacred pilgrimage undertaken by devotees of Lord Shiva.

2. Devotees carry sacred water from the Ganges River to Shiva temples.

Which of the statements given above is/are not correct?

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

Q58.) With reference to the Nipah virus (NiV), consider the following statements:

    1. The Nipah virus is a zoonotic virus.
    2. Fruit bats are natural hosts of the virus.
    3. It was first identified during an outbreak in Bangladesh.
    4. There is no specific medication or vaccine for Nipah virus.

How many of the statements given above are correct?

    a. Only one
    b. Only two
    c. Only three
    d. All four

Q59.) Identify the non metal among the following:

    a. Graphite
    b. Manganese
    c. Uranium
    d. Mercury

Q60.)Consider the following rivers:

    1. Purna
    2. Pranhita
    3. Hemavathi
    4. Indravathi
    5. Sabari
    6. Manjira

How many of the above-mentioned rivers are the left bank tributaries of the river Godavari?

    a. Only two
    b. Only three
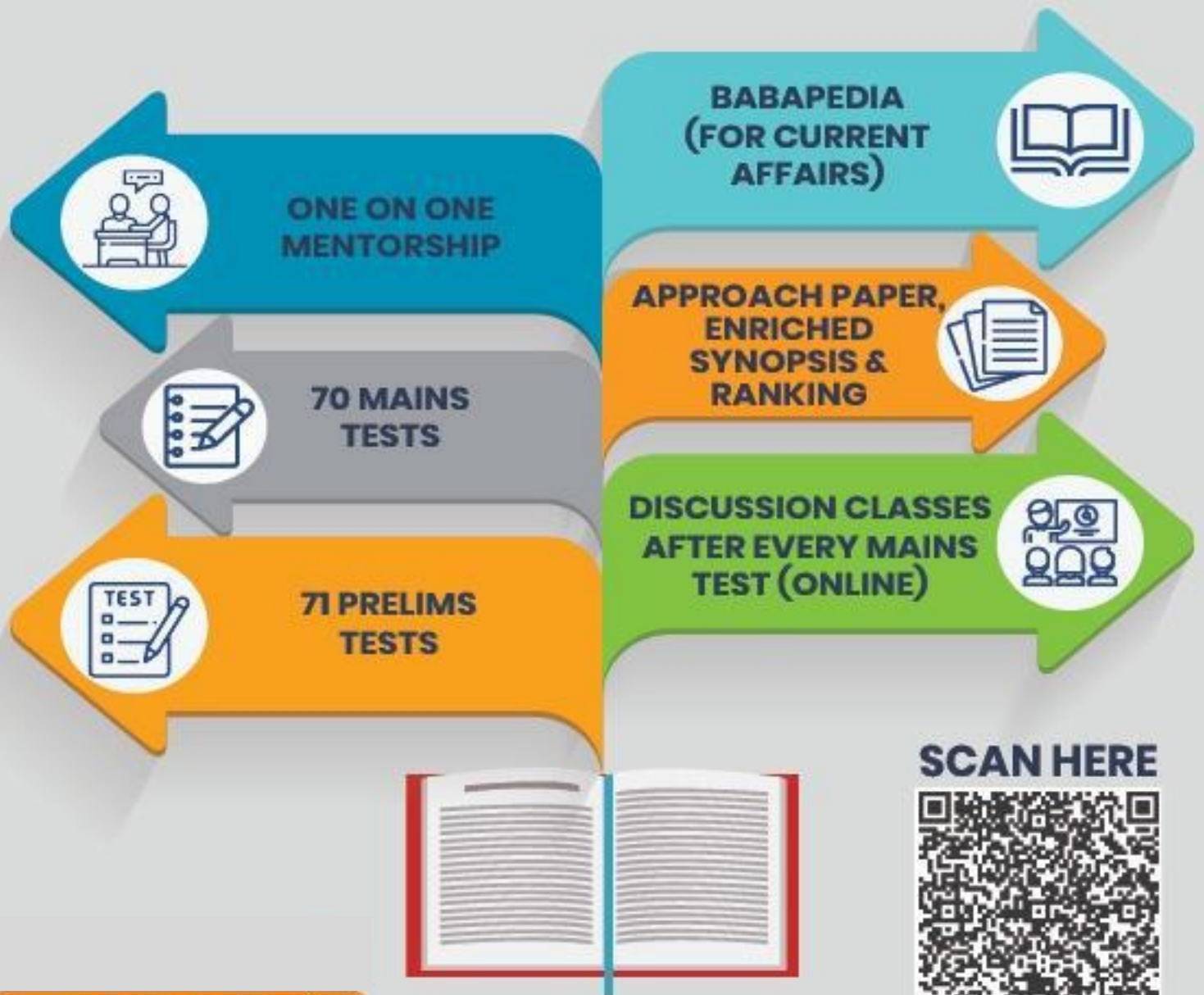   **c. Only four**
    d. Only five