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Topic no	Topic Covered	Page No
ECONOMY		
1.	FOREIGN PORTFOLIO INVESTORS (FPIS) WITHDRAW FROM DEBT VRR SEGMENT: REASONS AND IMPACT	6-11
2.	EXPANSION OF ACTIVITIES AT INTERNATIONAL FINANCIAL SERVICES CENTRE (IFSC)	11-13
3.	STATUS OF EDUCATION AND HEALTH EXPENDITURE IN INDIA	14-17
4.	STATUS OF RODTEP SCHEME AND US ANTI-SUBSIDY DUTIES	17-19
5.	DIRECT TAX-GDP RATIO ROSE TO 15-YEAR HIGH IN FY23, TAX BUOYANCY DIPPED	19-20
6.	INDIAN BOURSES NOW FOURTH-LARGEST WITH COMBINED STOCK VALUE OF \$4.33 TRILLION	21-23
7.	INCOME INEQUALITY TRENDS IN INDIA	23-27
8.	THERE IS SERIOUS CONCERN ABOUT WHOLE CONSTRUCT OF SAFE HARBOUR	27-29
9.	ZEE ASKS SONY TO WITHDRAW TERMINATION OF MERGER, URGES NCLT TO ACT	29-30
10.	GOVT PERMITS DIRECT LISTING BY INDIAN FIRMS ON GIFT-IFSC'S INTERNATIONAL MARKETS	30-32
11.	CAPEX-LED GROWTH STRATEGY FROM INDUSTRY CHAMBERS' RECOMMENDATIONS	32-36
12.	RBI TO INFUSE ₹2.50 LAKH CRORE LIQUIDITY	35-39
13.	WHAT ARE THE RBI'S GUIDELINES ON STATE 'GUARANTEES'?	39-41
14.	CENTRE STARTS SURVEY ON PARTICIPATION OF WOMEN IN WORKFORCE	41-42
15.	ZEE-SONY MERGER LEGAL PROCEEDINGS	42-47
16.	NATIONAL CONFERENCE ON STRATEGIC TRADE CONTROLS (NCSTC) HIGHLIGHTS:	47-51
SCIENCE AND TECHNOLOGY		
17.	22 'VAIBHAV' FELLOWS TO BUILD LONG-TERM RESEARCH SYNERGY	51-52
18.	INDIANS CONSUMING RICE AND WHEAT LOW IN FOOD VALUE, HIGH IN TOXINS: ICAR STUDY	52-53
19.	HOW PHYSICISTS ARE MAKING SENSE OF THE MYSTERY OF PULSAR GLITCHES	54
20.	CENTRE RELEASES NEW REGIMEN FOR LEPROSY TREATMENT	55
21.	THE URGENT NEED FOR DATA TO MAKE PERSONALISED MEDICINE EQUITABLE	55-57

22.	A NEW ALLOY DEVELOPED CAN ACT AS ALTERNATIVE MAGNETIC REFRIGERANT FOR MINIMIZING GREENHOUSE GAS EMISSIONS	58-59
23.	THE FINER TOUCH: WHEN ‘ARTIFICIAL SKIN’ IS MORE SENSITIVE THAN THE ORIGINAL	60-61
24.	ULTRA-PROCESSED FOODS: HERE’S WHAT THE EVIDENCE ACTUALLY SAYS ABOUT THEM	61-62
25.	THE MOON IS A TOUGH CUSTOMER	62-63
26.	JET ENGINE DEAL WITH FRANCE WILL GIVE 100% ACCESS TO TECH	64
27.	OUTBREAK OF WESTERN EQUINE ENCEPHALITIS VIRUS IN ARGENTINA	65-66
28.	INSAT-3DS SATELLITE SENT TO LAUNCH PORT IN SRIHARIKOTA	66
29.	THE GENOMIC REVOLUTION PROMISES TO TRANSFORM CANCER CARE	67-68
30.	WHAT IS END-TO-END ENCRYPTION AND HOW DOES IT SECURE INFORMATION?	68-69
31.	ASTRONOMERS SPOT UNUSUAL OBJECT THAT FALLS WITHIN THE BLACK HOLE ‘MASS GAP’	9-70
ENVIRONMENT		
32.	ODISHA KNOCKS ON TAMIL NADU’S DOORS TO HELP TACKLE JUMBO ATTACKS, SEEKS FOUR KUMKI ELEPHANTS AND MAHOUTS	71-72
33.	WORLD’S BIGGEST ICEBERG BATTERED BY WAVES AS IT HEADS NORTH	73-74
34.	TWO NEW MAMMALIAN SPECIES ADDED TO KAZIRANGA’S FAUNA	74-75
35.	ODISHA TO ESTABLISH A MELANISTIC TIGER SAFARI – A FIRST OF ITS KIND IN THE WORLD	76-77
36.	NO FOOD IN FORESTS: BEARS, LANGURS THROG UTARAKHAND APPLE ORCHARDS AS NATIVE VEGETATION GETS TAKEN OVER BY INVASIVES	77-78
37.	ALBATROSSES ARE THREATENED WITH EXTINCTION — AND CLIMATE CHANGE COULD PUT THEIR NESTING SITES AT RISK	79-80
38.	CABINET APPROVES ₹8500 CRORE INCENTIVE SCHEME FOR COAL GASIFICATION PROJECTS	80-81
39.	INDIA ONE OF THE NINE COUNTRIES TO SIGN A GLOBAL PACT TO PROTECT ENDANGERED RIVER DOLPHINS	81-82
40.	RARE GOLDEN TIGER SNAPPED IN KAZIRANGA	82-83
41.	INVASION OF NON-NATIVE SPECIES CAN LEAD TO ECOSYSTEM SHIFTS	83-86
42.	SHARK & RAY MEAT CONSUMPTION NO LONGER RESTRICTED TO INDIA’S TRIBAL & COASTAL PEOPLES: PAPER	86-87
43.	FIRST PENGUIN DEATHS IN SUB-ANTARCTIC REGION ATTRIBUTED TO BIRD FLU STRAIN	87-88

44.	INDIA HAS 718 SNOW LEOPARDS; MOST OF THEM LIVE IN UNPROTECTED AREAS: CENTRE	88-91
INTERNATIONAL RELATIONS		
45.	RUSSIA BLAMES KYIV FOR ATTACK ON GAS TERMINAL AT BALTIC SEA PORT	91-92
46.	SERUM INSTITUTE OF INDIA JOINS GLOBAL NETWORK TO BOOST PRODUCTION OF AFFORDABLE OUTBREAK VACCINES	92-93
47.	TURKEY'S PARLIAMENT APPROVES SWEDEN'S NATO MEMBERSHIP	93-94
48.	THE ISSUE OF GENOCIDE AND THE WORLD COURT	94-95
49.	SENEGAL'S PINK LAKE IS ON THE VERGE OF DISAPPEARING — HOW TO PROTECT IT	95-97
50.	INDIAN AIR FORCE CONDUCTS EXERCISE DESERT KNIGHT WITH FRANCE, UAE OVER ARABIAN SEA	97-98
51.	INDIA'S STANCE ON FISHERIES SUBSIDIES AT WTO	98-101
52.	INDIA FRANCE COOPERATION	102-105
53.	RESTORING LAKE VICTORIA: CSE, TANZANIAN AUTHORITIES HOLD MULTI-NATION STAKEHOLDER CONSULTATION	105-106
54.	CLIMATE CHANGE, WAR DISRUPTING GLOBAL TRADE IN 3 KEY SEA LANES OF BLACK SEA, RED SEA & PANAMA CANAL: UNCTAD	106-107
55.	PHILIPPINES AND VIETNAM SIGN DEAL ON SOUTH CHINA SEA	108
56.	CORRUPTION PERCEPTIONS INDEX (CPI) – 2023	109-110
POLITY		
57.	FIRST MEETING OF THE SOCIAL AUDIT ADVISORY BODY (SAAB) HELD	110-112
58.	DELHI HC PROTECTS ANIL KAPOOR'S PERSONALITY RIGHTS: WHAT THEY ARE, HOW HAVE COURTS RULED	112-113
59.	SC STATUS CAN'T BE GIVEN TO DALITS WHO CONVERTED TO ISLAM & CHRISTIANITY: CENTRE TO SC	113-115
60.	ON EQUAL ACCESS TO BENEFITS FOR ALL SCS	115-117
61.	CAUVERY WATER REGULATION COMMITTEE AN UNBIASED PLATFORM, SAYS UNION MINISTER	117-119
62.	IS RIGHT TO ESTABLISH MINORITY INSTITUTION CONTINGENT ON STATE RECOGNITION: SC TO GOVT	119-120
63.	FORMER BIHAR CHIEF MINISTER KARPOORI THAKUR TO BE AWARDED BHARAT RATNA POSTHUMOUSLY	120-123
64.	UNION GOVT. MAKES IT CLEAR THAT AADHAAR CARD NO PROOF OF CITIZENSHIP, BIRTH DATE	123-124

65.	17TH LOK SABHA MAY ENTER HISTORY WITH LEAST NUMBER OF LAPSED BILLS	124-125
GEOGRAPHY		
66.	GSI FORMULATES 1055 PROGRAMS FOR FIELD SEASON 2024-25, FOCUS ON STRATEGIC AND CRITICAL MINERALS LIKE LITHIUM	126-129
67.	MAJORITY OF U.S. STATES REMAIN FROZEN AS ARCTIC WEATHER EXTREME LEAVES ITS MARK	129-130
68.	INDIA TO SEND INDUSTRY DELEGATION FOR COPPER MINING OPPORTUNITIES IN ZAMBIA	131-133
69.	NEPAL EXPLORES TAPPING FLOOD-RISK GLACIAL LAKES FOR CLEAN POWER	133-135
70.	TENSION IN MANIPUR AS RADICAL GROUP ARAMBAI TENGGOL 'SUMMONS' ALL 40 VALLEY-BASED MLAS TO KANGLA FORT	134-136
71.	ONLINE SALES, ACCESS-CONTROLLED GATES HURTING BUSINESS, SAY KASHMIRI SHAWL SELLERS	136-137
72.	EL NINO: MALAWI'S HARVEST OF MAIZE – ITS STAPLE FOOD – MAY FALL BY 22.5% THIS YEAR	137-139
HISTORY		
73.	PM WISHES PEOPLE ON THAIPOOSAM	139-140
74.	HINDU TEMPLE EXISTED AT GYANVAPI MOSQUE SITE: ASI SURVEY REPORT	140-141
75.	INDIA NOMINATES 12 FORTS OF MARATHAS FOR UNESCO WORLD HERITAGE LIST	141-142
SCHEMES		
76.	PM MODI LAUNCHES NEW ROOFTOP SOLAR POWER SCHEME: WHAT IT IS, WHY IT IS NEEDED	142-143
77.	PM YOUNG ACHIEVERS' SCHOLARSHIP AWARD SCHEME FOR A VIBRANT INDIA (PM YASASVI) FOR OBC, EBC AND DNT STUDENTS	144

Topic 1. FOREIGN PORTFOLIO INVESTORS (FPIs) WITHDRAW FROM DEBT VRR SEGMENT: REASONS AND IMPACT

Important for the subject: Economy

Withdrawal Amount:

FPIs have pulled out ₹8,089 crore from the **debt Voluntary Retention Route (VRR) segment** after four consecutive years of inflows.

Reasons for Withdrawal:

- **Lack of Investment Opportunities:** FPIs cite a **dearth of opportunities to invest in stressed or structured credit** as a primary reason for the withdrawal.
- **End of Withholding Tax Benefit:** The **end of the withholding tax benefit** has influenced FPIs to **reconsider their investment strategies** in the Indian debt market.
- **Reduced Promoter Leverage:** Opportunities that were once available due to promoter financing have diminished as **promoter leverage in the corporate sector has significantly reduced**.

Contrast with Overall Debt Market Inflows:

- In contrast to the outflows from the VRR segment, the overall Indian debt market has witnessed significant inflows, exceeding ₹80,000 crore. **This surge is attributed to potential front-loaded flows ahead of India's inclusion in global bond indices.**

Voluntary Retention Route (VRR):

- Introduced in March 2019, **VRR aims to attract long-term overseas investments into the Indian debt market.**
- **Investments through VRR are exempt from certain regulatory norms** applicable to regular FPI investments.

Impact of Tax Policy Changes:

- The withdrawal is partly attributed to the **impact of tax policy changes, especially the end of the 5% concessional tax rate, resulting in an effective withholding tax of 20% on rupee-denominated bonds.**

Investor Sentiment and Fiscal Approach:

- The outflows **underscore the significance of tax policy changes in shaping investor sentiment.**
- Emphasizes the **need for a balanced fiscal approach to maintain market competitiveness**, according to industry experts.

Currency Hedging and Developed Markets:

- After accounting for currency hedging costs, it may be more advantageous for FPIs to **stay invested in developed markets like the US**, where yields have increased significantly across maturities.
- In summary, the **withdrawal of FPIs from the debt VRR segment** reflects a combination of factors, including a scarcity of attractive investment opportunities, changes in tax policies, and reduced opportunities in the corporate sector.
- The contrasting inflows into the broader debt market suggest varied investor strategies and considerations.

Voluntary Retention Route (VRR):

Introduction:

- VRR, or Voluntary Retention Route, is a **scheme introduced by the Reserve Bank of India (RBI) in March 2019**.

Objective:

- The **primary goal of VRR is to attract long-term foreign portfolio investments into the Indian debt market**.
- VRR is designed as a **voluntary scheme for Foreign Portfolio Investors (FPIs) looking to invest in debt instruments in India**.

Regulatory Norms:

- Investments made through the VRR route are **exempt from certain macroprudential and regulatory norms** that typically apply to regular FPI investments.

Long-Term Commitment:

- The scheme **encourages FPIs to make long-term commitments to the Indian debt market by offering certain exemptions and benefits**.

Macroeconomic Considerations:

- By providing a route with fewer regulatory restrictions, **VRR aims to strike a balance between attracting foreign investments and ensuring macroeconomic stability**.

Types of Debt Instruments:

- FPIs can invest through VRR in various debt instruments, **including government**

securities, treasury bills, corporate bonds, and other money market instruments.

Auctions and Limit Acquisition:

- To invest through VRR, FPIs need to participate in periodic auctions conducted by the RBI.
- There is a **limit on the total amount of investment** that can be acquired through the VRR route.
- In summary, **VRR is a specialized route introduced by the RBI to attract and facilitate long-term foreign investments in the Indian debt market, offering exemptions from certain regulatory norms to encourage FPIs to make sustained commitments.**

Front-Loading in Debt Market by Foreign Portfolio Investors (FPIs):

Strategy Overview:

- In the debt market, FPIs are employing a strategy known as “front-loading.”
- This involves **accelerating government securities purchases in anticipation of India’s bond inclusion in global indices starting June 2024.**

Purpose of Front-Loading:

- The primary goal of front-loading is to **position FPIs advantageously ahead of the anticipated increase in demand for Indian bonds due to global index inclusion.**

Bond Inclusion in Global Indices:

- India’s government securities are expected to be included in global indices from June 2024.
- This inclusion is likely to attract significant attention from international investors tracking these indices.

Positive Factors Influencing Strategy:

- **Stability of the Rupee:** The stability of the Indian rupee is identified as a positive factor influencing FPI strategies in the fixed-income space.
- **Core Inflation Below 4%:** Another positive factor is the core inflation falling below the 4% mark, contributing to the attractiveness of Indian debt.

Record Investment in Indian Debt Markets:

- **FPIs executed a front-loading strategy by injecting a record ₹15,647 crore into Indian debt markets** in the first three weeks of January 2024.
- This substantial investment builds on the momentum observed in 2023 when total debt inflows reached a six-year high of \$7.3 billion.

Anticipation of Favorable Market Conditions:

- Experts anticipate that **FPIs are positioning themselves early to benefit from potentially favorable market conditions once India's bonds are included in global indices.**
- The early investment is seen as a proactive approach to capitalize on the expected surge in demand.
- In summary, **front-loading in the debt market by FPIs reflects a strategic move to gain a competitive advantage and maximize returns in anticipation of increased demand for Indian government securities following their inclusion in global indices.**
- Positive economic indicators, such as a stable rupee and lower core inflation, contribute to the attractiveness of this investment strategy.

Rupee-Denominated Bonds

- Rupee-denominated bonds, also known as **Masala bonds**, are debt instruments issued in Indian rupees by entities, including Indian and foreign companies, in the international markets.

Currency of Denomination:

- Unlike traditional bonds, which are denominated in major global currencies like the US Dollar or Euro, **rupee-denominated bonds are issued in Indian rupees.**

Objective:

- The primary purpose of issuing rupee-denominated bonds is to **allow entities to raise capital in international markets without being exposed to currency risk. Investors bear the currency risk in these bonds.**

Interest Payments and Principal Repayment:

- Interest payments and the repayment of the principal amount are made in Indian rupees, providing clarity to both the issuer and the investor about cash flows.

Masala Bonds Terminology:

- The term "Masala bonds" gained popularity as a colloquial name for rupee-denominated

bonds, reflecting the Indian currency and adding a cultural touch.

Issuers of Rupee-Denominated Bonds:

- Indian entities, including corporations and financial institutions, may issue rupee-denominated bonds in the international markets.
- **Foreign entities, especially those interested in raising funds for investments in India, may also issue such bonds.**

Investor Base:

- Rupee-denominated bonds attract a diverse set of investors, **including global investors seeking exposure to the Indian market and Indian diaspora interested in supporting Indian entities.**

Risk and Returns:

- **Investors in rupee-denominated bonds are exposed to currency risk**, as the value of the Indian rupee against other currencies can fluctuate.
- **The interest rates offered on these bonds are influenced by market conditions and issuer creditworthiness.**

Tax Implications:

- The tax treatment of interest income earned on rupee-denominated bonds may vary depending on the jurisdiction and relevant tax laws.

Regulatory Framework:

- **The issuance and trading of rupee-denominated bonds are Important for the subject to regulatory guidelines set by authorities** in both the issuer's country and the international market.

Growing Popularity:

- **Rupee-denominated bonds have gained popularity as an alternative fundraising avenue for Indian entities** and as an investment option for global investors looking to diversify their portfolios.
- **In summary, rupee-denominated bonds provide a unique avenue for entities to tap into international capital markets while allowing investors to gain exposure to the Indian economy, albeit with associated currency risk.**

Topic 2. EXPANSION OF ACTIVITIES AT INTERNATIONAL FINANCIAL SERVICES CENTRE (IFSC)

Important for the subject: Economy

Government's Decision:

The government has expanded the **scope of activities permissible at the International Financial Services Centre (IFSC).**

Inclusion of Services:

- A gazette notification issued by the Ministry of Finance has **included additional services as part of financial services within the IFSC.**

Enlisted Services:

- The expanded list now **encompasses services such as bookkeeping, accounting, taxation, and financial crime compliance.**

Regulatory Oversight:

- The provision specifies that these financial services should be offered by units within an IFSC that are regulated by the International Financial Services Centres Authority (IFSCA).

Target Audience:

- The **financial services are intended for non-residents whose business is not established through the splitting up of existing business in India or the reconstruction/reorganization of existing business in India.**

IFSCA Regulation:

- The regulatory oversight by IFSCA **ensures compliance and adherence to international financial standards within the IFSC.**

Date of Notification:

- The notification was issued on January 18, **formalizing the inclusion of the specified services within the scope of financial activities at IFSC.**
- **International Financial Services Centres Authority (IFSCA) and Its Scope:**

Establishment:

- IFSCA is the regulatory body established by the Government of India to **regulate financial services in the International Financial Services Centres (IFSCs).**

Objective:

- The primary objective of IFSCA is to **develop and regulate the financial products, financial services, and financial institutions in the IFSCs** to promote ease of doing business.
- IFSCA has a **broad regulatory scope covering various financial services, institutions, and activities within the IFSCs.**

Regulation of Financial Services:

- IFSCA regulates a wide array of financial services, **including banking, insurance, securities, and other financial products and services offered in the IFSCs.**
- The authority oversees and regulates **financial institutions operating within the IFSCs, ensuring compliance with international best practices and standards.**
- IFSCA plays a crucial role in the **development of financial markets within IFSCs by introducing innovative products and services, fostering competition, and attracting global investors.**

International Standards:

- IFSCA aligns its regulatory framework with international standards to facilitate global participation and enhance the competitiveness of IFSCs.

Innovation and Technology:

- Encouraging innovation and the **use of technology in financial services is another aspect of IFSCA's mandate, promoting a modern and efficient financial ecosystem.**

Investor Protection:

- The authority is committed to **ensuring investor protection and maintaining the integrity of the financial system within the IFSCs.**
- IFSCA's regulatory framework is designed to **strike a balance between facilitating business growth and ensuring a robust regulatory environment within the IFSCs.**

International Financial Services Centres Authority (IFSCA):**Formation and Purpose:**

- IFSCA is a **regulatory body established by the Government of India.**
- It was formed in **April 2020 with the aim of developing and regulating the financial services market in the International Financial Services Centre (IFSC) in India.**

Jurisdiction:

- IFSCA operates **within the Gujarat International Finance Tec-City (GIFT City),**

which is India's first operational IFSC.

- GIFT City, located in Gandhinagar, Gujarat, is designed to **become a global financial hub, providing a conducive ecosystem for international financial services.**

Regulatory Functions:

- IFSCA is entrusted with the task of **regulating various financial services in the IFSC, including banking, insurance, capital markets, and other financial products and services.**
- It aims to create a robust and competitive environment for financial activities within the IFSC.

Role in Global Financial Markets:

- IFSCA works towards **positioning GIFT City as a competitive and attractive destination for global financial players.**
- It facilitates ease of doing business and provides a regulatory framework that aligns with international standards.

Regulated Entities:

- IFSCA regulates various entities operating within the IFSC, such as banking units, insurance entities, capital market intermediaries, and other financial institutions.

Innovation and Development:

- IFSCA encourages innovation in financial products and services to enhance the competitiveness of the IFSC.
- It supports the development of a vibrant and dynamic financial ecosystem by fostering collaboration and partnerships.

International Collaboration:

- **IFSCA collaborates with international regulatory bodies and financial institutions to promote cross-border financial activities and maintain global best practices.**

Legal Framework:

- The regulatory framework for IFSCA is **governed by the International Financial Services Centres Authority Act, 2019, and various regulations and guidelines issued by IFSCA.**

Topic 3. STATUS OF EDUCATION AND HEALTH EXPENDITURE IN INDIA

Important for the subject: Economy

Education Expenditure:

Despite high priority accorded, the **share of education in total expenditure by the Centre is yet to reach the high of FY 2019-20.**

- Data from the Economic Survey (2022-23) reveals that the **share of education in General Government (Centre and State together) expenditure from 2014-15 to 2022-23 has decreased to single digits.**
- Expenditure on education as a **share of total budget expenditure was 3.3% in FY 2019-20, dropping to 2.11% in FY 2021-22**, and seeing a slight rise to 2.5% in the subsequent years.
- The decline in expenditure, especially in FY 2020-21, is **attributed to the impact of the pandemic.**
- The National Education Policy 2020 (NEP 2020) **emphasizes substantial investment in a strong public education system.**
- **NEP 2020 envisions increasing public investment in education to reach 6% of GDP, with both the Centre and States working together.**

Health Expenditure:

- Expenditure on health **witnessed some rise due to the pandemic, but the overall picture is not highly encouraging.**
- The National Health Policy (NHP), 2017, aims to **raise government health expenditure to 2.5% of GDP in a time-bound manner.**
- NHP also suggests that States should increase their health spending to at least 8% of their Budget.
- Data from the Economic Survey shows that **General Government expenditure on health increased to 6.9% in FY 2022-23 from 4.5% in FY 2014-15, but it is yet to reach the set target.**
- The rise in health expenditure during the pandemic underscores the importance of healthcare, but sustained efforts are needed to meet the long-term targets.

Challenges and Initiatives:

- The decline in education and health expenditure in certain years, **especially during the pandemic, points to challenges in maintaining consistent investment.**
- Initiatives like NEP 2020 and NHP 2017 highlight the commitment to increasing

investment in education and health, but achieving the specified targets requires coordinated efforts from the Centre and States.

- **Public investment in education and health is crucial for building a strong and resilient nation**, and continued attention to these sectors is essential for sustainable development.
- The government needs to prioritize sustained and increased investment in education and health to ensure the well-being and development of the population.

National Education Policy 2020 (NEP 2020):

- NEP 2020 is a comprehensive framework that **outlines the vision and roadmap for transforming the education system in India**.
- It was approved by the Union Cabinet in July 2020, replacing the **National Policy on Education (NPE) 1986**.

Key Objectives and Focus Areas:

- **Universalization of Education:** Ensuring access to quality education for all from early childhood to higher education.
- **Holistic Learning:** Emphasizing holistic and multidisciplinary education, integrating vocational education, and fostering critical thinking and creativity.
- **Flexibility and Multilingualism:** Promoting flexibility in choosing Important for the subjects, the medium of instruction, and a multilingual approach to education.
- **Technology Integration:** Leveraging technology for personalized learning, teacher training, and educational governance.
- **Assessment Reforms:** Shifting from rote learning to competency-based assessments, reducing the emphasis on board exams, and introducing continuous assessments.

Higher Education Reforms:

- **Integration of Higher Education:** Breaking down silos between different streams of education and fostering multidisciplinary universities.
- **Research and Innovation:** Encouraging research and innovation, establishing a National Research Foundation (NRF), and promoting a research ecosystem.
- **Global Outreach:** Facilitating global integration by allowing top global universities to establish campuses in India and promoting the internationalization of education.

School Education Reforms:

- **Foundational Learning:** Focusing on foundational literacy and numeracy in early

grades.

- **Curriculum Rationalization:** Reducing the curriculum load and promoting a more experiential and application-based approach.
- **Teacher Training:** Enhancing teacher training and promoting continuous professional development.

Implementation and Way Forward:

- The policy emphasizes phased implementation with a focus on collaboration between the Centre and States.
- NEP 2020 aims to transform India's education system to meet the needs of the 21st century and contribute to the nation's socio-economic development.

National Health Policy 2017 (NHP 2017):

- NHP 2017 is a **policy document that sets the vision and strategic direction for health systems in India.**
- It replaces the **previous National Health Policy, which was formulated in 2002.**

Key Objectives and Focus Areas:

- **Universal Health Coverage (UHC):** Ensuring access to affordable and quality healthcare services for all citizens.
- **Primary Healthcare:** Strengthening primary healthcare as the foundation of the health system, with a focus on preventive and promotive healthcare.
- **Health and Wellness Centers:** Transforming sub-centers and primary health centers into Health and Wellness Centers, providing a comprehensive range of services.
- **Health Infrastructure:** Enhancing public health infrastructure and addressing human resource gaps.
- **Strategic Purchasing:** Introducing strategic purchasing mechanisms for healthcare services.

Financing and Governance:

- **Public Health Expenditure:** Increasing government spending on health to at least 2.5% of GDP over time.
- **Decentralized Health Planning:** Encouraging decentralized health planning and strengthening district-level health systems.
- **Community Engagement:** Promoting community participation in health planning and implementation.

Health Information Systems:

- **Digital Health:** Embracing digital health initiatives to improve healthcare delivery and information management.

Regulatory Framework:

- **Regulatory Reforms:** Streamlining regulatory frameworks for medical education, clinical practices, and drug prices.

Implementation and Monitoring:

- The policy emphasizes collaborative efforts between the Centre and States for effective implementation.
- NHP 2017 envisions a health system that meets the healthcare needs of all sections of the population and contributes to improved health outcomes.

Topic 4. STATUS OF RODTEP SCHEME AND US ANTI-SUBSIDY DUTIES

Important for the subject: Economy

Scheme Overview:

The popular **Remission of Duties and Taxes on Exported Products (RoDTEP)** scheme for exporters in India is not set to be reworked by the Centre.

US Antisubsidy Duties Imposition:

- Despite the US government imposing anti-subsidy duties against the RoDTEP scheme, Indian officials clarify that **the issue is not related to the World Trade Organization (WTO) compatibility of the scheme.**

Documentation Challenge:

- The challenge lies in the **inability of exporters to provide adequate documents to US investigating teams, not the compliance of RoDTEP with WTO regulations.**
- **Directorate General of Foreign Trade (DGFT) and Directorate General of Trade Remedies (DGTR) are collaborating to educate exporters on the documentation process.**

WTO Compliance and Transparency:

- RoDTEP is asserted to be **fully WTO compliant** and transparent in its determination of refund rates.
- The scheme, **introduced in January 2021, replaced the WTO-incompatible MEIS scheme, addressing transparency issues raised at the WTO.**

Design of RoDTEP:

- RoDTEP was designed carefully to ensure transparency, with refund rates based on embedded duties and taxes such as VAT on fuel, mandi tax, and duty on electricity used in manufacturing exported items.

Imposition of Antisubsidy Duties:

- Both the US and the EU imposed countervailing (antisubsidy) duties on certain Indian products benefiting from RoDTEP payments.
- The affected products include paper file folders, common alloy aluminum sheets, forged steel fluid end blocks (by the US), and specific graphite electrode systems (by the EU).

Documentation Streamlining Efforts:

- Efforts are underway to familiarize exporters with the documentation process, emphasizing that RoDTEP payments are remissions and not incentives.
- Exporters are urged to demonstrate that RoDTEP payments are in lieu of input taxes not covered by other schemes and are not export subsidies.
- Steps are being taken for general awareness building among exporters to ensure clarity on the nature of RoDTEP payments and proper documentation.

Remission of Duties and Taxes on Exported Products (RoDTEP) Scheme:

- The RoDTEP scheme, introduced to replace the Merchandise Export from India Scheme (MEIS), has been notified by the Government of India, outlining rates and norms to support exporters.
- **Objective:** To refund embedded central, state, and local duties or taxes that were not previously rebated, addressing the non-compliance issues with the World Trade Organization (WTO) rules.

Scope:

- Covers 8,555 tariff lines, constituting around 75% of traded items and 65% of India's exports.
- Budgetary allocation of ₹12,454 crore for the fiscal year 2021-22.

Zero Rating of Exports:

- Aims to achieve zero rating of exports by ensuring that domestic taxes are not exported.

Refund Mechanism:

- Refunds encompass all taxes, including those levied by states and local bodies.
- Refund rates, considered WTO-compliant, range from 0.5% to 4.3% of the Free On

Board (FOB) value of outbound consignments.

Rate Variation:

- Rates vary based on the product category. For example:
- Lowest rates for items like chocolates, toffees, and sugar confectionery.
- Highest rates for yarns and fibers.
- Exclusion of certain sectors like steel, pharma, and chemicals.

International Standards and Automatic Refunds:

- **Enables Indian exporters to meet international standards for exports.**
- **Provides affordable testing and certification within the country, reducing dependence on international organizations.**
- **Facilitates automatic tax assessment and refunds for GST, streamlining the process for exporters.**
- **The RoDTEP scheme aligns with India's efforts to facilitate a conducive environment for exporters, promoting economic growth and enhancing the country's position in the global market.**

Topic 5. DIRECT TAX-GDP RATIO ROSE TO 15-YEAR HIGH IN FY23, TAX BUOYANCY DIPPED

Important for the subject: Economy

Direct tax-to-GDP ratio, which reflects the share of taxes in the overall output generated in the country, rose to a **15-year high of 6.11 per cent** in the financial year 2022-23.

- The data was released by the **Central Board of Direct Taxes (CBDT)** under the **Ministry of Finance**.
- As per CBDT, a **taxpayer is a person who either has filed a return of income for the relevant assessment year (AY) or in whose case tax has been deducted at source in the relevant financial year but the taxpayer has not filed the return of income.**

Key findings by the ministry

Tax Buoyancy:

- The **tax buoyancy i.e. the growth rate of taxes in relation to the economy's nominal growth rate** declined to **1.18 in 2022-23 from 2.52 in 2021-22** and 1.29 in the pre-Covid year of 2018-19.

- Tax buoyancy had improved to **2.52 in 2021-22** due to a low base effect.
- Tax buoyancy inched lower to 1.18 in 2022-23 even as the growth rate for taxes was recorded at 17.79 per cent in 2022-23, higher than 15.11 per cent nominal GDP growth.

Tax collections:

- **Net direct tax collections “increased by 160.52 per cent** to Rs 16.63 lakh crore in FY 2022-23 from Rs 6.39 lakh crore in FY 2013-14”.
- **Gross direct tax collections stood at Rs 19.7 lakh crore** in FY 2022-23 which is a rise of 173.3 per cent from Rs 7.21 lakh crore in FY 2013-14.
- On a year-on-year basis, **net direct tax collections increased by 17.8 per cent**, while gross direct tax collections rose by 20.5 per cent.

Number of Taxpayers:

- While the number of persons filing income tax returns increased to **7.4 crore in the financial year 2022-23 (6.3 percent rise from FY22)**, out of which 6.97 crore were individuals.
- In the previous financial year 2021-22, while tax return filers stood at **6.96 crore (with 6.55 crore individuals)**, overall taxpayers stood at **9.37 crore** —
- a gap of 2.41 crore — showing that a significant number of taxpayers are getting taxed through measures such as TDS but are not filing income tax returns.

State Wise tax collections:

- Among states and union territories, **Maharashtra** accounted for 36.4 per cent (Rs 6.05 lakh crore) of the overall direct tax collections in the country in the financial year 2022-23, followed by **Delhi** at 13.3 per cent (Rs 2.22 lakh crore), **Karnataka** at 12.5 per cent (Rs 2.08 lakh crore) and **Tamil Nadu** at 6.4 per cent (Rs 1.07 lakh crore).
- These four states accounted for 68.6 per cent of the overall direct tax collections in FY23.

Cost of tax collection:

- The **cost of tax collection which indicates the expenditure on tax collection as a proportion of the total tax collections** has inched lower to 0.51 percent in FY23 (the lowest level since 2000-01), but it increased in absolute terms to Rs 8,452 crore which is the highest level since 2000-01.

Topic 6. INDIAN BOURSES NOW FOURTH-LARGEST WITH COMBINED STOCK VALUE OF \$4.33 TRILLION

Important for the subject: Economy

The Indian stock market surpassed Hong Kong to become the **fourth largest equity market** for the first time even as domestic indices fell 1.5 per cent on Tuesday.

According to a **Bloomberg report**, the **combined value of listed shares on Indian exchanges stood at \$4.33 trillion on Monday** compared to \$4.29 trillion for Hong Kong.

- The US, China and Japan are the top stock markets in the world.
- **BSE's market capitalisation** was Rs 366 lakh crore on Tuesday.
- It is a testament to the **nation's economic fortitude and signals a promising trajectory** for investors navigating the diverse and vibrant landscape of the Indian stock market

Fall of Hong Kong:

- Hong Kong's fall was mainly due to an **eroding China appeal**.
- It lost nearly **36 per cent from the peak level**.
- A significant trend in global economic growth now is the underperformance of China and the outperformance of India, according to analysts.
- As the **Chinese stocks listed in Hong Kong have crashed**, the Hang Seng index is near a 19-year low.

Various other Benchmark indexes:

- Japan's Nikkei
- South Korea's Kosp

About Indian stocks:

- Indian stock markets **rallied by 20 per cent in 2023** amid higher foreign inflows and growth prospects.
- This momentous milestone underscores the resilience and dynamism of India's economic landscape.
- As the nation forges ahead, **investor confidence and opportunities converge, propelling the stock market to new heights**.

India's Benchmark indexes:

- India's benchmark indices **BSE Sensex and Nifty50** ended Tuesday's session in red with **1.47 per cent and 1.54 percent loss** at 70,370.55 and 21,238.80 marks

respectively.

- The Rupee weakens 9 paise to close at 83.16 against the dollar. The Indian currency had closed at 83.06 against the American currency last week.

About BSE:

- BSE Limited, also known as the **Bombay Stock Exchange (BSE)**, is an Indian stock exchange.
- It is located on **Dalal Street in Mumbai**.
- It was established in **1875** by cotton merchant **Premchand Roychand**.
- It is the **oldest stock exchange in Asia**, and also the tenth oldest in the world.
- The BSE is the **world's 8th largest stock exchange**.

About NSE:

- **National Stock Exchange of India Limited** is one of the **leading stock exchanges in India**.
- It is based in **Mumbai**.
- The National Stock Exchange of India Limited (NSE) is India's **largest financial market**.
- It was incorporated in **1992**.
- The NSE has developed into a sophisticated, electronic market, which ranked fourth in the world by equity trading volume.
- NSE is under the ownership of various financial institutions such as banks and insurance companies.

EMERGE Platform:

- **EMERGE is a credible, efficient market place** aimed at the convergence of investors and emerging corporates in the country.
- It offers **opportunities to informed investors** to invest in emerging businesses with exciting growth plans
- It helps **SMEs and startups** to connect with **investors for funding**.

About Nifty 50

- The **NIFTY 50 is a benchmark Indian stock market index** that represents the weighted average of 50 of the largest Indian companies listed on the National Stock Exchange.
- **Nifty 50 is owned and managed by NSE Indices**, which is a **wholly owned subsidiary of the NSE Strategic Investment Corporation Limited**.

Topic 7. INCOME INEQUALITY TRENDS IN INDIA

Important for the subject: Economy

The report from the State Bank of India (SBI) suggests a **significant fall in income inequality in India over the last decade**, as measured by the Gini coefficient.

- The **Gini coefficient dropped from 0.472 in 2014-15 to 0.402 in 2022-23**, indicating a substantial reduction in inequality.
- However, there are nuances to this analysis, especially **considering it relies on taxpayer data, and nearly 80% of income earners, earning less than ₹2.5 lakh per annum, fall outside the tax net.**
- A more detailed analysis using data from the 2017-18 and 2022-23 rounds of the Periodic Labour Force Survey (PLFS) **reveals some important trends:**

Gini Coefficient Changes:

- The Gini coefficient **declined from 0.4297 in 2017-18 to 0.4197 in 2022-23.**
- For different forms of employment, the **Gini coefficient fell for regular wage and casual wage workers but rose for self-employed workers**, although the changes were minimal.
- The Gini for self-employed workers increased by 1.5%, **while regular and casual wage workers experienced falls of 1.7% and 4.8%, respectively.**

Polarization of Incomes:

- While the Gini coefficient suggests an **overall reduction in inequality, there is evidence of income polarization.**
- **Incomes of the top 10% grew faster than the bottom 30%**, particularly among self-employed workers.
- The top decile's average income grew at an annual rate of around 7.23%, **while the bottom decile saw the slowest income growth at only around 1.67%.**

Changes in 90/10 Ratio:

- The 90/10 ratio, which measures the **ratio of incomes of the top 10% to the bottom 10%**, **increased from 6.7 in 2017-18 to 6.9 in 2022-23.**
- The 90/10 ratio fell for wage earners but **increased significantly for self-employed individuals.**

Polarization Among Different Forms of Work:

- Polarization of incomes is seen prominently among self-employed workers, with the **income of the top 10% being 8.3 times that of the bottom 10% in 2022-23, a significant increase from 2017-18.**

Explanatory Factors:

- The rise in women's labour force participation, often in low-paid, part-time self-employed work, may contribute to the increase in income gaps among self-employed individuals.
- While taxpayer data may not reflect this polarization as the bottom 10% do not earn enough to be included in the tax net, it remains to be seen how future economic growth impacts this divergence.
- In summary, the reduction in the Gini coefficient hides a process of income polarization, particularly among self-employed workers, indicating the need for a nuanced understanding of income distribution trends in India

About Periodic Labour Force Survey (PLFS):

Objective:

- To estimate key employment and unemployment indicators (WPR, LFPR, UR) in a short time interval (three months) for urban areas in the 'Current Weekly Status' (CWS).
- To estimate employment and unemployment indicators in both 'Usual Status' and CWS annually for both rural and urban areas.

Initiation:

- Conducted by the **National Statistical Office (NSO) under the Ministry of Statistics and Programme Implementation (MoSPI).**
- Launched in April 2017.

Significance:

- Aims to **measure the employment and unemployment situation** in India.
- The Periodic Labour Force Survey provides **crucial insights into India's employment landscape, helping policymakers make informed decisions based on key indicator.**

Key Terms in Labour Force Survey:

Labour Force Participation Rate (LFPR):

- Percentage of the working-age population (15 years and above) **either employed or**

unemployed but actively seeking employment.

Worker Population Ratio (WPR):

- Percentage of employed persons in the population.

Unemployment Rate (UR):

- Percentage of unemployed persons among those in the labour force.

Activity Status:

- Determines a **person's status based on activities pursued** during a specified reference period.

Types of Activity Status:

Principal Activity Status (PS):

- Criteria: Long time spent on a specific activity during the last 365 days.

Subsidiary Economic Activity Status (SS):

- Criteria: In addition to the principal status, **performing economic activity for 30 days or more in the last 365 days.**

Current Weekly Status (CWS):

- **Activity status determined based on the last 7 days** preceding the survey date.

Lorenz Curve and Gini Coefficient:

Lorenz Curve:

- Graphical representation of wealth distribution.
- Developed by Max Lorenz in 1906.
- Illustrates the proportion of income earned by a given percentage of the population.
- **45° angle represents perfect income equality, deviation indicates actual distribution.**

Gini Coefficient:

- Derived from Lorenz Curve, **serves as an economic development indicator.**
- **Measures income equality** in a population.
- **Scale:** 0 (perfect equality) to 1 (perfect inequality).
- Interpretation: **Zero signifies equal income for all, while one implies a single individual receiving all income.**

90/10 Ratio:

Definition:

- The 90/10 ratio is a **measure of income inequality that calculates the ratio of the income received by the top 10% of the population to that received by the bottom 10%.**

Interpretation:

- A rising 90/10 ratio indicates a **widening income gap between the wealthiest and the poorest segments** of the population.

Significance:

- It provides insights into the distribution of income, **especially focusing on the extremes – the highest and lowest earners.**

Analysis:

- Economists use the 90/10 ratio to **study trends in income inequality over time**, helping to understand socio-economic dynamics.
- Governments and policymakers consider the 90/10 ratio **when formulating policies to address economic disparities and promote more inclusive growth.**
- Comparing the 90/10 ratio across different regions or countries offers a comparative analysis of income distribution patterns.
- Changes in the 90/10 ratio can reflect the **effectiveness of social and economic policies in creating a fairer distribution of wealth.**

Government's Employment Initiatives:**SMILE (Support for Marginalized Individuals for Livelihood and Enterprise):**

- Aims to provide support and opportunities for marginalized individuals in livelihood and entrepreneurship.

PM-DAKSH (Pradhan Mantri Dakshta Aur Kushalta Sampann Hitgrahi):

- Government initiative focusing on skill development and empowerment.

MGNREGA (Mahatma Gandhi National Rural Employment Guarantee Act):

- Provides rural employment and livelihood opportunities, ensuring at least 100 days of wage employment.

PMKVY (Pradhan Mantri Kaushal Vikas Yojana):

- Aims to enhance the employability of youth through skill development.

Start-Up India Scheme:

- Encourages and supports startups, fostering entrepreneurship and job creation.

Rozgar Mela:

- Job fairs facilitating direct interaction between employers and job seekers.

Types of Unemployment:**Disguised Unemployment:**

- More people employed than needed, often found in agricultural and unorganized sectors.

Seasonal Unemployment:

- Occurs during specific seasons, affecting jobs like agricultural labor that are not year-round.

Structural Unemployment:

- Arises from a mismatch between available jobs and workers' skills.

Cyclical Unemployment:

- Linked to economic cycles, rising during recessions and declining in growth periods.

Technological Unemployment:

- Job losses due to technological changes, impacting India significantly with automation.

Frictional Unemployment:

- Involves a time lag during job search or switching, often voluntary and not due to shortages.

Vulnerable Employment:

- Informal, contract-less work without legal protection, often leading to unrecorded employment.

Topic 8. THERE IS SERIOUS CONCERN ABOUT WHOLE CONSTRUCT OF SAFE HARBOUR***Important for the subject: Economy***

Ashwini Vaishnav, the Minister for Electronics and Information Technology, discussed significant aspects of the Telecommunications Act, 2023.

Safe Harbour

- The Safe Harbour provisions designed explicitly for intermediaries in India are outlined in Section 79 of the Information Technology Act, 2000 ('IT Act') and its

corresponding Rules.

- An ‘Intermediary’ is essentially a facilitator that helps in transmitting content between the creator and the consumer. These intermediaries play a crucial role in handling all kinds of information – including from harmless to potentially harmful, as they navigate through the vast spectrum of data available online.
- The continuous development of these Rules has shaped how intermediaries are protected and held accountable in the digital landscape.
- IT Act amendment 2008 (Avnish Bajaj vs. State (N.C.T.) Of Delhi) introduced a provision stating that intermediaries, which function merely as platforms for information transmission, would not be held liable for any offenses committed on their platform without their knowledge.
- In the case of Shreya Singhal v. Union of India 2015, SC clarified that intermediaries were not obligated to remove any material from their platform until and unless they received a court order directing them to do so.

Telecommunications Act, 2023

- **Structural Reforms:** Transition from a license permit regime to a calculated authorization system for telecom operations.
- **Spectrum Auction:** Following Supreme Court judgment, spectrum to be auctioned except for certain sectors like defense.
- **Spectrum Sharing and Harmonisation:** Provisions for sharing and harmonizing different spectrum bands.
- **Innovation and Research:** Introduction of ‘sandbox’ for academic experimentation with new technologies.
- **Right of Way Reform:** Empowerment of district judges to resolve disputes related to telecom infrastructure construction.
- **Digital Connectivity Expansion:** Target to triple digital connectivity, with a focus on integrating new technologies like 6G.

- **Dispute Resolution and Self reporting:** A four-tier structure for dispute resolution and provisions for telecom companies to self-report violations.
- **Universal Services Obligation Fund:** Expanded into Digital Bharat Nidhi to support research, development, and connectivity in underserved areas.
- **Interception Framework:** Adherence to the 1996 Supreme Court framework for lawful interception of communications.
- **Digital Governance and Policy OTT Regulation:** No specific provision to regulate OTT apps like Whats App; digital domains like fintech and medical electronics regulated by respective ministries.
- **Safe Harbour Concerns:** Global reevaluation of the safe harbour principle due to ubiquitous internet access and the need for accountability on social media platforms.
- **Biometric Authentication for Telecom Services:** Provision for biometric authentication (e.g. Aadhaar) for obtaining telecom services, emphasizing the importance of KYC.
- **International Collaboration:** MOUs signed with various countries for sharing India Stack technologies, reflecting India's democratic and transparent standards.

Topic 9. ZEE ASKS SONY TO WITHDRAW TERMINATION OF MERGER, URGES NCLT TO ACT

Important for the subject: Economy

Zee Entertainment Enterprises Ltd. (ZEEL) asked Culver Max Entertainment Pvt. Ltd. (formerly Sony Pictures Networks India Private Ltd.) (Culver Max) and Bangla Entertainment Pvt. Ltd. (BEPL) to immediately withdraw their termination of the Merger Cooperation Agreement (MCA) and confirm that they would perform their obligations to give effect to and implement the Merger Scheme that had been sanctioned by the National Company Law Tribunal.

National Company Law Tribunal (NCLT)

- It is a quasi-judicial authority incorporated for dealing with corporate disputes that are of civil nature arising under the Companies Act, 2013.
- Established: It was constituted on 1 June 2016 under the Companies Act, 2013.
- Committee: NCLT was formed based on the recommendation of the Balakrishna Eradi committee on law relating to the insolvency and the winding up of companies.
- Composition: The NCLT shall consist of a President and such number of Judicial and Technical Members as may be required.

Powers:

- It is not limited or bound by the rules laid down in the Code of Civil Procedure and is guided by the principles of natural justice, Important for the subject to the other provisions of this Act and of any rules that are made by the Central Government.
- The NCLT can enforce any order that it gives in the same manner as a court would enforce it.
- NCLT has the power to scrutinize its own orders. The tribunal has the power to regulate their own procedure.
- National Company Law Tribunal is the adjudicating authority for the insolvency resolution process of companies and limited liability partnerships under the Insolvency and Bankruptcy Code, 2016.

Topic 10. GOVT PERMITS DIRECT LISTING BY INDIAN FIRMS ON GIFT-IFSC'S INTERNATIONAL MARKETS***Important for the subject: Economy***

The government on Wednesday allowed direct listing of securities by public Indian companies on the international exchanges of **GIFT International Financial Services Centre (GIFT-IFSC)**.

- In July, **Finance Minister Nirmala Sitharaman** announced that the government had decided to enable **direct listing of listed and unlisted companies on the IFSC exchanges**.
- The move is expected to give Indian companies **access to cheaper foreign capital, boost foreign investment, and broaden investors**.
- **Direct listing of Indian companies' shares on GIFT City exchanges** is the first step in allowing them to list overseas.
- Until now **Indian companies** have not been permitted to list directly overseas markets, and instead use depository receipts i.e. **American Depository Receipts or Global Depository Receipts** to do so.

What is direct listing and IPO?**Direct Listing:**

- A direct listing is a process by which a company can go public by selling existing shares

instead of offering new ones.

- The process makes existing stock owned by employees and/or investors available for the public to buy and does not require underwriters or a lock-up period.

IPO:

- An initial public offering (IPO) or stock launch is a public offering in which shares of a company are sold to institutional investors and usually also to retail (individual) investors.
- An IPO is typically underwritten by one or more investment banks, who also arrange for the shares to be listed on one or more stock exchanges.

Amendments made:

- The **Department of Economic Affairs of the Finance Ministry** has amended **Foreign Exchange Management (Non-debt Instruments) Rules, 2019**, and notified the **Direct Listing of Equity Shares of Companies Incorporated in India** on International Exchanges Scheme.
- The **Ministry of Corporate Affairs (MCA)** has issued **Companies (Listing of Equity Shares in Permissible Jurisdictions) Rules, 2024**.
- This will provide an overarching regulatory framework to enable public Indian companies to issue and list their shares in permitted international exchanges.

Benefits of the decision:

- **Public Indian companies** will have the flexibility to access both markets—domestic for raising capital in rupees and international market at IFSC for raising capital in foreign currency from the global investors.
- This initiative will particularly benefit Indian companies going global and having ambitions to look at opportunities for expanding their presence in other markets.
- It is also expected to provide a boost to the capital market ecosystem at **GIFT IFSC by provision of new investment opportunities for investors, diversification of financial products and by enhancing liquidity**.
- The framework allows **unlisted public Indian companies** to list their shares on an international exchange.

About GIFT-IFSC:

- **GIFT (Gujarat International Finance Tec-City)** is located in **Gandhinagar** is India's

first International Financial Services Centre.

- GIFT-IFSC is set up with the **objective of connecting India with global opportunities** while helping the Indian economy connect with the global financial system and facilitating seamless flow of global capital into India.
- **IFSCs are intended to provide Indian corporates** with easier access to global financial markets, and to complement and **promote further development of financial markets in India.**
- The international stock exchanges at GIFT-IFSC—India International Exchange and **NSE International Exchange**—are currently prescribed as the permitted stock exchanges.
- These exchanges are under the regulatory supervision of the **International Financial Services Centres Authority (IFSCA).**

About International Financial Services Centres Authority(IFSCA):

- The (IFSCA) was established on **April 27, 2020** under the **International Financial Services Centres Authority Act, 2019.**
- It is a **regulatory body established by the Government of India. It is headquartered at GIFT City, Gandhinagar in Gujarat.**
- The primary objective of IFSCA is to **develop and regulate the financial products, financial services, and financial institutions in the IFSCs to promote ease of doing business.**
- IFSCA has a **broad regulatory scope covering various financial services, institutions, and activities within the IFSCs.**
- **Prior to the establishment of IFSCA, the domestic financial regulators, namely, RBI, SEBI, PFRDA and IRDAI regulated the business in IFSC.**

Topic 11. CAPEX-LED GROWTH STRATEGY FROM INDUSTRY CHAMBERS' RECOMMENDATIONS

Important for the subject: Economy

Capex-led Growth Strategy:

Suggested maintaining a **capex-led growth strategy in the upcoming Vote on Account to sustain the ongoing economic growth momentum.**

Urged an increase of at least 20% in the Centre's capital expenditure to ₹12 lakh crore.

Central Support to State Capex:

- Proposed **expanding Central support to State capex through interest-free 50-year**

loans, recommending an increase by about ₹30,000 crore to ₹1.6 lakh crore.

Corporate Tax Rate:

- Advocated for **retaining the corporate tax rate at the current level for tax certainty.**
- Appreciated the government's efforts to **maintain stability in tax rates despite economic and political challenges.**

Buyback Tax (BBT):

- Recommended **exempting buyback tax (BBT) for listed shares using the open market through the stock exchange method.**
- Proposed that the exemption under section 10(34A) should not be applicable, and transactions should continue to be Important for the subject to capital gains tax.

Extension of Sunset Date for Concessional Tax Rate:

- Advocated for **extending the sunset clause for the concessional tax rate of 15% under Section 115BAB by one year**, from March 31, 2024, to March 31, 2025.
- Suggested that this extension would encourage more investment in the manufacturing sector and exports.

Recommendations by FICCI:

Focus on Public Capex:

- Emphasized the **importance of public capex (on physical, social, and digital infrastructure) in the upcoming Budget.**
- Urged the government to lay a major thrust on public capex considering the current global developments and associated challenges.

Buyback Tax (BBT):

- Recommended **exempting BBT for listed shares involved in buybacks** using the open market through the stock exchange method.
- Stated that the justification for BBT levy does not exist in such cases where the promoter group cannot participate in the buyback.

Extension of Sunset Date for Concessional Tax Rate:

- Proposed **extending the concessional tax regime for manufacturing operations for at least five years.**
- Argued that extending the tax regime **would provide stability and certainty, boosting the confidence of investors considering investments in India.**

Sunset clause

- A "sunset clause" refers to a **provision in a law or regulation that specifies a**

termination date or conditions under which the law or regulation will expire or no longer be in effect.

- Essentially, it sets a deadline for the validity or applicability of certain provisions.
- In the context of taxation or economic policies, a sunset clause may be included to provide a temporary benefit, concession, or special treatment.
- After the specified period or under certain conditions, the benefits or provisions automatically come to an end unless the government decides to extend or renew them.
- For example, in the case of tax incentives for a specific industry introduced to encourage investment, the sunset clause might determine that these incentives will expire after a certain number of years unless the government decides to extend them.
- This approach allows for periodic reviews and adjustments to policies based on evolving economic conditions or policy priorities.

“Buyback Tax” (BBT)

- The term “Buyback Tax” (BBT) generally refers to the tax implications related to share buybacks undertaken by companies.
- A share buyback, also known as a stock repurchase, occurs when a company repurchases its own outstanding shares from the open market or directly from shareholders.
- **Tax on Distributed Income:** In the Indian context, the Buyback Tax is essentially a tax on distributed income by the company undertaking the buyback. It is applicable under Section 115QA of the Income Tax Act.
- **Introduced to Curb Tax Avoidance:** The Buyback Tax was introduced to prevent tax avoidance by companies through the buyback route. It ensures that companies cannot use buybacks as a tax-efficient means of returning money to shareholders, especially in comparison to dividends.
- **Applicability:** The tax is levied on the distributed income arising from the buyback of unlisted shares by a company. It is not applicable to buybacks through stock exchanges for listed shares.

- **Tax Rate:** The distributed income through buyback is taxed at a specified rate, and the tax is paid by the company. The tax rate and other details are Important for the subject to the provisions of the Income Tax Act prevailing at the time.

Interim Budget, and Vote on Account:

Constitutional Mandate (Article 266):

- Article 266 of the Constitution of India mandates that **parliamentary approval is necessary to withdraw money from the Consolidated Fund of India.**

Legal Requirement (Article 114 (3)):

- Article 114 (3) of the Constitution specifies that **no amount can be withdrawn from the Consolidated Fund without the enactment of a law, i.e., an appropriation bill.**

Vote on Account:

- A vote on account is a **parliamentary approval sought by the government to meet expenditure, such as salaries and ongoing programs, without altering the taxation structure.**
- This is done until a new government presents a revised full Budget for the entire fiscal year. **It allows the new government to signal its policy direction through the subsequent full Budget presentation.**

Difference with Full Budget:

- While a full Budget addresses both expenditure and revenue, **a vote on account deals exclusively with the expenditure side of the government's budget.**
- **The vote on account is typically valid for two months, while a full budget covers the entire fiscal year.**
- As a convention, **a vote-on-account is treated as a formal matter and passed by the Lok Sabha without extensive discussion.** Conversely, **passing a full budget involves detailed discussions and voting on demands for grants.**

Interim Budget Distinction:

Scope of an Interim Budget:

- An Interim Budget is not equivalent to a 'Vote on Account.' **While a vote on account addresses only the expenditure side, an Interim Budget encompasses a complete set of accounts, covering both expenditure and receipts.**

Financial Statement Similarity:

- An Interim Budget provides a comprehensive financial statement, much like a full budget, offering details on both expenditure and revenue.
- Unlike a vote on account, an Interim Budget considers both the spending and revenue aspects, providing a broader financial overview.

Topic 12. RBI TO INFUSE ₹2.50 LAKH CRORE LIQUIDITY***Important for the subject: Economy***

The Reserve Bank of India (RBI) will inject liquidity amounting to ₹2.50 lakh crore via a 15-day variable rate repo (VRR) auction.

Liquidity Scenario:

The overall funds deficit in the banking system widened to ₹3.34 lakh crore as of January 23, compared to ₹1.29 lakh crore on January 1.

Centre's Cash Balances:

- Despite the Centre accumulating substantial cash balances with the RBI from GST and advance tax, liquidity pressure in the banking system persists.

Factors Contributing to Pressure:

- Banks are facing liquidity challenges due to outflows in the previous month related to GST payments and advance tax, while non-banking finance companies offer competitive returns.

RBI's Liquidity Management:

- The RBI has been addressing liquidity concerns through various measures, including VRR auctions and long-term repo operations during the Covid-19 period.

Competition with NBFCs:

- Banks are encountering competition from non-banking finance companies as NCDs floated by NBFCs offer relatively higher returns compared to bank term deposit rates.

Investor Behavior:

- Retail investors are shifting from bank deposits to invest in mutual funds or equity markets, drawn by the bull phase in the stock market and IPO opportunities.

Expert Opinion:

- Experts suggest that liquidity pressure could ease if the government utilizes the accumulated balances with the RBI. Additionally, the RBI's absorption of foreign

portfolio investors' dollars could enhance liquidity.

RBI's Statement:

- RBI, in a December Monetary Policy statement, **attributed liquidity tightening to factors like higher currency leakage, government cash balances, and RBI market operations.**

MPC Stance Change:

- India Ratings and Research (IndRa) opines that **sustained tightness in banking system liquidity could impact borrowers. It suggests a change in the Monetary Policy stance to 'neutral' to maintain consistency in stance and action.**

Variable Reverse Repo Rate (VRRR):

Introduction:

- VRRR is the rate at which the **Reserve Bank of India (RBI)** borrows money from banks for a variable period, typically ranging from 14 days to 56 days.

Liquidity Management Tool:

- It serves as a tool for the **RBI to manage liquidity in the banking system and influence short-term interest rates.**

Auction Process:

- Regular VRRR auctions are conducted by the RBI to **absorb excess liquidity from banks.**
- Banks participate by **bidding for the amount and specifying the interest rate at which they are willing to lend money** to the RBI.
- The RBI determines the cut-off rate and the allotted amount based on received bids.

Interest Payment:

- Banks that bid at or above the cut-off rate are allotted funds, and the **RBI pays interest to these banks for lending money.**

Market Forces Determination:

- The **interest rate paid is influenced by market forces, particularly the demand and supply dynamics of liquidity.**

Implications of VRRR Auctions

Money Market Impact:

- Affects overnight money market rates like call money, CBLO, and market repo rates.
- **VRRR rates' increase leads to higher money market rates, reflecting tighter**

liquidity conditions.

Bond Market Impact:

- Influences bond yields, especially in the short end of the yield curve.
- Higher VRRR rates result in increased bond yields, indicating higher borrowing costs and reduced demand for bonds.

Banking Sector Influence:

- **Affects the profitability and liquidity management of banks.**
- **Higher VRRR rates mean banks earn more on excess funds parked with the RBI.**
- Balancing liquidity needs and returns becomes crucial for banks participating in VRRR auctions.

Variable Repo Rate:

Introduction:

- Similar to Variable Reverse Repo Rate, the **Variable Repo Rate is employed when the RBI aims to infuse liquidity into the economy.**

Low Interest Rates Scenario:

- **Used when banks are reluctant to borrow from the RBI at Repo Rates** due to existing lower interest rates in the economy.

Market-Determined Rate:

- Banks are allowed to **borrow at a rate determined by the market, usually lower than the Repo Rate, but not less than the Reverse Repo Rate.**

Duration of Borrowing:

- The **borrowing period under the Variable Repo Rate is more than one day**, providing flexibility to banks.

Liquidity Infusion Strategy:

- RBI adopts this strategy to **facilitate liquidity infusion even when banks may not find borrowing at standard Repo Rates attractive.**

Repo Normalisation in India:

Repo and Reverse Repo as Control Tools:

- The Reserve Bank of India (RBI) uses Repurchase Agreement (Repo) and Reverse Repo Agreement to manage money supply.

Quantitative and Qualitative Control:

- Central banks employ quantitative or qualitative tools to control money supply.

Repo Rate Definition:

- Repo rate is the rate at which the RBI lends money to commercial banks in case of fund shortfalls, involving the purchase of securities.

Reverse Repo Rate:

- It is the interest rate paid by the RBI to commercial banks when they park excess liquidity with the central bank, serving as the opposite of the repo rate.

Repo Rate as Benchmark:

- Under normal economic growth, the repo rate becomes the benchmark interest rate, influencing various interest rates in the economy.

Shift to Reverse Repo Rate:

- When excess liquidity is pumped into the market without an uptake in fresh loans, the focus shifts from the repo rate to the reverse repo rate.

Reverse Repo Normalisation:

- Implies an increase in reverse repo rates, possibly in stages, aiming to curb inflation.

RBI's Expected Action:

- RBI may raise the reverse repo rate before the repo rate to narrow the gap between the two rates.

Inflation Control and Impact:

- The normalisation process aims to curb inflation, reducing excess liquidity and leading to higher interest rates across the economy.
- **Monetary Policy Normalisation:** The RBI adjusts the total money in the economy for smooth functioning, employing loose or tight monetary policies.
- **Loose Monetary Policy:** Involves injecting liquidity and lowering interest rates to stimulate economic activity, encouraging consumption and production.
- **Tight Monetary Policy:** As a countermeasure, it includes raising interest rates and withdrawing liquidity when a loose policy becomes counterproductive, aiming for policy normalisation.

Topic 13. WHAT ARE THE RBI'S GUIDELINES ON STATE 'GUARANTEES'?

Important for the subject: Economy

A **working group** constituted by the Reserve Bank of India (RBI) made certain recommendations to address issues relating to guarantees extended by State governments.

- The working group prescribed a uniform reporting framework for the guarantees extended (by State governments) and a uniform guarantee ceiling.
- As per the RBI, the implementation is “**expected to facilitate better fiscal management by State governments.**”

What Constitutes a ‘Guarantee’?

- A ‘guarantee’ is a **legal obligation for a State** to make payments and protect an investor/lender from the risk of default by a borrower.
- As per the **Indian Contracts Act, 1872**, it is a contract to “perform the promise, or discharge the liability, of a third person in case of his default”.
- The contract involves **three parties: the principal debtor, creditor, and surety**. The entity to whom the guarantee is given is the ‘**creditor**’,
- Defaulting entity on whose behalf the guarantee is given is called the ‘**principal debtor**’.
- The entity giving the guarantee (State governments in this context) is called the ‘**surety**’.

What is the Purpose of a ‘Guarantee’?

- Primarily, guarantees are resorted to in **three scenarios at the State level**:
- First, where a sovereign guarantee is a precondition for concessional loans from bilateral or multilateral agencies (to public sector enterprises);
- Second, to improve viability of projects or activities with the potential to provide significant social and economic benefits;
- Third, to enable public sector enterprises to raise resources at lower interest charges or on more favorable terms.
- State governments are often **required to sanction, and issue guarantees, on behalf of State-owned enterprises, cooperative institutions, urban local bodies and/or other State-governed entities, to respective lenders**.
- The latter could be commercial banks or other financial institutions. In return, the entities are required to pay a guarantee commission or fee to the governments.
- The RBI working group’s report notes that one of the reasons why the instrument has been widely used may be that an upfront cash payment is usually not required in case of guarantees.

Major Recommendations Made by the RBI's Working Group w.r.t. Guarantees:

Definition of Guarantee:

- The Working Group has suggested that the term **'guarantee'** should be used in a **broader sense** and include all instruments.
- Further, it must make any distinction between conditional or unconditional, or financial or performance guarantees in order to assess the fiscal risk.
- These are contingent liabilities that may crystallise later— in other words, present a potential risk in the future.

Guidelines for According Guarantees:

- The Working Group has recommended that government guarantees should not be used to obtain finance through State-owned entities.
- Additionally, they should not be allowed to create direct liability/de-facto liability on the State.
- It further recommends adherence to Government of India guidelines stipulating that guarantee be given only for the principal amount and normal interest component of the underlying loan.
- Furthermore, they must not be extended for external commercial borrowings, **must not be extended for more than 80% of the project loan.**
- Also, they must not be provided to private sector companies and institutions. Finally, appropriate preconditions such as period of guarantee must be specified.

Risk Determination, Fees, Ceiling:

- The Group suggested that States assign appropriate risk weights before extending guarantees. The categorisation could be high, medium or low risk.
- These must also consider past record of defaults. They must also disclose the methodology of assigning.
- The report argues that should a guarantee be required to be invoked; it could lead to significant fiscal stress on the state government.
- To manage the potential stress, it **proposes a ceiling at 5% of Revenue Receipts or 0.5% of Gross State Domestic Product (GSDP) — whichever is less.**

Disclosures & Honoring Commitments:

- The Working Group has recommended that the RBI may consider advising banks/NBFCs to disclose the credit extended to State-owned entities, backed by State-government guarantees.

- It has also sought a proper database capturing all extended guarantees, suggesting that a unit may be set up at the **State level to track the same** – alongside its compilation and consolidation.
- W.r.t. honoring commitments, the report recognises that **delays may affect the sanctity of issued guarantees**. Thus, it can result in reputational risk as well as legal risk for the State government.
- The report seeks that States must be wary before extending any fresh finance to entities that have failed in honoring commitments before.

Topic 14. CENTRE STARTS SURVEY ON PARTICIPATION OF WOMEN IN WORKFORCE

Important for the subject: Economy

Union Ministries of Labour & Employment and Ministry of Women & Child Development launched a joint survey.

About the Survey:

- The Survey focuses on **evaluating women friendly practices**.
- It includes measures like running creches, ensuring equal pay for equal work.
- Based on the latest PLFS data indicating a rise in **women's participation from 23.3% in 2017-18 to 37% in 2022-23**.
- It questions cover company policies on **internal complaints committees, sexual harassment prevention, childcare facilities, equal pay, and flexible working hours**.
- The survey ensures **confidentiality, collecting only gender-related information without individual identification**. Company details are also requested.

About Periodic Labour Force Survey

- The NSO, under the Ministry of Statistics and Programme Implementation (MoSPI), conducts the PLFS survey to gauge India's employment and unemployment landscape.
- Launched in April 2017, the survey focuses on estimating key indicators like Worker Population Ratio, Labour Force Participation Rate, and Unemployment Rate.
- PLFS provides timely insights into the employment scenario, particularly in urban areas.

Topic 15. ZEE-SONY MERGER LEGAL PROCEEDINGS

Important for the subject: Economy

Two legal proceedings initiated regarding the failed Zee-Sony merger deal.

Zee Shareholder's Case:

- **Mad Men Ventures, a Zee shareholder, filed a case at the National Company Law Tribunal (NCLT).**
- Seeks a merger between Zee and Sony.
- NCLT has asked for a response from Sony within three weeks.

Singapore Arbitration International Centre (SAIC):

- **Dispute over the failed merger to be heard at SAIC in an emergency proceeding.**
- Separate legal proceedings ongoing in SAIC.

Multiple Legal Fronts:

- Three separate legal proceedings underway.
- Zee plans to file cases at NCLT and SAIC, claiming **default by Culver Max and Bangla Entertainment (Sony) in implementing the merger scheme sanctioned by NCLT.**
- Zee alleges that **Culver Max and Bangla Entertainment (Sony) failed in their obligation to give effect to the NCLT-sanctioned merger scheme.**

Mad Men Ventures' Intervention:

- Mad Men Ventures opens a third legal front, filing a case at NCLT.
- NCLT hearing set for March 12.
- Emergency proceeding at SAIC scheduled for Wednesday.
- **The failed \$10 billion merger has led to legal complexities and disputes.**

Key Points on Sony-Zee Merger Deal Approval:**NCLT Approval:**

- **The National Company Law Tribunal (NCLT) approves the merger of Zee Entertainment Enterprises with Culver Max Entertainment (formerly Sony Pictures Networks India).**
- Clearing the way for the **creation of the country's largest media company.**

Background of Sony-Zee Merger:

- Merger initiated in 2021 between Sony Pictures Networks India and ZEEL.
- Scheme involves the **combination of linear networks, digital assets, and production operations.**
- Sony to **indirectly hold 50.86% of the combined company.**

NCLT Order Challenge:

- NCLT directed stock exchanges (NSE and BSE) to reconsider their prior approvals for the merger.
- ZEEL challenged the order, **claiming insufficient opportunity to present its side and questioning NCLT's jurisdiction over non-compete issues.**
- NCLAT set aside the NCLT order in May 2023.

NCLT Decision Summary:

- NCLT clears Zee-Sony deal and dismisses objections.
- **Marks a significant step toward the creation of a \$10-billion entertainment giant.**

Market Scenario Post-Merger:

- The merger creates the country's largest media and entertainment company with standalone revenues of \$2 billion.
- Combined entity owns over 70 TV channels, two video streaming services (Zee5 and SonyLiv), and two film studios (Zee Studios and Sony Pictures Films India).
- Emerges as the largest TV network company with a 26% market share.
- Analysts **predict the merger to result in a \$10-billion media giant**

Arbitration:

- **Arbitration is a form of alternative dispute resolution where parties submit their disputes to an impartial third party, the arbitrator, for a binding decision.**
- **Voluntary Process:** Unlike court litigation, **arbitration is usually voluntary and arises from an agreement between the parties.**
- **Arbitration Agreement:** The parties include an arbitration clause in their contract, specifying the rules, seat, and other details of the arbitration process.
- **Advantages:** Arbitration offers a quicker, more private, and potentially less costly resolution compared to traditional court proceedings.
- **Enforceability:** Arbitral awards are **generally enforceable internationally through conventions like the New York Convention.**

Arbitration & Conciliation Act, 1996 (India):

- **Overview:** The Arbitration & Conciliation Act, 1996 is **India's primary legislation governing arbitration and conciliation proceedings.**
- **Purpose:** It provides a **legal framework for the fair and efficient resolution of disputes** through arbitration and conciliation.

Key Features:

- Recognizes and enforces arbitral awards.
- Provides guidelines for the conduct of arbitral proceedings.
- Governs the appointment and powers of arbitrators.
- Enables parties to seek interim measures from courts.

SIAC (Singapore International Arbitration Centre):

- **Establishment:** SIAC is a **not-for-profit international arbitration organization** based in Singapore.
- **Administration:** It administers arbitrations under its own rules and the **United Nations Commission on International Trade Law (UNCITRAL) Arbitration Rules.**
- **Reputation:** SIAC is known for its **efficiency, neutrality, and adherence to international standards in dispute resolution.**
- **Popular Seat:** Singapore, where SIAC is based, is a **preferred seat for international arbitration due to its reputation for rule of law.**

Singapore as an Arbitration Hub:

- Foreign investors prefer Singapore **for arbitration to avoid Indian court complexities.**
- Singapore is viewed as a **neutral ground for dispute resolution with a reputation for fairness and efficiency.**
- The 2019 SIAC report notes **India as the top user of its arbitration seat, reflecting confidence in Singapore's arbitration process.**

International Arbitration in India:

- India established its international arbitration center in Mumbai.

UNCITRAL (United Nations Commission on International Trade Law):

- **Establishment:** UNCITRAL is a core legal body of the United Nations system, established in 1966.
- **Objective:** It aims to promote international trade by harmonizing and modernizing international trade law.

- **UNCITRAL Model Law:** UNCITRAL developed the Model Law on International Commercial Arbitration, a guide for countries in developing their national arbitration legislation.
- **Global Impact:** UNCITRAL's work has had a significant impact on the facilitation of international trade and commerce by promoting uniformity in legal frameworks.

National Company Law Appellate Tribunal (NCLAT):

- **Establishment:** NCLAT is a quasi-judicial body established under the Companies Act, 2013.
- **Year:** Established in 2016 with headquarters in New Delhi.
- **Appellate Authority:** Serves as an appellate authority hearing appeals against orders passed by the NCLT.
- **Hierarchy:** It is the second-highest forum for company law cases in India, following the Supreme Court.
- **Final Decisions:** Decisions of the NCLAT are final and binding on involved parties, with the option to challenge orders only in the Supreme Court.
- **Functions:** Empowered to hear appeals related to insolvency, bankruptcy, merger and acquisition, and company law matters. Also serves as the Appellate Tribunal for orders by the Competition Commission of India (CCI) and the National Financial Reporting Authority.

National Company Law Tribunal (NCLT):

- **Nature:** Quasi-judicial authority incorporated for handling corporate disputes of civil nature under the Companies Act.
- **Composition:** Led by a Judicial member (retired or serving HC Judge) and a Technical member from the Indian Corporate Law Service.

Primary Functions:

- Disposal of proceedings under the Companies Act, including arbitration, arrangements, compromise, reconstruction, and winding up of companies.
- Adjudicating Authority for insolvency proceedings under the Insolvency and Bankruptcy Code, 2016.
- Authority to dispose of cases pending before the Board for Industrial and Financial Reconstruction (BIFR) and those under the Sick Industrial Companies (Special Provisions) Act, 1985.
- Can take up cases pending before the Appellate Authority for Industrial and Financial Reconstruction.

Board for Industrial and Financial Reconstruction (BIFR):

- **Establishment:** BIFR was a quasi-judicial body in India established under the Sick Industrial Companies (Special Provisions) Act, 1985.
- **Objective:** Its primary purpose was to address and rehabilitate sick industrial companies in the country. A “sick industrial company” is one that incurs losses for an extended period and is unable to repay debts, jeopardizing its viability.
- **Repeal:** In 2016, the Government of India repealed the Sick Industrial Companies (Special Provisions) Act, 1985, and dissolved BIFR.
- **Transition:** The responsibility for handling issues of sick companies was shifted to the National Company Law Tribunal (NCLT) under the Insolvency and Bankruptcy Code, 2016.

Insolvency and Bankruptcy Code, 2016 (IBC):

- **Enactment:** IBC is a comprehensive legislation enacted by the Government of India to address and streamline the insolvency and bankruptcy process.
- **Objective:** Aims to provide a time-bound and efficient framework for the resolution of distressed companies and individuals unable to repay debts.
- **Responsibility Shift:** With the repeal of the Sick Industrial Companies Act, the IBC took over the role of addressing and resolving insolvency-related matters.

Topic 16. NATIONAL CONFERENCE ON STRATEGIC TRADE CONTROLS (NCSTC) HIGHLIGHTS:

Important for the subject: Economy

Organizers:

DGFT (Directorate General of Foreign Trade), Ministry of Commerce & Industry, in collaboration with the Ministry of External Affairs and other government agencies, conducted the NCSTC.

Format and Participation:

- NCSTC was organized in a new format with **larger international participation** and the involvement of various Indian government organizations, industry stakeholders, academia, and research institutions.
- The conference took place at **Vigyan Bhawan, New Delhi**.

India's Strategic Trade Control:

- India regulates the exports of **dual-use (industrial and military) goods, software, and**

technologies under the SCOMET (Special Chemicals, Organisms, Materials, Equipment, and Technologies) list.

- SCOMET list is notified by **DGFT under the Foreign Trade Policy**.

Objectives:

- The conference aimed to emphasize the importance of **effective strategic trade controls** and showcase India's legal and regulatory system.
- Focus on exchanging **best practices**, sharing information, and **preventing the proliferation of Weapons of Mass Destruction (WMD) and their delivery systems**.

Handbook Release:

- DGFT released a **Handbook on India's Strategic Trade Controls**, providing **clarity to the industry on SCOMET policy, application process, documentation requirements, FAQs, and authorization processes**.

Foreign Trade Policy 2023:

- Recognized the **critical role of India's Strategic Trade Control system and streamlined policies for ease of understanding and compliance** by the industry.
- Emphasizes **India's commitment to multilateral non-proliferation export control regimes and international conventions**.

Foreign Trade Policy (FTP) 2023 Overview:

Introduction:

- Launched by the Ministry of Commerce and Industry.
- Effective from April 1, 2023.

Export Target:

- Sets a **target of \$2 trillion for exports of goods and services by 2030**.

Aim of FTP 2023:

- Enhance competitiveness in global markets.
- Promote sustainable development.
- Make India a leader in key sectors.
- Leverage technology for export competitiveness.

Key Approach – 4 Pillars:

- Incentive to Remission.
- Export promotion through collaboration.

- Ease of doing business and reduction in transaction cost.
- Focus on Emerging Areas – E-Commerce, SCOMET policy.

Major Features:**Process Re-Engineering and Automation:**

- Focus on export promotion through automated IT systems.
- Simplifies access to export benefits, especially for MSMEs.

Towns of Export Excellence:

- Designation of new towns for priority access to export promotion funds.
- Boosts handlooms, handicrafts, and carpets exports.

Recognition of Exporters:

- Exporter firms recognized with 'status' based on performance.
- Promotes skilling and training for a skilled manpower pool.

Promoting Export from Districts:

- Partnerships with State governments for Districts as Export Hubs (DEH).
- Accelerates grassroots trade ecosystem development.

Streamlining SCOMET Policy:

- Emphasis on export control compliance for dual-use items.
- Enhances access to high-end goods and technologies.

Facilitating E-Commerce Exports:

- Intent and roadmap for e-commerce hubs.
- Addresses payment reconciliation, bookkeeping, returns policy.

EPCG Scheme Facilitation:

- Rationalization of the **Export Promotion of Capital Goods (EPCG) Scheme**.
- Addition of Green Technology products to reduce export obligations.

Advance Authorization Scheme (AAS):

- Extended to the export of the Apparel and Clothing sector.
- Promotes domestic manufacturing in the textile sector.

Merchanting Trade:

- Allows merchanting trade of restricted and prohibited items.
- Promotes financial centers as major merchanting hubs.

Amnesty Scheme:

- One-time Amnesty Scheme for exporters unable to meet obligations.
- Caps interest payable at 100% of exempted duties.

Previous Trade Policy (FTP 2015-20):

- Merged schemes into Merchandise Export from India Scheme (MEIS).
- Incentives for Special Economic Zones and Status Holders.

Introduced Quality Complaints and Trade Disputes resolution chapter.

- Mid-term review expanded MEIS and SEIS scope and extended validity of Duty Credit Schemes.

Export Control of Dual-Use Items –**Definition of Dual-Use Items:**

- Products, technologies, materials, or equipment with **both civilian and military applications.**
- **Primarily designed for civilian purposes but can be used for military or prohibited purposes.**

Examples:

- Precursor chemicals like sarin gas.
- Components such as centrifuges.

Regulation in India:

- DGFT prepares a **specialized SCOMET (speciality chemicals, organisms, materials, equipment, and technologies) list.**
- Regulation under **India's Foreign Trade Policy.**

Foreign Trade Policy Emphasis:

- Focus on expediting the SCOMET licensing process.
- **Ensures trade of sensitive and dual-use goods in compliance with international regimes.**
- **UNSCR 1540 (United Nations Security Council Resolution 1540):**

Purpose:

- Adopted in 2004 by the United Nations Security Council.
- Aims to **prevent the proliferation of weapons of mass destruction (WMDs) and their means of delivery.**

Focus Areas:

- **Requires all UN member states to implement and enforce measures to prevent the proliferation of WMDs.**
- **Emphasizes non-proliferation of nuclear, chemical, and biological weapons.**

Key Features:

- Calls on states to establish and enforce effective measures to control the proliferation of WMDs.
- Encourages **cooperation in areas of science, technology, and capacity-building.**

Monitoring and Reporting:

- Establishes a committee to monitor and facilitate the implementation of the resolution.
- **States are required to submit reports on their efforts to implement the resolution.**

Topic 17. 22 ‘VAIBHAV’ FELLOWS TO BUILD LONG-TERM RESEARCH SYNERGY***Important for the subject: Science and Technology***

The **Department of Science and Technology (DST)** in **India** announced the **first batch of fellows** for the **Vaibhav** scheme, aimed at attracting **Indian-origin scientists** from abroad for **short-term collaborations.**

- This initiative includes **twenty-two scientists**, primarily from **North American** and **European institutions** like the California Institute of Technology, the University of Oxford, the University of Michigan, the University of Geneva, the University of Waterloo, Canada, and the University of Oslo.
- These fellows will spend one to two months annually, for up to **three years**, at **Indian institutes** such as the Indian Institute of Science, the Indian Institutes of Technology, the Indian Institutes of Science Education and Research, and the Tata Institute of Fundamental Research.
- Two “**distinguished fellowships**” were awarded to **senior professors Arogyaswami Paulraj** from **Stanford University** and **Jitendra Malik** from the **University of**

California, Berkley.

VAIBHAV Fellowship Programme:

- The **Vaibhav** scheme, launched in **June 2023** following **Prime Minister Narendra Modi's** call to more closely involve the **Indian diaspora in India's** development, is similar to the **Visiting Advanced Joint Research Faculty (Vajra)** scheme initiated in **2018**.

Key Features of the VAIBHAV Fellowship Programme:

- The programme will focus on **18 identified knowledge verticals**, including **quantum technology, health, pharmaceuticals, electronics, agriculture, energy, computer sciences, and material sciences**, among others.
- **Eligibility:** The fellowship is open to outstanding scientists and technologists of **Indian origin (Non-resident Indians (NRI)/ Persons of Indian Origin (PIO)/Overseas Citizens of India (OCI)** who are actively engaged in research activities in their respective countries.
- Selected fellows will have the opportunity to work in collaboration with **Indian Higher Educational Institutions (HEIs), universities, and public-funded scientific institutions**.
- They may **spend up to two months per year, for a maximum of three years**, at an Indian institution of their choice.
- **Fellowship Grant:** **VAIBHAV fellows** will receive a **monthly fellowship grant of INR 4, 00, 000**, which will support their research activities during the collaboration period.
- **Travel, Accommodation, and Contingencies:** The fellowship will cover international and domestic travel expenses, accommodation, and contingencies, ensuring a conducive research environment for the fellows.

‘Visiting Advanced Joint Research Faculty’ (VAJRA) scheme- 2018:

- In a bid to bring together **Indian scientists abroad and India-based researchers for conducting joint research in India**, the **Department of Science and Technology (DST)** has launched a scheme named **‘Visiting Advanced Joint Research Faculty’ (VAJRA)**.

Features:

- The **Visiting Advanced Joint Research (Vajra) faculty** scheme is a dedicated programme for foreign scientists and academicians, with emphasis on non-resident Indians, persons of Indian origin and overseas citizens of India to work as adjunct faculty in the government-funded academic and research institutions.
- Under this scheme, scientists or senior researchers abroad – of Indian origin or otherwise

– can collaborate with faculties here.

- Under the scheme, foreign researchers would receive endowments at par with those in their own countries. The **endowments for faculties** would be **US \$15,000** in the **first month of residency** and **US \$10,000, for the remaining months**.
- The idea of the scheme is to bring the best of the world to India and conduct research here. The broad areas of research like energy, health, advance material and others would be promoted under the scheme.

Topic 18. INDIANS CONSUMING RICE AND WHEAT LOW IN FOOD VALUE, HIGH IN TOXINS: ICAR STUDY

Important for the subject: Science and Technology

A recent study led by scientists from the **Indian Council of Agricultural Research (ICAR)** suggests that the **nutritional value of rice and wheat** consumed in **India** has **decreased**.

Study findings:

- The **study found** that over the past **50 years**, the **concentration of essential nutrients like zinc and iron in rice and wheat** has **significantly decreased**.
- This decline is **attributed to** the focus of **breeding programs on developing high-yielding varieties for food security**, without considering **nutrient uptake** from the soil.
- Consequently, **modern cultivars** are **less efficient** in absorbing **nutrients like zinc and iron**.
- The study, an extension of **2021 research**, revealed that **high-yielding rice and wheat varieties** have **lost up to 45% of their food value** in the last **five decades**.
- This could lead to the **grains becoming impoverished for human consumption** by **2040**. Additionally, the study found a **dramatic increase in arsenic levels in rice**.
- The research highlights the **impact of the Green Revolution** on India's **nutritional security**.
- To address this issue, agricultural scientists are exploring **landraces and wild species of cultivated varieties**.
- The Indian government has launched a **bio-fortification project**, and **ICAR institutes have developed 142 bio-fortified varieties**. However, these varieties are not yet widely popularized or adopted by farmers.

What is biofortification?

- Biofortification is the **process of increasing the nutritional value of food crops** by

increasing the **density of vitamins and minerals** in a crop through either conventional plant breeding; agronomic practices or biotechnology.

- Examples of these vitamins and minerals that can be increased through biofortification include provitamin A Carotenoids, zinc and iron.

How does Biofortification differ from food fortification?

- Biofortification has the increased nutritional micronutrient content imbedded in the crop being grown.
- Food fortification increases the nutritional value of foods by adding trace amounts of micronutrients to foods during processing.

Topic 19. HOW PHYSICISTS ARE MAKING SENSE OF THE MYSTERY OF PULSAR GLITCHES

Important for the subject: Science and Technology

In 1969, two research groups reported an abrupt and brief increase in the rotation rate of a pulsar; this glitch remains to be explained 44 years on; to date, physicists have spotted more than 3,000 pulsars and around 700 such glitches, and are starting to get a sense of why they happen.

About Pulsars:

- Pulsars are **rapidly rotating neutron stars emitting intense beams of radiation**.
- **Formed from collapsed star cores**, their periodic signals, resembling lighthouse beams, result from charged particles' acceleration along magnetic fields.
- Pulsars offer unique **insights into stellar remnants and extreme physical conditions**.
- **Discovery (1967):** Found during radio wave study at the University of Cambridge, pulsars are rotating neutron stars emitting periodic radio signals.
- **Origins:** Linked to the 1932 discovery of the neutron, **pulsars result from the collapse of heavy star cores into super-dense neutron stars**.

Pulsar Glitches

- **Definition:** Pulsar glitches are **unexpected jumps in a pulsar's rotation**, thought caused by its **superfluid core** briefly coupling with the crust, releasing a hidden burst of energy. These fleeting "hiccups" help us peek inside these dense stars.
- **Rotation Mechanism:** Pulsar **rotation slows over time**, releasing energy that accelerates charges, producing radio signals.
- **Post-Glitch Relaxation:** Slow relaxation post-glitch indicates a **superfluid state inside neutron stars, where vortices sticking to nuclei cause glitches**.

Topic 20. CENTRE RELEASES NEW REGIMEN FOR LEPROSY TREATMENT

Important for the subject: Science and Technology

The Central government of India has approved a **new three-drug treatment regimen for Pauci-Bacillary (PB) leprosy cases**, replacing the **existing two-drug regimen**.

This initiative is part of the **National Leprosy Eradication Programme's** efforts to stop the **transmission of leprosy by 2027**, three years ahead of the UN's **Sustainable Development Goals**.

- The **World Health Organization (WHO)** has agreed to supply the revised **drug regimen** starting **April 1, 2025**. Consequently, **all States and Union Territories in India** are required to submit their requisitions for **anti-leprosy drugs** 12 months in advance.

About Leprosy:

- **Leprosy**, caused by the **Mycobacterium leprae bacteria**, primarily affects the **skin and peripheral nerves** and can lead to **progressive and permanent disabilities** if left untreated.
- The disease is **transmitted through** droplets from the **nose and mouth** during close contact with untreated cases.
- **Leprosy is curable with multi-drug therapy (MDT)**, which the **WHO** has been **providing free of charge**.
- The **WHO's recommended MDT** consists of **dapsone, rifampicin, and clofazimine**. Treatment duration is **six months for PB cases** and **12 months for multi-bacillary (MB) cases**.
- The **new 'Uniform MDT' regimen**, using a single three-pack kit for all patients, simplifies administration and manufacturing processes.
- However, there is some debate over the necessity of the three-drug regimen, as the two-drug regimen has shown adequate efficacy and low relapse rates in PB cases.
- Additionally, the third drug, clofazimine, can cause side effects like skin discoloration.

Topic 21. THE URGENT NEED FOR DATA TO MAKE PERSONALISED MEDICINE EQUITABLE

Important for the subject: Science and Technology

Medical research is biased, meaning some would be helped far more than others by genetically informed personalised medicine; there are problems across the clinical trials, ranging from which questions get asked in the first place, to who participates in trials and

who gets their genomes sequenced.

Genome Sequencing

- A genome is an organism's complete set of DNA, **including all of its genes**.
- Genome sequencing is **figuring out the order of DNA nucleotides**, or bases, in a genome—the order of As, Cs, Gs, and Ts that make up an organism's DNA.
- It is a method of isolating and identifying variable elements within the **base-pair sequence of DNA** (deoxyribonucleic acid) as it shows high degree of polymorphism (variation) at genetic level.
- **Polymorphism forms the basis of genome sequencing** since DNA from every tissue (such as blood, hair-follicle, skin, bone, saliva, sperm etc.) from an individual show the same degree of polymorphism.

Precision/personalised Medicine

- Precision medicine is an emerging approach for disease treatment and prevention that takes into **account individual variability in genes, environment, and lifestyle for each person**.
- Precision medicine, also known as personalized medicine, is a new frontier for healthcare **combining genomics, big data analytics, and population health**.
- This approach will **allow doctors and researchers to predict more accurately which treatment and prevention strategies for a particular disease will work in which groups of people**.
- It is in **contrast to a one-size-fits-all approach**, in which disease treatment and prevention strategies are developed for the average person, with less consideration for the differences between individuals.

Global efforts towards Genome Sequencing

- Human Genome Project
- The Human Genome Project was a significant global scientific endeavour whose primary goal was to create the first sequence of the human genome.
- The Project formally began in 1990 and was completed in 2003, to discover all the estimated 20,000-25,000 human genes and make them accessible for further biological study.

Encyclopedia of DNA Elements (ENCODE) Project

- The Encyclopedia Of DNA Elements (ENCODE) project began in 2003 by the US National Human Genome Research Institute (NHGRI).
- It is an international research effort funded by the National Human Genome Research Institute (NHGRI) that aims to identify all functional elements (FE) in the human genome.

Earth Biogenome Project

- The Earth BioGenome Project (EBP), a biology moonshot, aims to sequence, catalogue, and characterize the genomes of all eukaryotic biodiversity on Earth over a ten-year period.
- The project was officially launched in 2018 and is expected to take approximately ten years to complete.

India's efforts towards Genome sequencing - IndiGen Programme

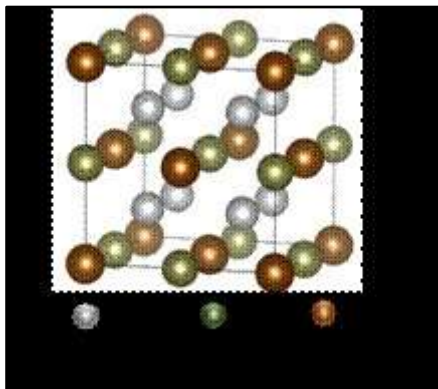
- The IndiGen programme launched in 2019 aims to undertake whole genome sequencing of thousands of individuals representing diverse ethnic groups from India.
- The goal is to enable genetic epidemiology and develop public health technology applications using population genome data. Indian Initiative on Earth Bio-Genome Sequencing
- The project was launched in 2020 and is part of the Earth Biogenome Project. The project will allow for the collection and preservation of endangered and economically significant species. The genetic information that has been decoded will also be useful in preventing biopiracy.

Genome India

- Genome India is a national project launched in 2020. It is funded by the Department of Biotechnology, and spear headed by the Centre for Brain Research (CBR).
- In the first phase of the study, the project aims to identify genetic variations in 10,000 representative individuals from across India using whole genome sequencing.

Topic 22. A NEW ALLOY DEVELOPED CAN ACT AS ALTERNATIVE MAGNETIC REFRIGERANT FOR MINIMIZING GREENHOUSE GAS EMISSIONS

Important for the subject: Science and Technology



Researchers have found a new alloy that can act as an effective magnetic refrigerant that can be an alternative cooling agent for minimizing greenhouse gas emissions and meet the global demand for higher energy efficiency for tackling global warming.

A team from **N. Bose National Centre for Basic Sciences** which an autonomous institute of the department of science and Technology (DST) experimented with a **certain type of alloys called all-transition metal based Heusler alloys (magnetic intermetallics with face-centered cubic crystal structure)** in their search for material exhibiting giant reversible MCE.

About current research:

- Current research is focused on developing new magnetic materials such as refrigerants.
- Three critical criteria need to be fulfilled.
- The material must be capable of operating for millions of cycles without any fatigue and failure
- The material must have high thermal conductivity and
- The material should respond to an external magnetic field of about 2 T (Tesla) which can be generated by permanent magnets.
- Since most of the materials developed so far show giant magneto caloric effect (GMCE) only at fields as high as 5 T, there is an urgent need to look for materials in which GMCE is achieved in lower fields.
- The team at S.N. Bose Centre has chosen Ni (Co)-Mn-Ti Heusler system because such systems often exhibit multifunctional properties with ultrahigh mechanical stability because of their intrinsic d-d hybridization.
- Authors claimed from the temperature and field-dependent magnetization measurements

that this investigated alloy yields giant reversible MCE parameters.

- **Fig 2.** Four FCC lattices of full-Heusler Ni(Co)-Mn-Ti Heusler alloy

Applications:

- The researchers claim that the obtained magnitude of reversible MCE and MR is the highest reported value so far in the all-d-metal Heusler family.
- The concurrent observation of refrigerant capacity and MR is also very rare in Heusler alloys.
- The search for the right kind of magnetic material has yielded positive results at the S.N. Bose Centre Lab.
- The synergistic combinations of giant MCE and MR by proper tailoring of Cu-doped Heusler alloys may lead to a diverse range of solid state-based technological applications.

About Magnetic cooling effect:

- **Magnetic cooling effect (MCE)** is defined as the **reversible temperature change of a magnetic material** when it is subjected to an external applied magnetic field.
- In the **magnetic refrigeration cycle**, a **magnetic field is applied on the magnetic material under an adiabatic process (no exchange of heat with the surrounding)**.
- Initially randomly oriented magnetic moments get aligned along the external magnetic field, resulting in the heating of the magnetic material. This **heat is transferred from the material to the ambience**.
- When the **magnetic field is removed during adiabatic demagnetization**, the **magnetic moments of the material become randomized**, resulting in a decrease in temperature below the ambient temperature.
- This process causes the material to absorb heat from the surrounding heat-transfer medium.

About Magnetic Refrigeration:

- **Magnetic refrigeration offers an energy-efficient and environment-friendly cooling technology** as an alternative to the vapor-cycle refrigeration technology in use today.
- It is based on the principle of **magnetocaloric effect**.
- Hence efforts are on to fabricate **magnetic refrigerators for household, industrial, and technological applications**.

Topic 23. THE FINER TOUCH: WHEN ‘ARTIFICIAL SKIN’ IS MORE SENSITIVE THAN THE ORIGINAL

Important for the subject: Science and Technology

Researchers at TU Graz in Austria have received funding to examine real life applications for their successful ‘artificial skin’ prototype that can reportedly ‘feel’ more than the real thing.

- The synthetic skin project is an attempt to emulate at least some of the functions that skin performs.

About Artificial Skin

- Artificial skins are a series of materials that try to emulate the functionality of our skin.

What is the Smart Core Project?

- Dr. Coclite and her team had succeeded in developing a three in one “**smart skin**” **hybrid material**, which closely **resembles human skin by simultaneously sensing pressure, moisture and temperature and converting them into electronic signals**.
- With 2,000 individual sensors per square millimetre, the hybrid material is **more sensitive** than a human fingertip, giving it its reputation, and, at 0.006 millimetres thick, **many times thinner than human skin**.
- The team says that by reacting to these three human sensory impressions, the smart skin prototype surpasses all electronic skin materials on the market to date which only react to pressure and temperature.
- Further, “Human skin has a resolution of one millimetre square. So this means that if you have an object that is one millimetre square or bigger, you can feel it with your finger.
- With the device that has been produced, we were able to even measure the electrical current from a pixel that was 0.25 millimetre square, smaller than one millimetre square.

Materials Used

- One is a **piezoelectric material** which when compressed or stretched, generates an electric current. This type of material for example, is the one that allows the artificial skin to sense force or pressure.
- The other material that is also very fundamental in this is the **smart polymer** that changes thickness depending on humidity and temperature, and in particular, these two materials have been combined in various nano rods.
- So very, very, very small rods in which the polymer is in the middle and the piezoelectric material is on the outside.
- When the polymer expands, because the temperature or humidity changes, it applies a

pressure on the piezoelectric material, and then consequently, an electrical current.

Applications

- One area of practical application is prosthetics. The artificial skin could cover the **prosthetics** and help the patient with the amputation regain **sensation**.
- Smart skin could also be used as a **sensor** with smart watches, when it is programmed to collect precise information about the health status of patients.
- In this way, skin moisture, pH value and temperature could be continuously monitored.

Topic 24. ULTRA-PROCESSED FOODS: HERE'S WHAT THE EVIDENCE ACTUALLY SAYS ABOUT THEM

Important for the subject: Science and Technology

The **health risks of ultra-processed foods** have **gained attention recently**, partly due to **Chris Van Tulleken's** book "**Ultra-Processed People.**"

Ultra-processed foods (UPF):

- UPF is an **industrially formulated edible substance** derived from **natural food** or **synthesized** from other **organic compounds**.
- The resulting products are designed to be **highly profitable, convenient, and hyper-palatable**, often through **food additives** such as **preservatives, colourings, and flavourings**.
- These are **commercial food products** that contain **ingredients not typically used in home cooking**, often designed to **enhance flavour, extend shelf life, or reduce costs**.
- While it's known that foods **high in saturated fats, salt, sugar, and calories**, and **lacking in whole grains and fibre** contribute to **health issues** like **obesity, hypertension, heart disease, and type 2 diabetes**, not all ultra-processed foods have these unhealthy nutritional profiles.
- The process of ultra-processing itself, rather than just nutritional content, is harmful and could be more deadly than tobacco and is the leading cause of early death globally.

Myths scrutinised:

- There is **no scientific evidence** that **ultra-processed foods are the largest cause of death globally**.
- This claim seems to **misinterpret research** suggesting **poor diet is a leading cause of death**, primarily due to **inadequate consumption of fruits, vegetables, oily fish, or whole grains, not ultra-processed foods per se**.

- Studies do show that **diets high in certain ultra-processed foods**, like **sugary drinks and processed meats**, are **linked to poorer health**.
- However, **not all ultra-processed foods are detrimental**, with some, like **brown bread and cereals**, even associated with **better health**.
- There's **no definitive evidence** showing that **food processing itself harms health**. Expert panels in the US and UK, regardless of their funding sources, concur that the **impact of food processing on health is not clear**.

Topic 25. THE MOON IS A TOUGH CUSTOMER

Important for the subject: Science and Technology

Explorers of the Moon:

Lunar Reconnaissance Orbiter- 2009, by USA, to create a 3D map of the moon's surface to identify landing sites and environments necessary for robotic and human missions.

- **YUTU-2 Rover- 2018, By China**, the lander made a touchdown in the Von Karman crater to understand more about the early solar system and Earth.

Chandrayaan-2 orbiter, 2019, by ISRO

- **Chang'e 5 orbiter 2020 by China**. Consists of 4 modules: an orbiter, a lander, an ascender and a returner. The goal was to collect and return around 2 kg of lunar samples, which it achieved in Dec.2020
- **Korea Pathfinder Lunar Orbiter 2022**: South Korea launched it to study the moon's surface to inform future missions about the polar region. It will also hunt for ice deposits, observe seasonal changes and measure the terrain inside the craters.
- **CAPSTONE Orbiter 2022**: NASA launched a microwave-sized satellite on elliptical lunar orbit, it can offer stability to long-term missions like Gateway- a moon-orbiting outpost that is part of NASA's also aims to demonstrate spacecraft-to-spacecraft navigation services.
- **Chandrayaan-3: 2023 by ISRO**- to land a rover and ladder on the moon, and ISRO successfully did it.
- **SLIM mission**: Japan achieved **significant success** with the **soft landing** of the **Smart Lander for Investigating Moon (SLIM)** on January 20, 2024, making **Japan the fifth nation to accomplish this feat**.
- However, the mission faced issues with its solar antennae, jeopardising its scientific objectives.

Hakuto-R mission:

- Launched in **2023**
- A **Japanese mission** to **land on the moon**. It was **not Hakuto-R Mission 2**, a **lunar lander and rover**, is scheduled for launch in **2024**.

Challenges in Moon mission:

- January 2024 was marked by significant developments in **lunar missions**, with **two robotic missions to the Moon** having mixed outcomes: one a failure and the other a minimal success.
- **NASA**, under its **Artemis program**, announced a delay in its first **crewed Moon missions**, now planning a flyby around September 2025 and a landing attempt in September 2026.
- This comes over fifty years after **NASA's successful Apollo program**, where **twelve men walked on the Moon**.
- The **US company Astrobotic Technology's Peregrine lunar lander**, part of **NASA's Commercial Lunar Payload Services initiative**, failed after a propellant leak led to the loss of control and eventual re-entry over the South Pacific.
- Contrastingly, **Japan** achieved **significant success** with the **soft landing** of the **Smart Lander for Investigating Moon (SLIM)** on January 20, 2024, making **Japan** the **fifth nation to accomplish this feat**.
- However, the mission faced issues with its solar antennae, jeopardising its scientific objectives.
- The history of **private lunar missions** has been challenging, with failures from **SpaceIL** and **Israel Aerospace Industries' Beresheet** in April 2019, the **Japanese agency ispace's Hakuto-R mission** in April 2023, and **Russia's Luna-25 mission** in August 2023.
- Despite **SpaceX's successes** with **ISS transport** and **satellite launches**, its **Starship missions** have failed, and other major players like **Boeing's Starliner** have faced delays.
- This raises questions about the **private sector's role and reliability in future Moon, Mars, and beyond missions**.
- **Technical and financial challenges** are **significant** in **Moon missions**, including **landing precision** and **navigation without space-based aids**.
- **India's Chandrayaan-3 mission** stands out as a **notable success** amid these developments, highlighting the complexity and difficulty of lunar exploration for both states and private entities.

Topic 26. JET ENGINE DEAL WITH FRANCE WILL GIVE 100% ACCESS TO TECH

Important for the subject: Science and technology

India is in discussions with France to manufacture an engine for the Advanced Medium Combat Aircraft (AMCA), a **fifth-generation fighter jet**.

- Talks involve **Safran, DRDO, and India's Aeronautical Development Agency** to establish specifications aligning with India's fighter jet requirements.

About Indigenous Engine Development:

- India's deal with **General Electric (GE)** involves **manufacturing the F-414 engine, enhancing India's jet engine capabilities**.
- The F-414 engines will power the indigenous Light Combat Aircraft (LCA)-MK2 and the initial version of the AMCA, marking significant progress from past unsuccessful attempts at local engine development under the Kaveri project.

About Kaveri project

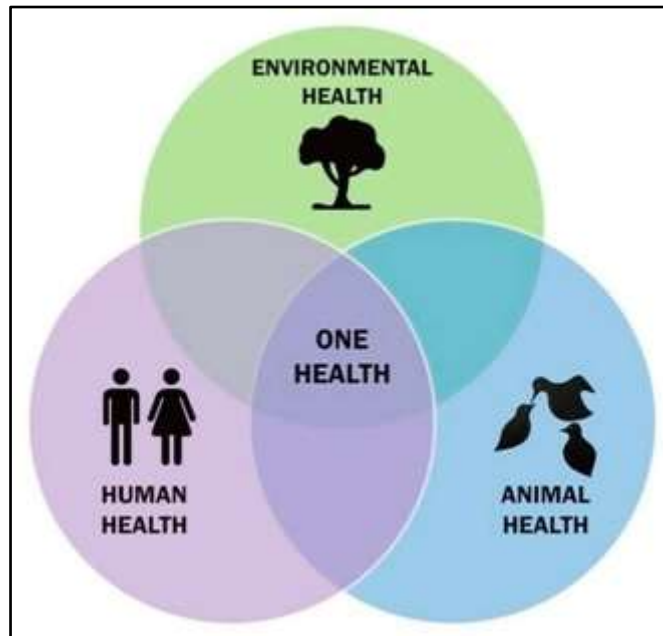
- The Kaveri program aimed to **create an indigenous military gas turbine engine for the LCA project in 1986**.
- Despite spending over ₹2,000 crore, the program did not fulfil the required technical standards.
- Due to Kaveri's ongoing development, India opted for interim American GE-F404 engines for **LCA Tejas Mark-1**.

AMCA

- AMCA (Advanced Medium Combat Aircraft) is India's **fifth-generation stealth multirole fighter aircraft project**.
- AMCA is being developed by the **Aeronautical Development Agency (ADA)** in collaboration with **HAL (Hindustan Aeronautics Limited)**.

Topic 27. OUTBREAK OF WESTERN EQUINE ENCEPHALITIS VIRUS IN ARGENTINA

Important for the subject: Science and technology



In December 2023, the **Pan American Health Organization/World Health Organization** was notified of a human case of **Western Equine Encephalitis Virus (WEEV)** in **Argentina**, the **first since 1996**.

The **outbreak** has since grown to **21 confirmed human cases**.

About Western Equine Encephalitis Virus (WEEV):

- **WEEV** is a **mosquito-borne infection** caused by the **Western Equine Encephalitis Virus (WEEV)**, which belongs to the **Togaviridae** family of viruses with **neurological symptoms** in severe cases, and there is **no specific antiviral treatment**.
- The virus has an approximately **11.5 kilobases long single-stranded RNA genome** and is a **recombinant** of the **eastern equine encephalitis virus (EEEV)** and a **Sindbis-like virus**.
- **Passerine birds** are thought to be the **reservoir** and **equine species** as intermediate hosts.
- The outbreak coincides with ongoing **WEEV** outbreaks in **horses** in **Argentina** and **Uruguay**, with **374 confirmed animal cases** in both countries, including **1,258 in 15 Argentine provinces**.
- Exposures include **veterinary work, construction, and outdoor activities**.
- **PAHO/WHO** has alerted about the risk of **WEEV** spreading in the **Americas**, emphasizing the need for enhanced surveillance, a **One Health approach**,

environmental modifications, vector control, and equine vaccination.

One Health Approach:

- **One Health** is a holistic approach to problems that **recognises** the interconnections between the **health of humans, animals, plants**, and their **shared environment**.
- An early articulation can be found in the **writings of Hippocrates (460-367 BC)**, who contemplated the relationships between **public health** and **clean environments**.
- The **19th-century German physician and pathologist Rudolf Virchow (1821-1863)** also talked about the **integrated health approach of humans and animals**.
- The **eminent veterinarians James Steele (1913-2013) and Calvin Schwabe (1927-2006)** have championed the value of ecology for both animal and human health.

Topic 28. INSAT-3DS SATELLITE SENT TO LAUNCH PORT IN SRIHARIKOTA

Important for the subject: Science and technology

The Indian Space Research Organisation (ISRO) has said that the INSAT-3DS satellite has been flagged off to the launch port at the Satish Dhawan Space Centre in Sriharikota.

About INSAT-3DS

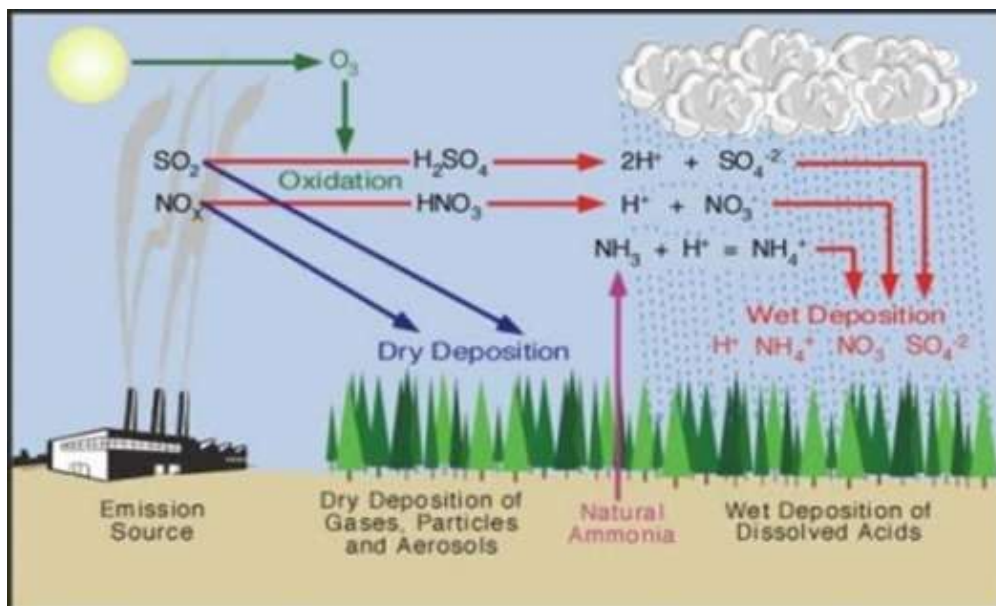
- INSAT-3DS is a user-funded meteorological satellite developed by **ISRO**.
- It's designed to maintain and improve upon the **services provided by existing satellites**.
- It utilizes ISRO's I-2k bus platform and weighs **2,275 kg**.
- The project is a collaboration with the **Ministry of Earth Sciences**.
- The satellite features advanced payloads for **meteorological observations, communication, data relay, and search and rescue**. Its capabilities include improved **weather forecasting and distress signal relaying globally**.

About Indian Space Research Organization (ISRO)

- **Agency Background:** ISRO, the space agency of the Government of India, operates under the Department of Space.
- **Establishment:** Founded on August 15, 1969, in Bengaluru, Karnataka, it succeeded INCOSPAR, expanding its mission to utilize space technology.
- **Mission:** ISRO's main objective is to develop and utilize space technology to address diverse national requirements.

Topic 29. THE GENOMIC REVOLUTION PROMISES TO TRANSFORM CANCER CARE

Important for the subject: Science and technology



Recent **UK research with 13,800 cancer patients** showed genomic integration with clinical data can identify new cancer targets, guiding treatment strategies and highlighting inherited risks.

- NHS explores genomic medicine integration in cancer care, some trusts use preemptive sequencing.

Genome Sequencing:

- Genome sequencing is the **process of determining the complete DNA sequence of an organism's genome**. It involves reading the order of nucleotides (A, T, C, and G) in DNA strands, providing insights into genetic variations and potential disease risks.

Oncology

- Oncology is the **branch of medicine focused on the diagnosis, treatment, and prevention of cancer**. Oncologists study the causes and progression of cancer, develop treatment plans such as surgery, chemotherapy, and radiation therapy, and work towards improving patient outcomes.

Insights from study:

- Whole-Genome Sequencing:** Central to the transformation of cancer care is whole-genome sequencing, enabling the comprehensive analysis of an individual's DNA in a

single test.

- **Cancer Burden:** With cancer becoming a significant global health concern, initiatives like the **Cancer Genome Atlas** aim to understand the molecular basis of cancer, leading to the development of precision oncology therapies.
- **Precision Oncology:** Molecular tests determine eligibility for precision oncology therapies, with genomic medicine showing potential to revolutionize cancer treatment by **customizing therapies based on genomic data**.

Acid rain has its origins in fossil fuels

Origins of Acid Rain:

- Acid rain results from the **combustion of fossil fuels containing sulphur, releasing sulphur dioxide (SO₂), and nitrogen oxide (NO_x) emissions**, particularly from vehicles and power plants.
- Natural sources like **volcanic eruptions and lightning also contribute to SO₂ and NO_x emissions**, but urban areas rely heavily on fossil fuels, exacerbating the issue.

Formation and Effects:

- **SO₂ and NO_x react with water and oxygen in the atmosphere to form sulphuric acid (H₂SO₄) and nitric acid (HNO₃), leading to acid rain, snow, and fog with a pH around 4.2-4.4.**
- Acid precipitation can **harm aquatic life by rendering water bodies inhospitable and disrupt soil bacteria, impacting ecosystems and forests**.

Mitigation Efforts:

- Coal power plants have reduced SO₂ emissions significantly using **flue-gas desulphurisation**, while international collaborations like the **Acid Deposition Monitoring Network in East Asia (EANET)** aim to minimize acid rain's environmental impact.

Topic 30. WHAT IS END-TO-END ENCRYPTION AND HOW DOES IT SECURE INFORMATION?

Important for the subject: Science and technology

What is Encryption:

Encryption serves as a **method to safeguard data against unauthorized access or manipulation**.

- It functions by converting the data into a confidential code that only the designated recipient can decode.
- This proves beneficial in numerous scenarios, including **securing online correspondence, safeguarding sensitive data, and authenticating digital identities.**

Types Of Encryption

- **Symmetric:** This method employs a single key for both **encryption and decryption**. In symmetric encryption, the key utilized to encode data is identical to the one needed for decoding it.
- **Asymmetric:** Asymmetric encryption relies on a pair of keys- **a public key and a private key**. The public key can be distributed openly, whereas the private key must remain confidential.

End to End Encryption:

- The concept of encryption typically pertains to **safeguarding stored data**, whereas **end-to-end encryption ensures the protection of data during its transmission between locations, particularly in scenarios involving rapid information exchange.**
- In an application equipped with end-to-end encryption (E2EE), only the individuals at each end—namely, the sender and recipient—have the ability to access exchanged messages.

What are the issues with End-to-end encryption (E2E)?

- **Compromised endpoints:** If either endpoint has been compromised, an attacker may be able to see a message before it is encrypted or after it is decrypted. Attackers could also retrieve keys from compromised endpoints.
- **Too much privacy:** Government and law enforcement agencies express concern that end-to-end encryption can protect people sharing illicit content because service providers are unable to provide law enforcement with access to the content.

Topic 31. ASTRONOMERS SPOT UNUSUAL OBJECT THAT FALLS WITHIN THE BLACK HOLE 'MASS GAP'

Important for the subject: Science and technology

Astronomers identify a perplexing object in the **NGC 1851E system**, filling the mass gap between neutron stars and black holes.

- **Positioned between the heaviest neutron stars and the lightest black holes**, this discovery challenges established astrophysical knowledge.

Globular clusters :

- Globular clusters are densely packed groups of stars bound together by gravity, typically containing thousands to millions of stars. They are spherical or nearly spherical in shape and are among the oldest objects in the universe, found in the halos of galaxies.

Neutron Star:

- A neutron star is the collapsed core of a massive star after a supernova explosion.
- Composed mostly of neutrons, it is incredibly dense, packing the mass of a few Suns into a sphere the size of a city.

Pulsar:

- A pulsar is a highly magnetized, rotating neutron star that emits beams of electromagnetic radiation. As it spins rapidly, these beams are observed as pulses of radiation, resembling a cosmic lighthouse.

Black Hole:

- A black hole is a region of spacetime where gravity is so strong that nothing, not even light, can escape its grasp. It forms when massive stars collapse under their own gravity.

What is NGC 1851?

- NGC 1851, also called Caldwell 73, is a sizable globular cluster situated in the Columba constellation.
- Positioned approximately 39.5 kilolight-years from the Sun and 54.1 kilolight-years from the Galactic Center.

Observations and Findings:

- In the NGC 1851 star cluster, a millisecond pulsar and an unseen, massive object coexist.
- The pulsar's stable spin aids observations, allowing precise measurements.
- Astronomers, using the MeerKAT radio telescope, determine the system's mass, revealing a dark companion within the "black hole mass gap."

Topic 32. ODISHA KNOCKS ON TAMIL NADU'S DOORS TO HELP TACKLE JUMBO ATTACKS, SEEKS FOUR KUMKI ELEPHANTS AND MAHOUTS

Important for the subject: Environment



To mitigate man-elephant conflict which is emerging as a key challenge in Odisha, the state government has sought four **Kumki elephants** and their mahouts from Tamil Nadu.

- According to official figures from Odisha's forests department around **925 people died and 212 were disabled in human-elephant conflicts** in the state in the past 10 years, from 2012-13 to 2021-22.
- As many as **784 elephants also died** in the state during that period.
- Odisha introduced the programme with the help of Kumkis in the 1990s in Similipal and Chandaka and it needs to be revived in view of the growing conflicts.

About the initiative:

- The Odisha government also hopes to revive its elephant training programme with Tamil Nadu's help.
- It is initially planned at four places including
- **Chandaka in Khurda district,**
- **Satkosia in Angul district,**
- **Kapilash in Dhenkanal district and**
- **Similipal in Mayurbhanj and will be later expanded to other areas**

- **Odisha** which lacks trained mahouts has also requested **Tamil Nadu** to depute mahouts to take care of the **Kumki elephants** and to provide initial handholding support to the local mahouts in Odisha.

About Kumki elephants:

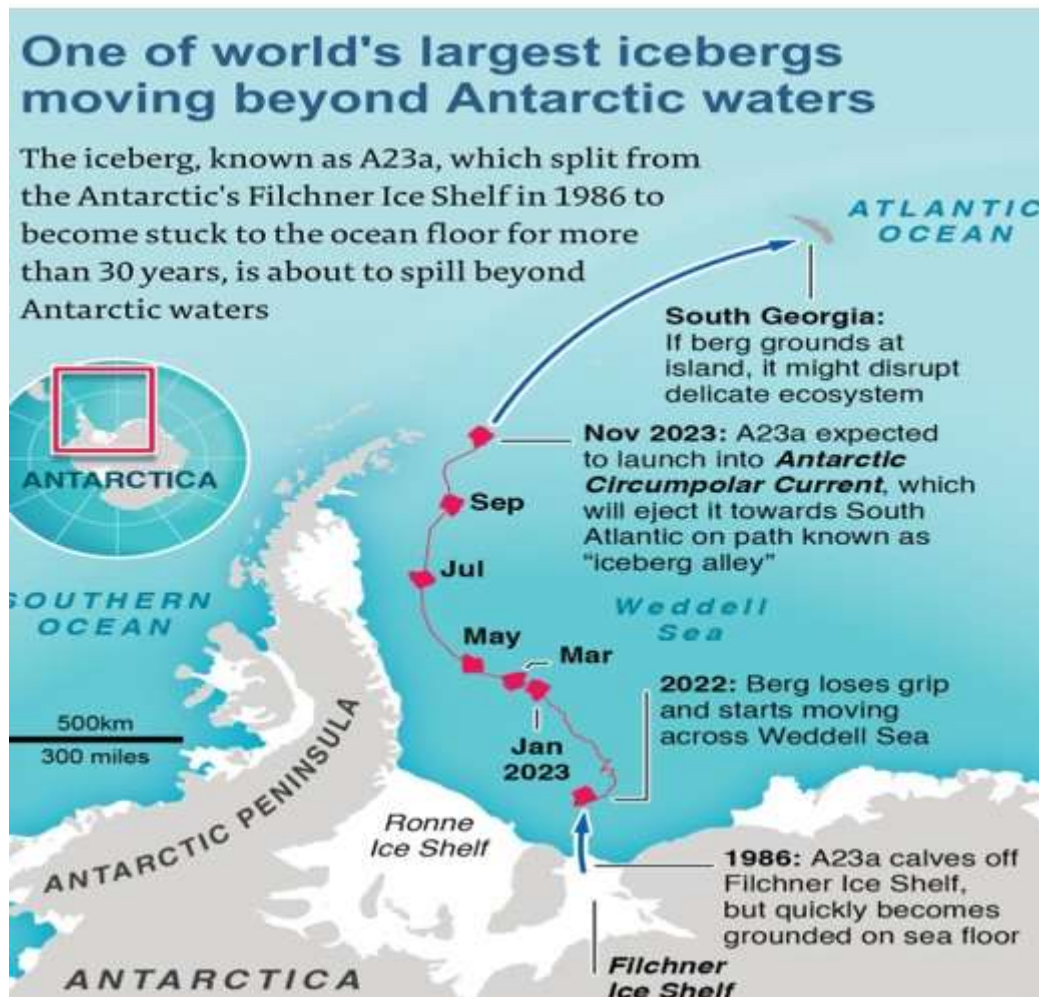
- **Kumki** (also known as **Thappana** in Malayalam) is a term used in India for **trained captive Asian** elephants used in operations to **trap wild elephants, to rescue or to provide medical treatment to an injured or trapped wild elephant**.
- They are used in **capturing, calming and herding wild elephants or to lead wild elephants** away in conflict situations.
- They can be **deployed strategically to help manage and drive wild elephants**, thereby reducing damage to crops, human habitation and the potential loss of both human and elephant lives.
- These elephants can also be deployed for **forest patrolling and rescue operations**
- The Kumki elephants serve as an **invaluable asset to the state's wildlife organization** and aid its efforts to minimize conflicts.

About Simlipal National Park:

- **Simlipal** is a tiger reserve in the **Mayurbhanj district** in the Indian state of Odisha
- It is part of the Mayurbhanj Elephant Reserve, which includes three protected areas
- **Similipal Tiger Reserve, Hadgarh Wildlife Sanctuary and Kuldiha Wildlife Sanctuary**.
- **Simlipal National Park** derives its name from the abundance of red silk cotton trees growing in the area.
- The Similipal Biosphere Reserve lies within two biogeographical regions: the **Mahanadian east coastal region of the Oriental realm and the Chhotanagpur biotic province of the Deccan peninsular zone**.
- Volcanic sedimentary rocks are aligned in **three concentric rings and accentuate the area's geologic formations**.
- The highest peak in the **Similipal hill range is Khairiburu (1,168 meters)**.
- Numerous waterfalls and perennial streams flow into major rivers, such as the **Budhabalanga, Baitarani and Subarnarekha**.

Topic 33. WORLD'S BIGGEST ICEBERG BATTERED BY WAVES AS IT HEADS NORTH

Important for the subject: Environment



The iceberg named A23a is nearly more than twice the size of Greater London. After decades stuck to the Antarctic ocean floor, it is now heading north on what could be its final journey.

- A23a first broke off the Antarctic coast in 1986, making it the world's oldest iceberg as well as its largest.
- The iceberg, which is up to 400 metres thick in places, is currently drifting between Elephant Island and the South Orkney islands.
- It contains an estimated one trillion tonnes of freshwater that is likely to melt off into the ocean along the way.
- Since breaking free, A23a has followed roughly the same path as previous massive icebergs, A68 and A76, moving past the east side of the Antarctica

Peninsula through the **Weddell Sea**.

- Whether or not this was caused by climate change, winter Antarctic sea ice reached its lowest level on record last year, remains an open question.

Key Facts about Antarctica

- It is the world's southernmost and fifth largest continent. Its landmass is almost wholly covered by a vast ice sheet.
- It has an extremely cold, dry climate. Winter temperatures along Antarctica's coast generally range from -10° to -30°C (14° to -22°F).
- Lichens, mosses, and terrestrial algae are among the few species of vegetation that grow in Antarctica.
- The islands of the Antarctic region are: South Orkney Islands, South Shetland Islands, South Georgia.
- India maintains two research stations on the continent: 'Maitri' (commissioned in 1989) at Schirmacher Hills and 'Bharati' (2012) at Larsemann Hills.

Topic 34. TWO NEW MAMMALIAN SPECIES ADDED TO KAZIRANGA'S FAUNA

Important for the subject: Environment



Two new mammalian species have been **added** to the **list of fauna** in **Assam's Kaziranga National Park and Tiger Reserve**, the primary address of the one-horned rhinoceros on earth.

- The two mammals are the elusive **binturong** (*Arctictis binturong*), the **largest civet** in **India** also known as the **bearcat**, and the **small-clawed otter** (*Aonyx cinereus*).
- Both are **listed** under **Schedule I** of the **Wildlife Protection Act of 1972**.
- The **list of mammals** in **Kaziranga** is **topped** by the **Big Five** — the **great Indian one-horned rhinoceros** (*Rhinoceros unicornis*), **Indian elephant** (*Elephas maximus*), **Bengal tiger** (*Panthera tigris*), **wild water buffalo** (*Bubalus bubalis*), and the **eastern swamp deer** (*Cervus duvauceli*).
- The **other mammals** found in **Kaziranga National Park and Tiger Reserve** include the **Indian wild boar** (*Sus scrofa*), **Indian gaur** (*Bos gaurus*), **sambar** (*Cervus*

unicolor).

- **hoolock or white-browed gibbon** (*Hylobates hoolock*), **Gangetic dolphin** (*Platanista gangetica*), **capped langur or leaf monkey** (*Presbytis pileatus*), **sloth bear** (*Melursus ursinus*), **leopard** (*Panthera pardus*), and **the jackal** (*Canis aureus*).

Binturong (*Arctictis binturong*) (bearcat):

- An **arboreal mammal native to South and Southeast Asia**, the **binturong** is not easily found due to its **nocturnal** and **arboreal habits**. It is also uncommon in much of its range and is known to have a distribution exclusive to the northeast of India.
- The binturong is the only species in the genus *Arctictis*.

Small-clawed otter (*Aonyx cinereus*):

- Also known as the **Asian small-clawed otter**, the **mammal** has a **wide distribution range** extending through **India eastwards to Southeast Asia and southern China**.
- In **India**, it is found mostly in the **protected areas of West Bengal, Assam, Arunachal Pradesh, Karnataka, Tamil Nadu, and some parts of Kerala** in the **Western Ghats region**.
- **Small-clawed otters** have **partially webbed feet** with **short claws**, which make them **skilled hunters in aquatic environments**.
- They are **primarily** found in **freshwater habitats** where they **feed on a diet of fish, crustaceans, and molluscs**.
- The **small-clawed otter** was previously reported from the **western Himalayas** and parts of **Odisha**.



Topic 35. ODISHA TO ESTABLISH A MELANISTIC TIGER SAFARI – A FIRST OF ITS KIND IN THE WORLD

Important for the subject: Environment

The **Odisha Government in India** announced the establishment of the **world's first melanistic tiger safari** near **Baripada**, the district headquarters town of **Mayurbhanj**.

- This safari, to be **set up adjacent to National Highway-18**, will cover an area of **200 hectares**, with **100 hectares** dedicated to displaying the tigers and the rest for veterinary care facilities, a rescue centre, staff infrastructure, and visitor amenities.
- The safari will be **located** near the **Similipal Tiger Reserve (STR)** in **Mayurbhanj**, which is **home to the world's only wild melanistic tigers**.
- This **initiative** **aims** to **elevate wildlife tourism** in **Odisha** and **promote awareness** about the **conservation of these rare animals**.
- The safari will house **surplus tigers** from the **Nandankanan Zoo** and rescued or orphaned tigers in open enclosures.

Added attraction:

- The State Government's proposal for this safari has received **in-principle approval** from the **Technical Committee of the National Tiger Conservation Authority (NTCA)**.
- A committee appointed by the **NTCA** will conduct a feasibility study on-site before granting final approval.
- Additional statutory clearances, including approval from the **Central Zoo Authority (CZA)**, will be sought subsequently.
- According to the '**All India Tiger Estimation**' report, there are about **20 tigers** in **Odisha** as of **2022**

About Similipal National Park:

- Similipal is a **tiger reserve in the Mayurbhanj district** in the Indian state of Odisha
- It is **part of the Mayurbhanj Elephant Reserve**, which includes three protected areas - Similipal Tiger Reserve, Hadgarh Wildlife Sanctuary and Kuldiha Wildlife Sanctuary.
- Similipal National Park **derives its name from the abundance of red silk cotton trees** growing in the area.
- The vast terrain of Similipal with wide altitudinal, climatic and topographic variations, criss-crossed by large number of perennial streams, harbours a **unique blend of Western Ghats, Eastern Ghats and Sub-Himalayan plant species**.
- The floristic composition indicates a **connecting link between South Indian and North**

Eastern Sub-Himalayan Specie

- Forest is **predominantly moist mixed deciduous forest** with **tropical semi-evergreen forest in areas** with suitable microclimatic conditions and sporadic patches of dry deciduous forests and grasslands. It forms the **largest watershed of northern Odisha**.
- It holds the **highest tiger population in Odisha**, and harbours the **only population of melanistic tigers in the world**.
- Other carnivores found here are **leopard, leopard cat, fishing cat, jungle cat and wolf**. The active **management of mugger** has revived its population on the banks of the rivers Khairi and Deo.
- Similipal Tiger Reserve is also **home to the largest population of elephants in Odisha**.
- This protected area is **part of the UNESCO World Network of Biosphere Reserves** since 2009.

Topic 36. NO FOOD IN FORESTS: BEARS, LANGURS THROG UTTARAKHAND APPLE ORCHARDS AS NATIVE VEGETATION GETS TAKEN OVER BY INVASIVES

Important for the subject: Environment

In Uttarakhand, **invasive plant species** are **significantly impacting the forest ecosystem**, affecting the **food availability for wild animals** and causing **increased human-wildlife conflicts**.

- A study by the **Wildlife Institute of India** highlights the **widespread invasion of non-native plants across two-thirds of India's natural areas**, posing a significant threat to ecosystems.
- Horticulture farmers, particularly **apple orchardists in Sukhi Top village**, report **rising incidents of bear and langur invasions** into their orchards.
- The **lack of natural food sources** in the forest is **driving wildlife towards human settlements**.
- Other invasive wildlife include **monkeys, Himalayan goral, barking deer, blue sheep and Himalayan tahr**.
- The **increase in tiger population in Uttarakhand**, from **442 in 2018 to 560 in 2023**, has led to more tiger attacks on human settlements, particularly in the **Terai region**, which is rich in biodiversity.
- The **Ramnagar Forest Department** faces challenges in **managing human-wildlife conflict** and controlling **invasive plant species** like **Lantana camara** and **Congress grass**.
- These species are **replacing native grasses**, forcing **herbivorous wildlife to adapt by**

consuming **lantana**, which is harmful to their health.

- Efforts to **eradicate lantana** include the ‘**cut rootstock method**’ and replacing it with **local plant species**

WPA 1972:

- The **Wildlife (Protection) Act, 1972**, states that the **central government** can “**declare any wild animal other than those specified in Schedule I and Part II of Schedule II to be vermin** for any area and for such period as may be specified therein and so long as such notification is in force, such wild animal shall be deemed to have been included in **Schedule V.**”

The vermin conflict:

- The **damage to the national economy due to crop depredation by wild animals** has never been computed. But for lakhs of farmers around India’s many protected forests, it is the **biggest challenge to livelihood** (not to mention the occasional threat to life).
- Since **1972**, the **WLPA** has identified a few species — **fruit bats, common crows and rats** — as **vermin**.

Killing animals outside this list was allowed under two circumstances:

- Under **Section 62 of WLPA**, given sufficient reasons, any species other than those accorded the highest legal protection (such as tigers and elephants but not wild boars or nilgais) can be declared vermin at a certain place for a certain time.
- Under **Section 11 of WLPA**, the **chief wildlife warden of a state** can allow the killing of an animal, irrespective of its status in the Schedules, if it becomes “dangerous to human life”.
- The **state governments** took the decisions under **Section 62** until **1991** when an amendment handed over the powers to the Centre.
- The purpose was apparently to restrict the possibility of eliminating a large number of animals at a species level as **vermin**. Under **Section 11**, the **states could issue culling permits only locally and for a few animals**.
- In recent years, however, the **Centre** has started using its powers under **Section 62** to issue **sweeping orders declaring species as vermin at even state levels**, often without any credible scientific assessment.

Topic 37. ALBATROSSES ARE THREATENED WITH EXTINCTION — AND CLIMATE CHANGE COULD PUT THEIR NESTING SITES AT RISK

Important for the subject: Environment



Wandering albatross (*Diomedea exulans*):

The wandering albatross (*Diomedea exulans*) is the world's largest flying bird, known for its immense wingspan of up to 3.5 meters. These birds, which can live up to 60 years, are oceanic nomads (pelagic birds), spending most of their life at sea and only coming ashore to breed roughly every two years after reaching sexual maturity. Their habitat is primarily the Southern Ocean and nearby islands, where they nest.

- Notably, Marion Island and Prince Edward Island, located south of South Africa, are critical for these birds, hosting about half of the global wandering albatross breeding population, estimated at around 20,000 mature individuals.
- The wandering albatross is currently listed as vulnerable due to risks like bycatch from longline fishing, climate change and shrinking habitat.

The environmental factors influencing their nesting choices on Marion Island:

- Elevation was a key factor, with albatrosses preferring lower, warmer sites with coastal vegetation for nesting.
- However, this preference indicates potential threats from climate change.

Variables influencing nest site selection:

- The study on Marion Island, a volcanic island with challenging terrain, aimed to understand the factors influencing nest site selection by wandering albatrosses.
- Key variables examined included elevation, terrain ruggedness, slope, distance to the coast, vegetation type, wind speed, wind turbulence, and underlying geology.
- Elevation was found to be the most critical factor, with most nests located near

the **coast at lower elevations**, providing **warmer conditions** less harsh for the chicks.

- Proximity to the coast was also essential, as suitable habitats were more abundant there.

Delicate balance:

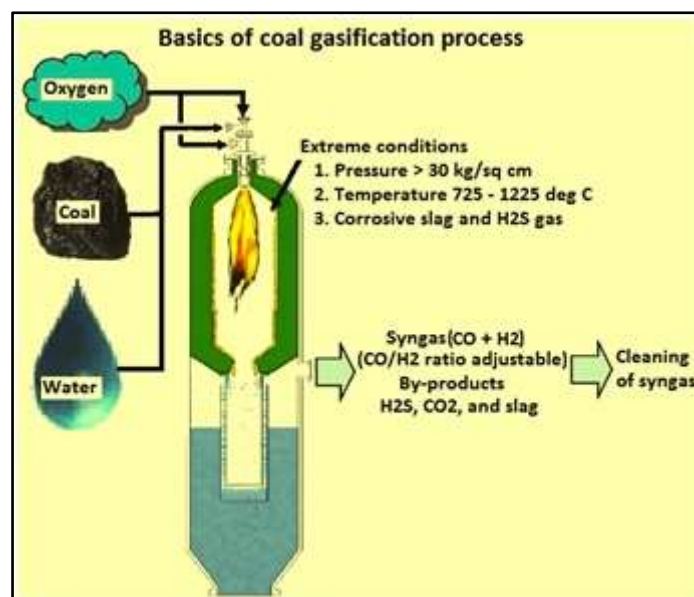
- The study on **Marion Island** reveals how the **delicate balance of the wandering albatross' habitat** is **threatened by climate change**.
- Over the past decades, the island has experienced a significant **increase in temperature**, **decrease in precipitation**, **reduced cloud cover**, and **disappearance of the permanent snowline**.
- These changes have led to **shifts in vegetation** and **species distribution patterns**

Places in news:

- **Marion Island and Prince Edwards Island:** Two small uninhabited islands in the **sub-Antarctic Indian Ocean** that are part of **South Africa**.

Topic 38. CABINET APPROVES ₹8500 CRORE INCENTIVE SCHEME FOR COAL GASIFICATION PROJECTS

Important for the subject: Environment



The Union Cabinet approved a **₹8,500 crore incentive scheme** for **coal gasification projects**.

- The **adoption of gasification technology** in **India** is expected to **reduce the country's reliance on imports** of **natural gas, methanol, ammonia** and **other essential products**

Coal gasification:

- The Government is **targeting** to gasify **100 million tonnes (MT)** of coal by **2030**.
- In the **gasification process**, coal is **partially oxidised** by **air, oxygen, steam, or carbon dioxide** under **controlled conditions** to **produce a liquid fuel** known as **syngas**. **Syngas or synthesis gas** can be used for **power generation** and to make **methanol** as well.
- **Syngas** is a **mixture** consisting primarily of **methane (CH₄)**, **carbon monoxide (CO)**, **hydrogen (H₂)**, **carbon dioxide (CO₂)** and **water vapour (H₂O)**.
- **In-situ gasification of coal** – or **Underground Coal Gasification (UCG)** – is the technique of converting coal into gas while it is still in the seam and then extracting it through wells.

Topic 39. INDIA ONE OF THE NINE COUNTRIES TO SIGN A GLOBAL PACT TO PROTECT ENDANGERED RIVER DOLPHINS

Important for the subject: Environment

Global Declaration for River Dolphins:

A meeting was held in **Bogotá, Colombia**, around **International River Dolphin Day (Oct. 24)**, to discuss the political context, success stories, and collaborative efforts for **river dolphin conservation**.

- The **global declaration** aims to **double river dolphin populations in Asia** and **halt their decline in South America**.
- A **key goal** was to **encourage nations to sign the Global Declaration for River Dolphins**, led by **Colombia's government, WWF, the Omacha Foundation, the World Bank, and the South American River Dolphin Initiative (SARDI)**.
- This declaration, **signed by nine of the 14 range countries**, aims to reverse dolphin population declines, protect river habitats, promote research, and address unsustainable fishing practices.
- The **declaration** stresses the **under-recognized crisis facing river dolphins** and the **mutual responsibility to save them**, benefiting both rivers and wetlands.

Impact of climate change on both dolphins and human populations in Amazon:

- **River dolphins** inhabit major rivers in **Asia and South America**, impacting nearly 1 billion people living along these rivers.
- **Transport and water supply challenges due to low river levels**. Nearly half a million people are affected in the Amazonas state of Brazil alone.
- High temperatures in **Lake Tefé** caused **algae to release a neurotoxic toxin**.

Importance of Dolphins:

- **River dolphins, top predators** in some of the **world's largest river systems**, are **crucial for ecological balance** and serve as **indicators of ecosystem health**.
- **The six species of river dolphins are:** the Amazon river dolphin, the Ganges river dolphin, the Indus river dolphin, the Irrawaddy dolphin, the tucuxi, and the Indo-Pacific finless porpoise, with the Yangtze finless porpoise, sometimes considered a separate species.
- **All these species are threatened**, with the **baiji, a Yangtze River dolphin**, declared **likely extinct in 2007**.
- These dolphins face numerous threats, including **unsustainable fishing, climate change, pollution, illegal mining, direct hunting, and infrastructure construction**, leading to a **73% population decline since the 1980s**.
- Both **Asian and Amazonian river dolphin populations** are **decreasing**.

Efforts to save dolphins:

- In **China**, the **Yangtze finless porpoise population has increased by 23% over five years**, a critical success following the **extinction of the baiji** in the same river system.
- In **Indonesia**, signalling devices in fishing nets have **protected dolphins while benefiting local fish catches**.
- In **Pakistan and India**, the **Indus River dolphin population has nearly doubled in the past 20 years**.

Places in news:

1. **Lake Tefé- Brazil**
2. **Bogotá- Colombia**
3. **Cuyabeno Wildlife Reserve and Yasuní National Park- Ecuador**

Topic 40. RARE GOLDEN TIGER SNAPPED IN KAZIRANGA

Important for the subject: Environment

Gaurav Ramnarayanan, a wildlife photographer from Coimbatore, captured a rare golden tiger in Kaziranga National Park on January 24.

About Genetic Study by Researchers:

- The golden appearance results from a **genetic variant or mutation**, with the absence of black pigmentation and faded orange colour.

About Golden Tiger (Kazi 106 F)

- **Kazi 106 F Golden Tiger**, a tigress in Kaziranga National Park, Assam, is also known as

the ‘Tabby tiger’ or ‘Strawberry tiger.’

- **Tigers typically have orange-yellow skin with black stripes** and a whitish abdominal region.
- The tigress’s colour variation is influenced by agouti and **tabby genes**, which control the yellow background and black stripes respectively, affecting the expression of pigments in her fur.

Kaziranga National Park

- Kaziranga National Park, located in Assam, India, spans Golaghat and Nagoan districts.
- Established in 1904, it gained National Park status in 1974 and was designated as a tiger reserve in 2007.
- Recognized as a UNESCO World Heritage Site in 1985, Kaziranga is situated along the Brahmaputra River.
- Designated an Important Bird Area by Birdlife International, the park hosts various migratory and resident bird species.
- Renowned for its ‘big four’ species—Rhino, Elephant, Royal Bengal Tiger, and Asiatic Water Buffalo.

Topic 41. INVASION OF NON-NATIVE SPECIES CAN LEAD TO ECOSYSTEM SHIFTS

Important for the subject: Environment

At a **Kenyan conservancy**, the **invasive big-headed ant** species disrupted a **mutualism** between **native ants** and **acacia trees**, in which the **native ants protected trees from grazers** in exchange for a **place to live**.

- When the **invasive ants** pushed out the **native ants**, the trees were left vulnerable to **overgrazing by elephants**, who browsed and broke trees at five to seven times the rate in areas with invasive ants.
- Due to a more open landscape, **lions were left without hiding places to stalk their preferred prey zebras**.

Mutualism:

- Mutualism is simply described as a relationship in which **both species benefit from one another**.
- This relationship might exist either inside a species or between two species.
- All living organisms, including humans, animals, birds, plants, and other microbes such as bacteria, viruses, and fungi, have a mutual interaction.

Types of Mutualism:

Obligate mutualism	<ul style="list-style-type: none"> • The relationship between two species in which both are entirely reliant on each other is known as obligatory mutualism. • The best examples of obligate mutualism are most symbiotic and some non-symbiotic symbioses. • For instance, consider the Yucca plant and the moth. • The yucca plant thrives in the southwestern United States' dry and arid climate. • The pollination mechanism of the yucca flower is dependent on the moth. • By laying its eggs on the blossom and feeding the larvae with the seeds, the moth benefits as well.
Facultative mutualism	<ul style="list-style-type: none"> • The partners in facultative mutualism can coexist without relying on each other. • They, on the other hand, create a diffuse association with a diverse range of species. • Example: Honeybees with plants. • Honey bees visit a variety of plant types in search of nectar, and these plants will be visited by a variety of insect pollinators for pollination.

<p>Trophic mutualism</p>	<ul style="list-style-type: none"> • The partners in trophic mutualism are specialized in complementary ways of obtaining energy and nutrients from one another. • Take, for example, cows and microbes. • The cellulose of the plant is indigestible to cows. • The bacteria found in cow rumens aid in the digestion of plant cellulose. • Bacteria, on the other hand, receive food and a warm environment, both of which are necessary for their growth and development.
<p>Defensive mutualism</p>	<ul style="list-style-type: none"> • In defensive mutualism, one partner receives food and shelter in exchange for defending the other against herbivores, predators, and parasites. • Aphids and ants are two examples. • Honeydew is produced by the aphids and delivered to the ants' nests at night to protect them from predators and accompany them. • The following morning, these aphids are brought back to the plant. • In exchange, ants benefit from the aphid's eggs, which they assemble and store in their nest chambers to withstand the chilly winter months.

Dispersive mutualism

- In dispersive mutualism, one partner receives nourishment in exchange for assisting flowers in pollen transmission.
- Honeybees with plants, for example.
- Honey bees fly from one flower to the next in search of nectar, which is needed to make honey; in exchange, plants benefit from pollination, as the honey bee spreads pollen from one plant to the next.

Significance of Mutualism:

- Around **80%** of **terrestrial plant species** rely on **mycorrhizal partnerships with fungi** to provide them with inorganic compounds and trace elements, making mutualistic interactions critical for the terrestrial ecosystem function.
- The proportion of **tropical rainforest plants** that have **seed dispersal mutualisms** with animals is estimated to be between **70** and **93.5 per cent**.
- Furthermore, **mutualism** is assumed to have fueled the evolution of much of the **biological diversity** we see today, including flower shapes (which are necessary for pollination mutualisms) and species co-evolution.
- **Mutualism** has also been linked to significant evolutionary events such as the formation of the eukaryotic cell and plant-mycorrhizal fungal colonization of land.

Topic 42. SHARK & RAY MEAT CONSUMPTION NO LONGER RESTRICTED TO INDIA'S TRIBAL & COASTAL PEOPLES: PAPER

Important for the subject: Environment

According to a new study the meat of sharks and rays, for long consumed by tribal and coastal people in India, has found favour among new demographic categories such as foreign tourists and Indian middle- and upper classes. This could lead to more unsustainable fishing of shark species, imperiling them in what is already the world's third biggest exploiter of sharks and rays.

Sharks in India

- Sharks are a group of elasmobranch fish that are characterised by a cartilaginous skeleton, five to seven-gill slits on the sides of the head and pectoral fins that are not fused to the head.
- They are ancient fish, the earliest known sharks date back to more than 420 million years. They range widely in size, from 17 centimetres to nearly 12 metres. There are about 500

- different species of sharks in the world.
- **Sharks live long.** They **grow and sexually mature slowly**. Unlike most bony fish, they reproduce fewer pups at a time. Many shark species are apex predators, essential for the ecosystem they thrive in
 - India's waters have about 160 species of sharks, out of which ten are legally protected, listed under **Schedule 1 of the Wildlife Protection Act, 1972** – whale shark which was the first fish species to be protected in India.
 - Pondicherry shark which is on the brink of extinction, Gangetic shark which is one of the few freshwater and estuarine sharks in the world (now extinct), speartooth shark, freshwater sawfish, green sawfish, and the giant guitarfish which is becoming rare as it is caught for shark fin soup popular in south-east Asia.
 - Sharks have especially been targeted for their fins to make 'shark fin soup', considered a delicacy in East Asian cuisine.
 - The process involves cutting the fins of a live shark on board a fishing vessel and then throwing it overboard to die a painful death.
 - Over a third of shark and ray species are threatened with extinction globally and overfishing driven by human consumption is a key threat to over 95 per cent of these threatened species, the authors added.
 - Sharks and rays have been consumed for centuries by communities living on India's long coastline as well as tribal groups.

The study enumerates a number of species that are eaten in the country:

- Spadenose shark (*Scoliodon laticaudus*; Near Threatened)
- Milk shark (*Rhizoprionodon acutus*; Vulnerable)
- Gray sharpnose shark (*R. oligolinx*; Near Threatened)
- Reticulate whiplay (*Himantura uarnak*; Endangered)
- Reticulate whiplay
- **Shark finning and shark fin exports are banned in India**, but there are no restrictions on consuming shark meat, except for the species that are protected

Topic 43. FIRST PENGUIN DEATHS IN SUB-ANTARCTIC REGION ATTRIBUTED TO BIRD FLU STRAIN

Important for the subject: Environment

Weeks after scientists suspected and **confirmed deaths of elephant and fur seals due to bird flu (H5N1)** in the **British Overseas Territory (BOT)** of **South Georgia** and the **South Sandwich Islands** near **Antarctica**, there are now reports of at least three **penguin** deaths

from the region.

Penguin species: King penguin, and Gentoo penguin.

Places: South Sandwich Island, Falklands, and South Georgia.

- About **98 per cent** of the **global population** of **fur seals** was found in **South Georgia**. The region hosted “**globally important populations of elephant and fur seals**”.
- A **risk assessment** conducted by researchers warned about the **virus ripping across densely populated colonies of penguins** by the **austral (southern) spring** that may lead to “**one of the largest ecological disasters of modern times**”.
- So far, **no suspected or confirmed case of infection** has been reported from **mainland Antarctica**.

Avian Influenza:

- It is a **highly contagious viral disease** which has **swept populations of birds and mammals** across the world.
- Since **2021**, its variant known as **HPAI H5N1 clade 2.3.4.4b** has been **dominated** and **caused outbreaks**, leading to the **deaths of millions of birds in the United Kingdom, South America, Europe and South Africa**.
- In **October 2023**, **bird flu** arrived in the **sub-Antarctic region** after travelling from **South America through sea birds**.
- It infected **elephants and fur seals, brown skua, penguins, pelicans, sea lions and kelp gulls** among others, resulting in **mass infection and mortality**.
- In **December 2023**, the **first death** of a **polar bear** due to **avian flu** was reported from the Arctic.

Topic 44. INDIA HAS 718 SNOW LEOPARDS; MOST OF THEM LIVE IN UNPROTECTED AREAS: CENTRE

Important for the subject: Environment

Status Report of Snow Leopards in India released on **January 30, 2024**, indicates that there are **718 snow leopards** in the country.

- The report highlights a **significant concern**: only **34%** of their **120,000 square kilometre habitat in India** is under **legal protection**.
- This leaves about **70%** of their **crucial habitat** unprotected.

- To address this, the report recommends the establishment of a dedicated **Snow Leopard Cell** at the **Wildlife Institute of India** in **Dehradun**, under the **Union Ministry of Environment, Forest and Climate Change**.
- The cell's goal would be to **monitor snow leopard populations** over the long term, conduct organized studies, and carry out consistent field surveys.
- The report suggests that **states and Union territories** consider adopting a **periodic population estimation approach** every **four years** within the **snow leopard** range to help identify challenges, address threats, and formulate **effective conservation strategies**.
- Additionally, it calls for a **revised assessment** of the **number of snow leopards in India**, updating the earlier estimate of **400-700**, in light of the **global estimate of 4,000-7,500 snow leopards**.

Counting snow leopards:

- The **Snow Leopard Population Assessment in India (SPAI)**, conducted over **four years (2019-2023)** by the **Wildlife Institute of India (WII)** along with the **Nature Conservation Foundation, Mysuru** and **World Wildlife Fund for Nature-India**, focused on assessing snow leopard populations in India.
- Researchers installed **camera traps** at **1,971 locations** across the **Union Territories of Ladakh and Jammu and Kashmir** and in the **states of Himachal Pradesh, Uttarakhand, Sikkim, and Arunachal Pradesh**. These traps captured images of **241 unique snow leopards**.
- The report reveals that the **highest number of snow leopards** is found in **Ladakh (477)**, followed by **Uttarakhand (124)**, **Himachal Pradesh (51)**, **Sikkim (21)**, and **Jammu and Kashmir (9)**.
- **Snow leopard occupancy** was recorded over **93,392 square kilometres**, with an estimated presence of **100,841 square kilometres**.
- It's noted that **systematic surveys of snow leopards** began in the **1980s**, initially focusing on the **western Himalayas**, especially in **Ladakh**, and later expanding to **Himachal Pradesh** and **Uttarakhand**.
- Until recently, the **snow leopard's range in India** was **undefined** due to a **lack of comprehensive nationwide analysis**.
- Before **2016**, only about **five per cent** of the region in **Ladakh, Jammu & Kashmir, Uttarakhand, and Himachal Pradesh** was covered. The latest assessment now covers **80 per cent** of the area, compared to **56 per cent** in **2016**.

About Snow Leopard:

- Also known as **Ghost of the mountains**, acts as an **indicator of the health of the mountain ecosystem** in which they live, due to their position as the top predator in the

food web.

- They live at **high altitudes** in the steep mountains of **Central and Southern Asia** and an extremely cold climate.
- They inhabit the higher Himalayan and trans-Himalayan landscape in the states/union territories of **Jammu and Kashmir, Himachal Pradesh, Uttarakhand, Sikkim, and Arunachal Pradesh.**
- India is a unique country to have a good presence of 5 big cats, including **Snow Leopard.** The other 4 are **Lion, Tiger, Common Leopard, and Clouded Leopard.**
- **Snow Leopard capital of the world:** Hemis, Ladakh.
- **Threat:** Factors that have contributed to the decline in the snow leopard populations include, reduction in prey populations, illegal poaching and increased human population infiltration into the species habitat and illegal trade of wildlife parts and products among others.

Protection:

- IUCN Red List- **Vulnerable**
- **Convention on International Trade in Endangered Species (CITES)- Appendix I**

Convention on Migratory Species (CMS)- Appendix I

- Appendix I includes species threatened with extinction.
- **Indian Wildlife (Protection) Act 1972- Schedule I**
- Schedule I provides absolute protection and offences under this have the highest penalties.

Conservation Efforts Launched by India:

- **Himal Sanrakshak:** It is a community volunteer programme, to protect snow leopards, launched on 23rd October 2020.
- In 2019, the **First National Protocol** was also launched on Snow Leopard Population Assessment which has been very useful for monitoring populations.
- **SECURE Himalaya: Global Environment Facility (GEF)-United Nations Development Programme (UNDP)** funded the project on the conservation of high-altitude biodiversity and reducing the dependency of local communities on the natural ecosystem.
- This project is now operational in four snow leopard range states, namely, Jammu and Kashmir, Himachal Pradesh, Uttarakhand, and Sikkim.
- **Project Snow Leopard (PSL):** It was launched in 2009 to promote an inclusive and participatory approach to conserving snow leopards and their habitat.

- Snow Leopard is on the list of **21 critically endangered species** for the recovery programme of the Ministry of Environment Forest & Climate Change.
- **Snow Leopard conservation breeding programme** is undertaken at **Padmaja Naidu Himalayan Zoological Park, Darjeeling, West Bengal.**

Topic 45. RUSSIA BLAMES KYIV FOR ATTACK ON GAS TERMINAL AT BALTIC SEA PORT

Important for the subject: International Relations



The Kremlin blamed Ukraine for an attack that started a fire at a gas terminal at the Baltic port of Ust-Luga.

It is part of the **North Atlantic Ocean**, situated in Northern Europe.

It extends northward from the latitude of southern Denmark almost to the Arctic Circle and separates the Scandinavian Peninsula from the rest of continental Europe.

- The Baltic sea connects to the **Atlantic Ocean through the Danish Straits.**
- It is the **largest expanse of brackish water in the world.** Its water salinity levels are lower than that of the World Oceans due to the inflow of fresh water from the surrounding land and the sea's shallowness.
- **Surrounding Countries: Denmark, Germany, Poland, Lithuania, Latvia, Estonia,**

Russia, Finland and Sweden.

- **Depth:** Its depth averages 55 meters, and the deepest part is approximately 459 meters below the sea's surface.
- **The Baltic Sea contains three major gulfs:** The **Gulf of Bothnia** to the north, the **Gulf of Finland** to the east, and the **Gulf of Riga** slightly to the south of that.
- More than 250 rivers and streams empty their waters into the Baltic Sea. Neva is the largest river that drains into the Baltic Sea.
- **Islands:** It is home to over 20 islands and archipelagos. Gotland, located off the coast of Sweden, is the largest island in the Baltic Sea.

What are the Baltic Nations?

- These are three countries of north-eastern Europe, on the eastern shore of the Baltic Sea.

Baltic Nations are Estonia, Latvia and Lithuania.

- They are bounded on the west and north by the Baltic Sea, on the east by Russia, on the southeast by Belarus, and on the southwest by Poland and an exclave of Russia.

Topic 46. SERUM INSTITUTE OF INDIA JOINS GLOBAL NETWORK TO BOOST PRODUCTION OF AFFORDABLE OUTBREAK VACCINES

Important for the subject: International Relations

The **Serum Institute of India (SII)** is joining the **CEPI network (Coalition for Epidemic Preparedness Innovations)** to **enhance vaccine production capabilities** in the **Global South**.

- This collaboration **aims** to support faster, more agile, and equitable responses to future disease outbreaks. **CEPI's ambitious goal** is to have vaccines ready for initial authorization and large-scale manufacturing within **100 days of identifying a pandemic pathogen**.
- The inclusion of **SII** in this network is expected to significantly boost vaccine production efforts in the **Global South** and help achieve the **100 Days Mission**.
- This **initiative** combines the rapid development of vaccines with improved surveillance for earlier detection of pandemics, along with interventions like testing, contact tracing, and social distancing to suppress disease transmission.
- **CEPI** believes this approach will give the world a better chance to contain and control future pathogenic threats, thereby avoiding the devastating impacts seen with COVID-19.
- The **manufacturing network** will focus on vaccine producers in the **Global South**, particularly in regions at **high risk of outbreaks** from viruses like **Lassa Fever**,

Nipah, Disease X, and other pathogens prioritized by **CEPI**.

- The Global South generally includes Africa, Latin America, the Caribbean, most of Asia (excluding a few countries), and Oceania (excluding Australia and New Zealand).
- **CEPI** is investing up to **\$30 million** to expand **SII's capacity** for rapid response to infectious disease outbreaks. This investment will enhance SII's ability to quickly supply investigational vaccines during epidemics and pandemics.
- It will enable swift technology transfer to partners at the onset of an outbreak, facilitating rapid production and equitable distribution of affordable vaccines.

Coalition of Epidemic Preparedness for Innovation (CEPI):

- The CEPI is a foundation that takes donations to finance independent research projects to develop vaccines against emerging infectious diseases (EID).
- It is focused on the **WHO's "blueprint priority diseases"**.
- These diseases include the **Middle East respiratory syndrome-related coronavirus (MERS-CoV)**, the **SARS coronavirus 2**, the **Nipah virus**, the **Lassa fever virus**, and the **Rift Valley fever virus**, as well as the **Chikungunya virus** and the hypothetical, unknown pathogen **"Disease X"**.
- CEPI investment also requires **"equitable access"** to the vaccines during outbreaks.
- CEPI was conceived in 2015 and formally launched in 2017 at the World Economic Forum (WEF) in Davos, Switzerland.

Topic 47. TURKEY'S PARLIAMENT APPROVES SWEDEN'S NATO MEMBERSHIP

Important for the subject: International Relations

Sweden's attempt to join NATO cleared a major hurdle after Turkey's parliament supported its membership.

- For a new country to join the North Atlantic Treaty Organization (NATO), **all the existing members have to approve it**.
- Turkey and Hungary had been opposing Sweden's entry for almost the past two year.

About NATO

- Formed in **1949** with the signing of the Washington Treaty, NATO is a **security alliance of 31 countries from North America and Europe**.
- In April 2023, Finland joined the alliance as its 31st member.
- NATO's fundamental goal is to **safeguard the Allies' freedom and security by political and military means**.

- It is a system of **collective defence** where independent member states agree for mutual defence in case of any attack by external party.
- **Article 5 of the Washington Treaty** states that an attack against one Ally is an attack against all. This article forms the core of the Alliance, a promise of collective defense.

Headquarter – Brussels, Belgium

Functions

- **Political:** NATO promotes democratic values and enables members to consult and cooperate on defence and security-related issues to solve problems, build trust and, in the long run, prevent conflict.
- **Military:** NATO is committed to the peaceful resolution of disputes.
- If diplomatic efforts fail, it has the military power to undertake crisis-management operations.

Topic 48. THE ISSUE OF GENOCIDE AND THE WORLD COURT

Important for the subject: International Relations

On December 29, 2023, the **Republic of South Africa** instituted proceedings against **Israel** in the International Court of Justice (ICJ)

About International Court of Justice

- The ICJ is the **principal judicial organ of the United Nations (UN)**.
- It is the only one of the six principal organs of the UN that is not located in New York City.
- **Establishment:** It was established in June 1945 by the Charter of the UN and began work in April 1946.
- **Precursor:** 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.
- After World War II, the League of Nations and PCIJ were replaced by the UN and ICJ respectively.
- **Role of ICJ:** 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 UN organs and specialized agencies.

Official Languages: English and French.

- **ICJ Jurisdiction:** 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.
- 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.

What is Genocide Convention?

- The **Convention on the Prevention and Punishment of the Crime of Genocide (Genocide Convention)** is an instrument of international law that codified for the first time the crime of genocide.
- The **Genocide Convention was the first human rights treaty** adopted by the General Assembly of the UN on 9 December 1948.
- It signified the international community's commitment to 'never again' after the atrocities committed during the **Second World War**.
- Its adoption marked a crucial step towards the development of international human rights and international criminal law as we know it today.
- According to the Genocide Convention, **genocide is a crime that can take place both in time of war as well as in time of peace**.
- The definition of the crime of genocide, as set out in the Convention, has been widely adopted at both national and international levels, including in the **1998 Rome Statute of the International Criminal Court (ICC)**.

Topic 49. SENEGAL'S PINK LAKE IS ON THE VERGE OF DISAPPEARING — HOW TO PROTECT IT

Important for the subject: International Relations



Lake Retba:

Lake Retba, also known as **Lac Rose**, is situated approximately **35km** from **Dakar**, **Senegal**, and is famous for the **pink colour** of its waters.

It lies **north** of the **Cap Vert peninsula**.

The lake, **6.5 meters below sea level**, is **separated from the sea** by about **1km of dunes**.

Its **water**, primarily sourced from the sea, is **highly saline** and **supports only a few microscopic algae and bacteria**.

- The **Pink Lake** is a **major tourist attraction** in the **Dakar region**, but its appeal is declining.
- Additionally, the **lake** is a site for **artisanal salt mining**, involving 1,500 to 3,000 people and producing an estimated 140,000 tonnes of salt annually, distributed nationally and in neighbouring countries.

Why does the water turn pink?

- The **pink colouration of Lake Retba's water** is due to the presence of the **halophilic green algae Dunaliella salina**, which **thrives in salty environments**.
- This **algae** contains **red pigments** and is often found alongside **halophilic bacteria** of the genus **Halobacterium**.
- **Dunaliellasalina's** ability to **withstand high salt concentrations** is attributed to its **high levels of carotenoid pigments**, which protect it from **light**, and its significant **glycerol content**.
- This **algae** also contains at least **four antioxidant pigments: beta-carotene, astaxanthin, lutein, and zeaxanthin**, all of which are **rich in vitamins** and trace elements.
- The **lake's pink hue** intensifies when the **salinity is high**, promoting the proliferation of **algae with red pigments**, while lower salinity levels favour the growth of other **algae with green pigments**.

Challenges:

- **Salt accumulation at Lake Retba** is causing **significant challenges** on both its **southern and northern shores**.
- On the **southern shore**, the introduction of a **drainage channel** in August 2022, meant for **wastewater and rainwater disposal** from nearby suburbs, has led to **two major issues**:
- first, the **accumulation of solid particles** is contributing to the **filling in of the lake**, and second, the **dilution of the lake's water** has **resulted in lower salinity**.

- This **reduced salinity hinders salt harvesting** and is **not conducive to the growth of the green alga *Dunaliella salina***, which requires high salinity for development.
- The **northern shore** faces different **challenges**. **Motorized traffic** is **threatening the stability of dunes**, which are **anchored by ageing casuarina trees**.
- The destruction of these trees could lead to the **spread of quicksand into the depression**.
- Additionally, the **lake's water supply through the dunes is at risk** due to the **shallow nature of the aquifers (both fresh and saltwater)** and the **rapid urbanization** in the northern area.
- The **northern part of the lake** features **ponds scattered across the area**, located where a **former channel** once connected the lake to the sea.
- Now filled in by sand from the dunes, the **northern part** of these ponds has been lost, while the southern part remains.

Topic 50. INDIAN AIR FORCE CONDUCTS EXERCISE DESERT KNIGHT WITH FRANCE, UAE OVER ARABIAN SEA

Important for the subject: International relations

- **India, UAE, and France** conducted the **Desert Knight exercise** over the **Arabian Sea**. On 23 Jan 24, the Indian Air Force (IAF) conducted Exercise Desert Knight along with the French Air and Space Force (FASF) and United Arab Emirates (UAE) Air Force.
- French President Emmanuel Macron is scheduled to be in India as the Chief Guest for India's 75th Republic Day celebrations from January 25-26.

About various contingents:

- The participation of the **French included the deployment of Rafale fighter aircraft and a Multi-Role Tanker Transport**, while the **UAE Air Force contributed the F-16**.
- These aircraft operated from **the Al Dhafra air base in the UAE**.
- The IAF contingent comprised **Su-30 MKI, MiG-29, Jaguar, AWACS, C-130-J, and Air to Air Refueler aircraft**.

Desert Knight Exercise:

- The main focus of the **Desert Knight exercise** was on enhancing synergy and interoperability among the three air forces.
- It was a large force engagement roughly equidistant from the coastlines of **India and the UAE**.

- This joint exercise took place amid growing global concerns regarding Houthi rebels attacking commercial vessels in the region's vital waterways.
- The exercise was conducted within the **Indian FIR (Flight Information Regions)**, with **IAF aircraft operating from various bases in India.**
- The global airspace is divided into **Flight Information Regions (FIRs).**
- **Each FIRs** is overseen by a **controlling authority tasked with ensuring the provision of air traffic services** for aircraft operating within its jurisdiction.

Other Defence Exercises between India and France:

1. **Varuna** – Naval exercise
2. **Garuda** – Air exercise
3. **Shakti** – Army exercise

Defense exercise between Indian and UAE:

- **Desert cyclone** – Military exercise
- The first edition of the India-UAE military exercise aims to enhance interoperability through exchanging knowledge and sharing best practices in military operations.
- The Exercise is scheduled to be conducted in Mahajan, Rajasthan from 2nd to 15th January 2024.

Topic 51. INDIA'S STANCE ON FISHERIES SUBSIDIES AT WTO

Important for the subject: International Relations

Asymmetrical Agreement Rejection:

India refuses to agree to an “**asymmetrical**” **agreement on reducing fisheries subsidies that lead to overfishing.** Specific carveouts are insisted upon to **protect resource-poor fishers and preserve the space for capacity development.**

Protection of Livelihood:

- The livelihoods of 9 million people, mainly **resource-poor and dependent on fishing, need protection. India demands exemption for poor fishers from subsidy cuts, regardless of their fishing locations.**

Exemption for Developing Nations:

- India seeks exemption for all fishers in developing nations **from subsidy cuts within the exclusive economic zone (EEZ) of 200 nautical miles.** A 25-year exemption from subsidy cuts for fishing in waters beyond EEZ is also requested.

Special & Differential Treatment:

- These demands align with the **concept of special and differential treatment for developing nations**. India emphasizes the **need to safeguard the interests of developing countries in WTO negotiations**.

Upcoming WTO Meeting:

- Trade Ministers from 164 WTO nations will convene in Abu Dhabi on February 24-29 to negotiate various agreements, **including curbing fisheries subsidies contributing to overcapacity and overfishing**.

Partial Agreement Status:

- While a partial agreement on curbing harmful fisheries subsidies was reached at the previous WTO MC12 in 2021, **only about 55 nations have adopted it so far, falling short of the required 110**.

Concerns about Developed Nations:

- India criticizes developed nations, including the EU, Japan, Norway, the US, and **even non-developed nations like China, for their distant water fishing practices and extensive subsidies to their fishing communities**.

Equitable Resource Sharing:

- India asserts that **environmental concerns should be shared equitably**. Developed nations, having different capacities, should bear more substantial cuts to create space for others' development.

Challenges in Global Fishing Dynamics:

- Developed nations, having historically developed deep-sea capacities, **now limit entry to protect their positions, creating challenges in international fishing dynamics**.

Call for Equitable Responsibility:

- India maintains that **if there are environmental concerns, responsibilities should be shared equitably, with developed nations taking on more significant cuts to accommodate the development of others**.
- **Adoption of Agreement on Fisheries Subsidies (AFS) at WTO Ministerial Conference:**

About the Agreement:

- Prohibits subsidies for Illegal, Unreported, and Unregulated (IUU) fishing and overfished stocks.

- Restricts subsidies for fishing on high seas beyond coastal jurisdictions.
- Special and Differential Treatment (S&DT) allows Developing and Least Developed Countries a two-year transition period without obligations.

Exempted Areas:

- No prohibition on subsidies for vessels not engaged in IUU.
- Permits subsidies for overfished stocks if aimed at rebuilding to a sustainable level.

Global Fisheries Subsidies:

- Estimated at \$35.4 billion in 2018; \$22.2 billion for capacity-enhancing subsidies.
- UN General Assembly tasked **WTO to deliver an agreement against harmful fisheries subsidies.**

India's Demand:

- India seeks a 25-year transition period to **end over-capacity and over-fishing (OCOF) subsidies within its EEZ.**
- Rooted in national interest **due to India's extensive coastline and the importance of the blue economy.**
- Aims to protect livelihoods, especially of small-scale artisanal fishers.

Fisheries Sector in India:

- Recognized as a powerful income and employment generator.
- 3rd largest fish-producing and 2nd largest aquaculture nation globally.
- **Pradhan Mantri Matsya Sampada Yojana (PMMSY) focuses on the sustainable development of the fisheries sector.**

Related Government Initiatives in India's Fisheries Sector:**Fishing Harbours:**

- Development of **major Fishing Harbours (Kochi, Chennai, Visakhapatnam, Paradip, Petuaghat).**
- Transformation into hubs of economic activity to support the fisheries industry.

Seaweed Park in Tamil Nadu:

- Establishment of a **Multipurpose Seaweed Park in Tamil Nadu.**
- Center for the production of high-quality seaweed-based products, utilizing a hub-and-

spoke model.

Pradhan Mantri Matsya Sampada Yojana (PMMSY):

- Objective: **Creation of direct employment for 15 lakh fishers, fish farmers, etc.**
- Indirect employment opportunities expected to be three times the direct employment.
- Aims to double the incomes of fishers, fish farmers, and fish workers by 2024.

Palk Bay Scheme:

- Launched in 2017 as a Centrally Sponsored Scheme.
- **Part of the umbrella Blue Revolution Scheme.**
- Focus on **diversification of trawl fishing boats from Palk Straits into deep-sea fishing boats.**

Special and Differential Treatment (S&DT):

- S&DT is a set of provisions in international trade agreements **that offers preferential treatment to developing countries, recognizing their unique challenges and needs.**

Objective:

- To **address the developmental, financial, and trade-related constraints** faced by developing nations.

Key Features:

- **Flexibilities:** Provides flexibility in meeting certain commitments or obligations, considering the developmental stage of the country.
- **Transitional Periods:** Allows extended timelines or transition periods for implementing certain provisions.
- **Technical Assistance:** Includes support in capacity building, technology transfer, and financial assistance.
- **Market Access:** Grants preferential market access, including tariff reductions and exemptions.

Topic 52. INDIA FRANCE COOPERATION

Important for the subject: International Relations



French President Emmanuel Macron is the chief guest at Republic Day 2024 celebrations.

This will be the sixth time that a French leader will be the Chief Guest at the Republic Day celebrations.

- In December 2023, when India invited French President Emmanuel Macron for Republic Day after US President Joe Biden was unavailable.
- Macron accepted despite knowing he was the second choice, showing the comfort between the French and the Indian system.
- Chirac, an admirer of India who had studied Sanskrit, saw India as a major emerging power and pushed for boosting political and economic cooperation.
- This is **Macron's third visit** to India as the French President and these visits will have the chance to elevate our relationships further.
- The comprehensive Roadmap between India and France, which was adopted last year in July during Prime Minister Narendra Modi's visit as Guest of Honour for Bastille Day, was classified under three pillars ie
- **Partnership for Security and Sovereignty;**
- **Partnership for the Planet; and Partnership for People.**

Various partnerships:

25th anniversary of strategic partnership:

- Macron's visit caps a milestone year for India-France ties i.e. the **25th anniversary of their strategic partnership.**
- The India-France Strategic Partnership was the first that India signed with any western

country.

- This partnership has seen considerable progress in bilateral, regional and international contexts.
- The partnership draws strength, trust and consistency from a shared sense of strategic autonomy and sovereignty, a quest for a multi-polar world, and a natural affinity for democratic values and rule of law.
- Defense and security, civil nuclear matters, and space constitute principal pillars of this partnership.
- It now includes a **strong Indo-Pacific component**.

Major pillars of cooperation

Defense:

- India and France have had a strong and robust defense partnership.
- Bilateral defense cooperation between the two sides is reviewed under **Annual Defence Dialogue (Defence Minister level) and High Committee on Defence Cooperation (Secretary level)**.
- **A DRDO office was opened in the Embassy in 2023** for strengthening technology cooperation.
- The procurement of Rafale jets as part of India's air power is a testament to the deep defense ties.
- India France joint defense exercises have also grown in scope and complexity over the years.

Space:

- There's a rich history of cooperation in the field of space for over 50 years between **ISRO and the French Space Agency, Centre National D'Etudes Spatiales (CNES)**.
- France remains a major supplier of components and equipment for the Indian space programme.

Civil Nuclear Cooperation:

- During the PM's visit to Paris in July 2023, both leaders welcomed the progress made during discussions related to the **Jaitapur Nuclear Power Project (JNPP)**.
- However, the progress here has been slow, though the first pact was agreed in 2008.
- The two sides have also agreed to establish a partnership on **Small Modular Reactors (SMR) and Advanced Modular Reactors (AMR)**.

Economic:

- **France is one of the largest investors in India with FDI inflow of US\$ 659.77 million** for FY 2022-23 (as of June 2023) and a cumulative FDI stock of \$10.76 billion from April 2000 to September 2023.
- There are over 70 Indian companies employing over 8,000 employees in France.
- For FY 2023-24 (till August 2023), Indian exports to France totaled \$3.06 billion and imports from France totaled \$2.36 billion.
- India's main exports include engineering goods, petroleum products, pharmaceutical products, electronic equipment and ready-made garments.
- The main imports from France are aviation products, machine equipment, electrical equipment and chemical products.

Digital:

- **Unified Payments Interface (UPI)** was launched from the Eiffel Tower to offer secure and convenient transactions for Indian visitors and NRIs.
- C-DAC and M/S Atos, an European multinational IT service and consulting company based in France have developed **14 supercomputers for India which also included the fastest supercomputer Param Siddhi at 4.6 petaflops/second.**

Education:

- It is estimated that there are about 10,000 Indian students in France. An agreement on mutual recognition of degrees was signed in 2018.
- The **Indo French Campus for Health was also launched in June 2022** to offer double degrees.
- During Modi's visit, France announced the issuing of a five-year Schengen visa to Indian alumni who have completed at least one semester of their Master's degree in France, a first for alumni from any country.

Community in France:

- Mainland France has an estimated 1,19,000 Indian community (including NRIs) members, largely originating from erstwhile **French colonies of Puducherry, Karaikal, Yanam, Mahe and Chandernagore and the States of Tamil Nadu, Gujarat and Punjab.**

Tourism:

- About 2.5 lakh French traveled to India in 2019 while about 7 lakh Indians went to France for tourism.
- Rajasthan continues to lead among all Indian destinations for French tourists. Foreign

tourist arrivals into Rajasthan are growing at a double digit since 2016.

Support on international fora

- France has continued to support India's claim for permanent membership of the **United Nations Security Council** and the reforms of the United Nations.
- France's support was vital in India's accession to the **Missile Technology Control Regime (MTCR)**, **Wassenaar Arrangement (WA)** and **Australia Group (AG)**.
- France continues to support India's bid for accession to the Nuclear Suppliers Group (NSG).
- India and France have resolved to work together for adoption of the **Comprehensive Convention on International Terrorism (CCIT)** in the UN.

Other areas of discussion:

- The current visit will give Modi and Macron an opportunity to exchange notes on issues of mutual interest such as the
- **Russia-Ukraine war, Israel-Hamas war, China's assertiveness in the Indo-Pacific, and defense and security cooperation.**

Topic 53. RESTORING LAKE VICTORIA: CSE, TANZANIAN AUTHORITIES HOLD MULTI-NATION STAKEHOLDER CONSULTATION

Important for the subject: International Relations



On January 23, 2024, a **multi-nation stakeholder consultation** was held in **Dar es Salaam**, organized by the **Centre for Science and Environment (CSE)** in **India** and **Tanzania's National Environment Management Council (NEMC)**.

This meeting **aimed** to develop strategies for **restoring the lake**, which is essential for the livelihoods of around 45 million people.

- **Lake Victoria** is facing serious **environmental challenges**.
- The **lake's ecosystem** is at risk due to **heavy pollution** and requires urgent intervention to prevent irreversible damage.
- The **lake** is **shared** by **Tanzania (51%)**, **Uganda (44%)**, and **Kenya (5%)**, and the consultation was attended by representatives from these countries, as well as **Burundi** and **Rwanda**.
- Previously, **CSE** and **NEMC** had identified **Mwanza town** in **Tanzania** as a **major pollution hotspot** and released a report and a management strategy for cleaning the lake and sustaining its ecological integrity.
- The efforts aim to improve Lake Victoria's water quality and ensure sustainable use.

About Lake Victoria:

- **Lake Victoria** is **one of the African Great Lakes**. With a surface area of approximately 59,947 km² (23,146 sq mi), **Lake Victoria** is **Africa's largest lake by area**, the **world's largest tropical lake**, and the **world's second-largest freshwater lake** by surface area after **Lake Superior** in **North America**.
- In terms of volume, **Lake Victoria** is the **world's ninth-largest continental lake**.

Lake Victoria occupies a shallow depression in Africa.

- The **lake's area** is **divided among three countries**: **Tanzania** occupies **49%** (33,700 km² (13,000 sq mi)), **Uganda 45%** (31,000 km² (12,000 sq mi)), and **Kenya 6%** (4,100 km² (1,600 sq mi)).
- **Lake Victoria** is considered to be **part of the Rift Valley system** although it **lies between the two branches**. All of the **African Great Lakes** were formed as the result of the **rift**, and most lie in territories within the rift.

Topic 54. CLIMATE CHANGE, WAR DISRUPTING GLOBAL TRADE IN 3 KEY SEA LANES OF BLACK SEA, RED SEA & PANAMA CANAL: UNCTAD

Important for the subject: International Relations

UN body warns that prolonged interruptions, particularly in container shipping, poses a direct threat to global supply chains

- The United Nations Conference on Trade and Development (UNCTAD) expressed

concern on January 26, 2024, over increasing disruptions in global trade caused due to the impact of climate change and war on shipping in three key sea lanes: The Black Sea, the Red Sea and the Panama Canal.

Black Sea

- The disruption in global trade first began on February 24, 2022, when Russian troops invaded Ukraine on the express orders of President Vladimir Putin.
- Russia also launched a blockade of Ukrainian Black Sea ports such as **Odessa** and **Mykolayiv** through which much of the global supply of wheat, sunflower oil and maize was exported through 'choke points' like the **Straits of the Bosphorus** and **Dardanelles** to the **Mediterranean** and globally.
- Russia and Ukraine signed a landmark deal — The **Black Sea Grain Initiative** brokered by the United Nations and Turkey— in Istanbul on July 22, 2022, to allow the resumption of Ukrainian grain exports from ports on the Black Sea. In July 2023, Russia refused to renew the initiative after it expired.

Panama Canal

- The Panama Canal, running across the **isthmus of Panama** that connects **North and South America**, saves time for ships travelling between the Atlantic and Pacific Oceans by five months.
- Ships would otherwise have to travel to **Cape Horn** or the **Strait of Magellan** at the southern tip of **South America**.

Red Sea

- Global trade has also been affected in the Red Sea, which connects the **Mediterranean (through the Suez Canal at its northern end)** with the **Indian Ocean (through the Strait of Bab El Mandeb in the south)**.
- The Houthis of Yemen have been attacking shipping in the waterway in the wake of the Israel-Gaza Conflict which began on October 7, 2023.

Impact:

- Avoiding the Suez and Panama Canal necessitates **more days of shipping**, resulting in **increased expenses**. The price per day of shipping and insurance premiums have surged, compounding the overall cost of transit.
- Additionally, ships are compelled to travel faster to compensate for detours, burning more fuel per mile and emitting more CO₂, further exacerbating environmental concerns,

Topic 55. PHILIPPINES AND VIETNAM SIGN DEAL ON SOUTH CHINA SEA***Important for the subject: International Relations***

The Philippines and Vietnam signed agreements on to prevent incidents in the South China Sea and broaden cooperation between their coast guards in a growing alliance that will likely be frowned upon by China, which claims virtually the entire waters.

- The agreement focuses **on enhancing information sharing** and training exchanges between the Vietnamese and Philippine militaries forged. Both sides agreed to boost trade and investment and signed a key deal **on rice**.

About South China Sea:

- It is an arm of the western Pacific Ocean that borders the Southeast Asian mainland.
- **Boundaries:** It is bordered by China, Taiwan, the Philippines, Malaysia, Indonesia, Brunei, and Vietnam.
- It is connected by the **Taiwan Strait** with the East China Sea and by the Luzon Strait with the Philippine Sea (both marginal seas of the Pacific Ocean).
- The South China Sea and the East China Sea together form the China Sea. The two major archipelagos are known as the **Paracel Islands, controlled by China, and the Spratly Islands**.
- **Climate:** Weather in the sea is tropical and largely controlled by monsoons.
- It is the second most used sea lane in the world. It is a significant trade route for crude oil from the Persian Gulf and Africa through the Strait of Malacca to Singapore, Thailand, Hong Kong, Taiwan, South Korea, and Japan.
- **Major Ports:** Hong Kong, Singapore, and Kaohsiung in southern Taiwan.

What is the South China Sea dispute?

- Several countries claim various parts of the sea, and these claims often overlap.
- In particular, China's sweeping claims – which include sovereignty claims over land parcels and their adjacent waters – have angered competing claimants like **Vietnam, the Philippines, Taiwan, Malaysia and Brunei**.
- Other countries have staked claims on islands and various zones in the sea, such as the Paracels and the Spratlys.

Nine-dash line:

- China claims by far the largest portion of territory in an area demarcated by its so-called “nine-dash line”. The line comprises nine dashes, which extend hundreds of miles south and east from its most southerly province of Hainan.

Topic 56. CORRUPTION PERCEPTIONS INDEX (CPI) – 2023

Important for the subject: International Relations

The **Corruption Perceptions Index (CPI)** is an annual index published by **Transparency International**, which ranks countries and territories by their perceived levels of public sector corruption.

- The index is based on assessments and surveys from experts and business people, and **countries are scored on a scale of 0 to 100, where 0 indicates high corruption, and 100 indicates very clean.**

Key Points under Corruption Perceptions Index (CPI) 2023:

- **Ranking:** India slipped from **85 in 2022 to 93 in 2023** on the CPI.
- **Score Fluctuations:** India's overall CPI score was **39 in 2023**, a slight decrease from **40 in 2022**. The report notes small score fluctuations, preventing firm conclusions.
- **Civic Space:** The report highlights a further narrowing of civic space in India, especially due to the passage of a **telecommunication bill** that could pose a “grave threat” to fundamental rights.

Global and Regional Observations:

- The global average CPI score is **43 out of 100**.
- Seventy-one percent of countries in **Asia and the Pacific** have a CPI score below the regional average of **45**.
- India's ranking is better than its neighbors in **South Asia**, with Pakistan at **133** and Sri Lanka at **115**.
- **Top Countries:** Countries with high scores indicating lower corruption levels include **New Zealand, Singapore, Australia, Hong Kong, Japan, Bhutan, Taiwan, and South Korea**.
- **Bottom Countries:** Fragile states with authoritarian regimes, such as **North Korea and Myanmar**, are at the bottom of the index. Afghanistan faces one of the worst humanitarian crises.

Transparency International:

- **Foundation, Location, Mission and Purpose:**
- Founded in **1993**.

International non-governmental organization.

- Headquarters: **Berlin, Germany.**

Non-profit organization.

- Aims to combat **global corruption** through civil societal anti-corruption measures.
- Focus on **preventing criminal activities stemming from corruption.**

Global Initiatives:

- Engages in international efforts to **fight corruption** at various levels.
- Collaborates with governments, organizations, and civil society to promote transparency and integrity.

Key Publications:

- **Global Corruption Barometer:** Highlights public perceptions of corruption and provides insights into people's experiences and attitudes.
- **Corruption Perception Index (CPI):** Ranks countries based on perceived levels of public sector corruption.

Corruption Perception Index (CPI):

- Measures corruption on a scale of **0 to 100** (0 highly corrupt, 100 very clean).
- Published annually, providing a comparative analysis of corruption levels globally.

Global Advocacy:

- Transparency International serves as a global advocate for anti-corruption measures.
- **Works towards building alliances and partnerships to address corruption challenges.**
- Involves civil society in the fight against corruption.
- Encourages public awareness and participation to create a collective impact.
- Emphasizes the importance of **transparency** and **accountability** in governance.
- Promotes ethical practices in both public and private sectors.

Topic 57. FIRST MEETING OF THE SOCIAL AUDIT ADVISORY BODY (SAAB) HELD

Important for the subject: Polity

The 1st meeting of the **Social Audit Advisory Body (SAAB)** was held on 18th January 2024 at the conference hall, **Dr Ambedkar International Centre, New Delhi.**

The meeting commenced with a welcome address by the **Director of the National Institute**

of Social Defense (NISD).

- Deputy Director General of the Statistic Division of DoSJE – cum – convener of SAAB presented an overview of social audits, emphasizing on the importance of this social accountability tool in promoting transparency and accountability.

About the meeting:

- The Meeting was chaired by the **Secretary, Department of Social Justice & Empowerment.**
- This **advisory body is a first of its kind** and has been established to guide the Ministry in institutionalizing social audits for its various schemes.
- Representatives from key ministries and academic institutions, including the
- Ministry of Health & Family Welfare,
- Department of Persons with Disabilities,
- Ministry of Women and Child Development,
- Department of Social Justice & Empowerment,
- Ministry of Rural Development, National Institute of Rural Development,
- Tata Institute of Social Sciences,
- Delhi School of Social Work and
- Indian Institute of Public Administration are members of this advisory body.
- The Department of Social Justice and Empowerment has taken a pioneering step by establishing the **National Resource Cell for Social Audit (NRCSA) to ensure social audits through dedicated Social Audit Units at the state level.**
- The NRCSA team presented the approach of **social audit processes developed and implemented by the department** and their significant impact on the schemes' effective implementation.
- Members of the SAAB provided valuable inputs to **strengthen the social audit process** and align it more closely with the principles of social justice.

About Social Audit Advisory Body:

- The body has been set up under **National Institute of Social Defense (NISD).**
- It aims to improve the quality of services being delivered by **grant-in-aid (GIA) institutions**, by way of social audits of the schemes and institutions of the ministry.

About National Institute of Social Defence:

- The **National Institute of Social Defence (NISD)** is an **autonomous body** under the **Ministry of Social Justice and Empowerment**.
- The **National Institute of Social Defence (NISD)** was set up originally as the **Central Bureau of Correctional Services** in **1961**, under the **Ministry of Home Affairs**.
- Since **1975** the institute has been a **subordinate office** under the Ministry of Social Justice & Empowerment.
- The National Institute of Social Defence is the **nodal training and research institute in the field of Social Defence**.
- It imparts training and conducts courses (long & short term) in the field of Social Defence which includes **Old Age Care, Drug Abuse Prevention, Transgender Beggary Prevention and other Social Defence issues**.
- Develops **preventive, curative and rehabilitative tools, programmes and policies in the field of Social Defence, undertakes research, training, consultancy, documentation and publication in the field of Social Defence**

Topic 58. DELHI HC PROTECTS ANIL KAPOOR'S PERSONALITY RIGHTS: WHAT THEY ARE, HOW HAVE COURTS RULED

Important for the subject: Polity

The Delhi High Court in September allowed Kapoor's pleas for protection of his personality rights from misuse by third parties.

- Celebrities can move the Court and seek an injunction when an unauthorized third party uses their personality rights for commercial purposes. Intellectual property rights specialist Pravin Anand distinguished unauthorized use from "fair use."
- A fair use would be for example depiction in news, teaching material or other non-commercial uses or even artistic uses like mimicry or satire which is a copy but not mere reproduction. However, if a third-party uses it to profit from it, it cannot be termed fair use.

What is a personality right?

- The name, voice, signature, images or any other feature easily identified by the public are markers of a celebrity's personality and are referred loosely as "personality rights."
- Any feature easily identified by the public as markers of a celebrity's personality and are referred loosely as "personality rights."
- The idea is that only the owner or creator of these distinct features has the right to derive any commercial benefit from it.
- These could include a pose, a mannerism or any aspect of their personality. Rajinikanth's

name, Amitabh Bachchan's baritone and now Anil Kapoor's style, are some of the personality rights that celebrities are trying to protect.

- Many celebrities even register some aspects as a trademark to use them commercially.
- For example, Usain Bolt's "bolting" or lightning pose is a registered trademark.
- Exclusivity is a big factor in attracting commercial dividends for celebrities.

How does the law protect the right?

- Personality rights or their protection are not expressly mentioned in a statute in India but are traced to fall under the right to privacy and the right to property.
- Delhi High Court and the Madras High Court have passed interim orders, the law is at a nascent stage in India.
- In the case of Anil Kapoor, the Delhi High Court granted an ex-parte, omnibus injunction restraining 16 entities from using Kapoor's name, likeness, image, using technological tools like Artificial Intelligence, face morphing and even GIFs for monetary gain or commercial purpose.

When can the Court grant an injunction?

- In the Titan case, the HC in its order listed out the "basic elements comprising the liability for infringement of the right of publicity."
- First, the right has to be valid. This means that the Court must be satisfied that the "plaintiff owns an enforceable right in the identity or persona of a human being."
- Second, is that the celebrity has to be easily identifiable in the alleged misuse.
- On how to prove that the celebrity is identifiable, the HC said that a simple "unaided identification" should be enough if the celebrity is well-known.

Topic 59. SC STATUS CAN'T BE GIVEN TO DALITS WHO CONVERTED TO ISLAM & CHRISTIANITY: CENTRE TO SC

Important for the subject: Polity

Centre has told the Supreme Court. The Constitution (Scheduled Castes) Order, 1950 does not suffer from any "unconstitutionality" and the exclusion of Christianity and Islam was due to the reason that the "oppressive system" of untouchability was not prevalent in either of these two religions.

- The Constitution (Scheduled Castes) Order, 1950, says that no person professing a religion other than Hinduism, Sikhism and Buddhism shall be deemed to be a member of a Scheduled Caste (SC).
- The government told the Supreme Court it has not accepted the report of the Justice

Ranganath Misra Commission.

- Ranganath Misra Commission had recommended inclusion of Dalit Christians and Dalit Muslims in the Scheduled Castes list as it was “flawed”.
- The Centre recently appointed a commission headed by former Chief Justice of India (CJI) **K G Balakrishnan** to examine giving SC status to new people who claim to “historically” have belonged to the SCs but have converted to a religion other than those mentioned in the Presidential orders.

Key highlights:

- The government has highlighted these issues in a reply filed in the apex court to a plea which alleged.
- The Constitution (Scheduled Castes) Order, 1950 is discriminatory and violative of Articles 14 (equality before law) and 15 (prohibition of discrimination on grounds of religion, race, caste etc) of the Constitution.
- The Centre recently appointed a commission headed by former Chief Justice of India (CJI).
- K. G Balakrishnan to examine giving SC status to new people who claim to “historically” have belonged to the SCs but have converted to a religion other than those mentioned in the Presidential orders.
- It said the Constitution (Scheduled Caste) Order, 1950 was based on historical data which clearly established that no such backwardness or oppression was ever faced by the members of Christian or Islamic society.

Basis of the decision:

- One of the reasons for which people from Scheduled Castes have been converting to religions like Islam or Christianity is that they can come out of the oppressive system of untouchability which is not prevalent at all in Christianity or Islam.
- Once they have come out and ameliorated their social status by converting themselves to Christianity or Islam, they cannot claim to be backward since backwardness based on untouchability is only prevalent in Hindu Society

Article 341 of the constitution:

- Centre has examined the matter and noted that certain groups of persons who have historically suffered social inequality, discrimination and the consequent backwardness resulting therefrom, have been declared to be Scheduled Castes by Presidential Orders issued from time to time under Article 341 of the Constitution.
- Articles 341 and 342, empower the President of India to draw up a list of scheduled castes and tribes.

- If such a notification is related to a state, then also the President will notify the same. However, it can be done after consultation with the governor of the state
- Any inclusion or exclusion from the presidential notification of any caste, race, or tribe can be done by Parliament by Law.
- If any question arises whether or not a particular tribe is a tribe within the meaning of this article one has to look at the public notification issued by the president.

Topic 60. ON EQUAL ACCESS TO BENEFITS FOR ALL SCS

Important for the subject: Polity

The Union government has formed a high level committee of secretaries, chaired by the Cabinet Secretary, to evaluate and work out a method for the equitable distribution of benefits, schemes and initiatives to the most backward communities among the over 1,200 Scheduled Castes (SCs) across the country, that have been crowded out by relatively forward and dominant ones.

About Sub-categorisation of SCs

- Sub-categorisation of SCs aims to address the intra-group disparities by creating smaller groups based on socio-economic and educational indicators. The goal is to ensure a more equitable distribution of reservation benefits among SCs.
- The concept of sub-categorisation has sparked debate due to its complexities and potential challenges. It involves redefining and restructuring the existing reservation system, which has both supporters and critics.

Arguments in favour

- Existence of **graded inequalities among SC communities**. Even among the marginalised, there are communities that have lesser access to basic facilities.
- As a result, the relatively more forward communities among them have managed to avail benefits consistently while crowding the more backward ones out.
- The solution, therefore, is to sub-categorise the communities and provide separate reservation to the more backward communities within the reservation meant for SCs.

Arguments against

- Allotting separate reservations within the categories would not really address the root cause of the problem.
- The idea behind sub-categorisation was to ensure representation at all levels.
- But given the disparity, even if posts were reserved at higher levels, these most backward SCs would not have enough candidates to be considered for it in the first place.

- Hence, the existing schemes and government benefits should first reach these sections before any sub-categorisation.
- Also, legal experts have pointed out the necessity to have concrete data to support sub-categorisation.
- In this context, they present the case of a caste census of each community and sub-community and their respective socio-economic data.
- As per them, caste census can be the only empirical basis on which the government can justify sub-categorisation of benefits and how much extra share of benefits each community is in need of.

Legal and Political Developments

- **Supreme Court Rulings:** The Supreme Court has upheld the legality of sub-categorisation within SCs, provided it is based on quantifiable data and serves a legitimate purpose.
- **State-Level Implementation:** Several states, including Tamil Nadu, Punjab, and Haryana, have implemented sub-categorisation, showcasing the varied approaches at the state level.
- **Central Government's Stance:** The central government has been cautious, setting up committees to examine the issue but has not yet implemented nationwide sub-categorisation, reflecting the need for a comprehensive and considered approach.

Constitutional Provisions For Upliftment of the Schedule Caste

- **Article 15(4)** refers to the special provisions for their advancement.
- **Article 16(4A)** speaks of “reservation in matters of promotion to any class or classes of posts in the services under the State in favour of SCs/STs, which are not adequately represented in the services under the State’.
- **Article 17** abolishes Untouchability.
- **Article 46** requires the State ‘to promote with special care the educational and economic interests of the weaker sections of the people, and, in particular, of the Scheduled Castes and the Scheduled Tribes, and to protect them from social injustice and all forms of exploitation.

- **Article 335** provides that the claims of the members of the Scheduled Castes and the Scheduled Tribes shall be taken into consideration, consistently with the maintenance of efficiency of administration, in the making of appointments to services and posts in connection with the affairs of the Union or of a State.
- **Article 330** and Article 332 of the Constitution respectively provide for reservation of seats in favour of the Scheduled Castes and the Scheduled Tribes in the House of the People and in the legislative assemblies of the States.
- **Article 338** provides for Constitution of NCSC to safeguard rights of SCs.
- Under Part IX relating to the Panchayats and Part IXA of the Constitution relating to the Municipalities, reservation for SC and ST in local bodies has been envisaged and provided.

Key Issues and Challenges

- **Defining Criteria:** Determining appropriate criteria for sub-categorisation, such as social, economic, educational, and occupational indicators, is crucial to ensure accurate classification.
- **Data Collection:** Accurate and reliable data on SC communities is essential for effective implementation and addressing the unique challenges faced by different sub-groups.
- **Political Consensus:** Building consensus among SC groups and political parties is necessary to avoid conflicts and ensure a smooth implementation process.
- **Legal Challenges:** Potential legal challenges, based on claims of discrimination or violation of constitutional rights, need to be anticipated and addressed.
- **Administrative Capacity:** Ensuring that the administrative machinery can handle the complexity of sub-categorisation is crucial for successful implementation.

Topic 61. CAUVERY WATER REGULATION COMMITTEE AN UNBIASED PLATFORM, SAYS UNION MINISTER

Important for the subject: Polity

The **Cauvery Water Regulation Committee (CWRC)** is an unbiased platform working towards best management of water resources.

All India Secretaries Conference on Water Vision @2047-Way Ahead– Organised by the **National Water Mission** of the **Ministry of Jal Shakti**, and coordinated by the **Tamil Nadu Water Resources Department**.

Improvements in groundwater management in India:

- Enhanced aquifer mapping, leading to evidence-based management and a significant reduction in overexploited and critical groundwater areas.
- Groundwater assessment units have shown a near 10% improvement due to better recharge strategies.
- The frequency of aquifer mapping has been increased. Groundwater mapping has covered nearly 25 lakh sq. km. in India.
- Initiatives like the **Atal Bhujal Yojana** to rejuvenate stressed aquifers and identify areas needing recharge.
- Recycle and reuse policy.

About the Cauvery water dispute:

- The dispute is related to a **long-standing conflict over the sharing of water** from the **Cauvery River**.
- It involves **3 states and one Union Territory: Tamil Nadu, Kerala, Karnataka and Puducherry**.
- The dispute revolves around how the river water should be distributed among these states for various uses, including irrigation, drinking water, and industrial purposes.

Formation of the Cauvery Water Disputes Tribunal and its final award:

- In accordance with **Section 4 of the Inter-State Water Disputes Act, 1956**, the **Cauvery Water Disputes Tribunal (CWDT)** was formed in **June 1990**.
- **Final Award of CWDT (2007):** After 17 years, in **February 2007**, the **CWDT** issued its final award. It allocated the **Cauvery basin water** (740 TMC in a normal year) as follows: **Tamil Nadu – 419 TMC, Karnataka – 270 TMC, Kerala – 30 TMC, and Pondicherry – 7 TMC**.
- Additionally, **10 TMC was reserved for environmental purposes and 4 TMC for inevitable outlets into the sea**.
- The tribunal also called for a **monitoring authority** but did not detail a formula for water shortage situations, stating that allocations should be proportionally reduced.
- **Subsequent Developments:** The government notified the order in **2013** following a Supreme Court directive. **Tamil Nadu** appealed to the **Supreme Court**, alleging **Karnataka's non-compliance** with the **tribunal's award**.

- In 2018, the Supreme Court largely upheld the CWDT's arrangements, slightly altering the allocations: Karnataka – 284.75 TMC, Tamil Nadu – 404.25 TMC, Kerala – 30 TMC, and Puducherry – 7 TMC.
- The Court declared Cauvery a national asset and directed the central government to notify the Cauvery Management Scheme.
- **Cauvery Water Management Scheme (2018):** The central government formed the 'Cauvery Water Management Authority' (CWMA) and the 'Cauvery Water Regulation Committee' (CWRC) in June 2018 to implement the scheme.
- The Cauvery Water Regulation Committee (CWRC) was later established to implement and monitor the CWDT's award and regulate the distribution of water according to its provisions.
- The committee's responsibilities include monitoring water releases from Karnataka's reservoirs and ensuring that the allocated amounts of water are delivered to Tamil Nadu, Kerala, and Puducherry as per the established formula.

Constitutional Provisions:

- **Entry 17** of the **State List** deals with **water** i.e., water supply, irrigation, canal, drainage, embankments, water storage and hydropower.
- **Entry 56** of the **Union List** empowers the Union Government for the regulation and development of **inter-state rivers and river valleys** to the extent declared by Parliament to be expedient in the public interest.

According to Article 262, in case of disputes relating to waters:

- Parliament may by law provide for the adjudication of any dispute or complaint with respect to the use, distribution or control of the waters of, or in, any inter-State River or river valley.
- Parliament may, by law, provide that neither the Supreme Court nor any other court shall exercise jurisdiction in respect of any such dispute or complaint as mentioned above.

Topic 62. IS RIGHT TO ESTABLISH MINORITY INSTITUTION CONTINGENT ON STATE RECOGNITION: SC TO GOVT

Important for the subject: Polity

Chief Justice of India D.Y. Chandrachud, heading a sevenjudge Bench, asked whether a minority community's right to establish an educational institution or university be dependent on State recognition.

Minority Educational Institution(MEI):

- The minority educational institution is one that has been set up by either a linguistic or the

religious minority group.

- Minority institutions have the fundamental right under Article 30 of the Constitution to establish and administer their educational institutions according to their choice.
- However, they cannot ignore the regulations recommended by the state.
- **Article 29 and 30** of Indian Constitution contain provisions securing rights of minorities and minority-run institutions.
- The **Art 30** cannot be viewed in the isolation and also needs to be read with Art 26(a) which states that religious denominations can establish institutions for the religious and also the charitable purposes as determined by SC in **TMA Pai Foundation Case**.
- **Under the Art 30(1) (a)**, MEI enjoy the right to education as a Fundamental Right. But, in case the property is taken over by the state, due compensation to be provided to establish institutions elsewhere.

Judicial Recognition Of Aligarh Muslim University

- A five judge Bench, in S. Azeez Basha versus Union of India case in 1967, had held that AMU was a Central university and cannot be considered a minority institution.
- The university, established in 1875, had got its minority status back when the Parliament enacted the AMU (Amendment) Act in 1981.
- In January 2006, the Allahabad High Court, however, struck down the provision of the 1981 law, by which the university was accorded the minority status.
- The issue was referred to a seven-judge Bench in 2019.

Topic 63. FORMER BIHAR CHIEF MINISTER KARPOORI THAKUR TO BE AWARDED BHARAT RATNA POSTHUMOUSLY

Important for the subject: Polity



President Droupadi Murmu has conferred the Bharat Ratna posthumously to two-time

Bihar chief minister and socialist icon Karpoori Thakur

The announcement to honor **Karpoori Thakur with India's highest civilian** award comes a day before his 100th birth anniversary.

About Karpoori Thakur:

- Thakur served as the **chief minister of Bihar** from December 1970 to June 1971 and from December 1977 to April 1979.
- Thakur belonged to the **Nai (barber) community** that is listed as an Extremely Backward Class (EBC) among the Other Backward Classes (OBCs) in the state and was from Pitaunjhia (now known as Karpoori Gram) a Rajput-dominated village in the Samastipur district.
- He is often remembered as the **“voice of the oppressed and the downtrodden”**. Also called **‘jannayak’**, he is widely considered as the pioneer of OBC and EBC reservations in the country.

About his political career:

- He made his debut as a legislator when he won the 1952 elections and remained one till his last Assembly election in 1985.
- Thereafter he faced an electoral loss when he contested from Samastipur in the 1984 Lok Sabha polls, in the wake of Indira Gandhi's assassination.
- After 1980, Karpoori was dubbed an EBC leader, a tag that he was not able to shed till the end of his life.
- His reservation policy drew a lot of criticism from the public.
- In 1988, 42 upper caste people were killed by Naxalites in the Dalelchak Bhagoda village and Thakur

About layered reservation regime:

- As the CM in 1978, he implemented a **layered reservation regime**.
- The quota system which is an unparalleled one at that time provided a 26% reservation model in which
- **OBCs got 12%,**
- **EBCs from among OBCs got 8%,**
- **women got 3%, and economically backward classes (EBWs) from among the upper castes got 3%.**

About Bharat Ratna:

- The Bharat Ratna is the **highest civilian award of the Republic of India**.
- Instituted on **2 January 1954**, the award is conferred in recognition of “**exceptional service/performance of the highest order**”, without distinction of race, occupation, position, or sex.
- The award was originally limited to achievements in the **arts, literature, science, and public services**, but the government expanded the criteria to include “**any field of human endeavor**” in December 2011.
- The recommendations for Bharat Ratna are made by the **Prime Minister himself to the President**.
- **No formal recommendations** for this are necessary.
- The number of annual awards is restricted to a maximum of **three in a particular year**.
- The recipients receive a **Sanad (certificate) signed by the President** and a peepal leaf-shaped medallion.
- There is no monetary grant associated with the award.
- Bharat Ratna recipients **rank seventh** in the Indian order of precedence.
- Till now, the award has been bestowed upon **49 individuals, including 15 who were awarded posthumously**.
- The original statutes did not provide for posthumous awards but were amended in January 1955 to permit them.
- There is **no formal provision** that recipients of the **Bharat Ratna should be Indian citizens**.
- It has been awarded to a naturalized Indian citizen i.e. **Mother Teresa in 1980** and to **two non-Indians i.e. Abdul Ghaffar Khan of Pakistan in 1987** and the former **South African president Nelson Mandela in 1990**



- The Padma Awards are **announced annually on the eve of Republic Day** (26th January).
- Instituted in the year 1954, it is one of the highest civilian honours of India.
- The Award seeks to recognize achievements in all fields of activities or disciplines where **an element of public service is involved**.
- The Awards are given in three categories:
 - Padma Vibhushan (for exceptional and distinguished service),
 - Padma Bhushan (distinguished service of higher-order) and
 - Padma Shri (distinguished service).
- The Awards are given in various disciplines/ fields of activities, viz.- art, social work, public affairs, science and engineering, trade and industry, medicine, literature and education, sports, civil service, etc.
- The Awards are conferred on the recommendations **made by the Padma Awards Committee, which is constituted by the Prime Minister every year**.
- The awards are presented by the President of India usually in the month of March/April every year.
- The award **does not amount to a title** and cannot be used as a suffix or prefix to the awardees' name.
- The total number of awards to be given in a year (excluding posthumous awards and to NRI/foreigners/OCIs) **should not be more than 120**.

Topic 64. UNION GOVT. MAKES IT CLEAR THAT AADHAAR CARD NO PROOF OF CITIZENSHIP, BIRTH DATE

Important for the subject: Polity

New Aadhaar cards and PDF versions now explicitly state that they are only proof of identity, not citizenship or date of birth.

- Government departments and organizations are cautioned against using Aadhaar for citizenship or birth date verification.

Aadhaar has never served as proof of citizenship, as **even foreign nationals living in India for 180 days are eligible to obtain one**.

- Offline authentication of Aadhaar requires scanning the QR code or using an XML file issued by UIDAI.
- Some organizations, like the **Employees Provident Fund Organization (EPFO)**, no

longer accept Aadhaar as proof of birth date based on a recent circular.

- **Updates:** A 2018 memorandum clarified that Aadhaar is not proof of birth date.

About Aadhaar

- Aadhaar, a **12-digit unique identification number**, is issued by the **UIDAI** to every Indian resident.
- Brought by **Aadhaar (Targeted Delivery of Financial and Other Subsidies, Benefits and Services) Act, 2016**.
- It serves as **proof of identity, tied to biometric and demographic data**.
- **Launched in 2009**, the Aadhaar program aims to offer a distinct and verifiable identity for all Indian residents.

Citizenship

- **Citizenship** is listed in the **Union List** under the **Constitution** and thus is under the exclusive jurisdiction of Parliament.
- The **Constitution** does not define the term '**citizen**' but details of various categories of persons who are entitled to citizenship are given in Part 2 (Articles 5 to 11).
- Unlike other provisions of the Constitution, which came into being on January 26, 1950, these articles were enforced on November 26, 1949 itself, when the Constitution was adopted.

Topic 65. 17TH LOK SABHA MAY ENTER HISTORY WITH LEAST NUMBER OF LAPSED BILLS

Important for the subject: Polity

Bills		
	Pending/ lapsed In LS	Assented after passed by both Houses
17 th Lok Sabha	05 (pending)*	162*
16 th Lok Sabha	45 (lapsed)	162
15 th Lok Sabha	60 (lapsed)	146
14 th Lok Sabha	36 (lapsed)	167
13 th Lok Sabha	46 (lapsed)	173
*At the end of Winter Session Source: Lok Sabha website		

The 17th Lok Sabha may end with a unique distinction in terms of the number of bills lapsed. Going by the current trend, it could be in the low single digit.

As the last session of the 17th Lok Sabha approaches on January 31, the number of pending

bills was just five.

According to the data provided by the Lok Sabha, these include

- **The Constitution (Jammu and Kashmir) Scheduled Castes Order (Amendment) Bill,**
- **The Constitution (Jammu and Kashmir) Scheduled Tribes Order (Amendment) Bill,**
- **The Electricity (Amendment) Bill,**
- **The Prohibition of Child Marriage (Amendment) Bill and**
- **The Maintenance and Welfare of Parents and Senior Citizens (Amendment) Bill.**
- Even if one of them is not taken up during the budget session, the number of bills lapsed will just be five, which is the lowest so far. The tenure of **17th Lok Sabha is ending on June 16.**

Constitutional provisions:

- **Articles 109 and 117 of the Constitution** deals with respect to Money Bills and other financial Bills.
- A Bill may originate in either House (Lok Sabha or House of People and Rajya Sabha or House of States) of Parliament.
- A Bill shall not be deemed to have been passed by the Houses of Parliament unless it has been agreed to by both Houses, either without amendment or with such amendments only as are agreed to by both Houses.

About Lapse of a parliamentary bill:

- A Bill pending in Parliament shall not lapse by reason of the prorogation of the Houses.
- A Bill pending in the Council of States which has not been passed by the House of the People shall not lapse on a dissolution of the House of the People.
- A Bill which is pending in the House of the People, or which having been passed by the House of the People is pending in the Council of States, shall Important for the subject to the provisions of Article 108, lapse on a dissolution of the House of the People.
- A bill pending in Lok Sabha lapses on dissolution of the house. A bill passed by Lok Sabha but pending in Rajya Sabha lapses.
- A bill passed by both the house but pending for assent of the president does not lapse
- A bill passed by both the Houses but returned by the president for reconsideration of houses does not lapse.

Topic 66. GSI FORMULATES 1055 PROGRAMS FOR FIELD SEASON 2024-25, FOCUS ON STRATEGIC AND CRITICAL MINERALS LIKE LITHIUM

Important for the subject: Geography

The **Geological Survey of India (GSI)** has planned **1055 scientific programs** for its **2024-25 Field Season**, including **392 mineral development projects**, which cover **G2, G3, G4, and offshore explorations**.

- A significant focus is on **discovering strategically important minerals**, especially **critical** ones like **lithium**.
- Additionally, there are **133 projects** aimed at mineral discovery, which show promise for future exploration at the **G4 stage**.
- **Minerals** such as **antimony, cobalt, gallium, graphite, lithium, nickel, niobium, and strontium**, among others, are **critical** for **green technologies, high-tech equipment, aviation, and national defence manufacturing needs**.
- **India** has a **high import dependence** for many of these minerals.

Strategically critical:

- In **FY-25**, the **Geological Survey of India (GSI)** approved **188 projects** focused on **strategically important mineral commodities**, such as **rare earth elements (REE), graphite, lithium, vanadium, and platinum group of elements (PGE)**.
- This represents a nearly **50% increase** from the previous year's target.
- Additionally, **111 projects** are dedicated to **natural hazard studies or public good geoscience with societal benefits**.

Rare Earth Elements (REEs):

- There are **17 REEs** — **15 lanthanides** (lanthanum, cerium, praseodymium; neodymium, promethium; samarium, europium, gadolinium, terbium, dysprosium, holmium, erbium, thulium, ytterbium and lutetium), scandium, and yttrium. The **lanthanide elements** are divided into **two groups** — **light and heavy**.
- **REEs** are used in industrial applications including electronics, clean energy, aerospace, automotive and defence.
- The manufacture of **permanent magnets** is the **single largest and most important end-use for REEs**, accounting for **43 per cent** of demand in 2021.

Exploration of REEs:

- The explorations are spread across states like **Chhattisgarh (Raigarh), Maharashtra (Nagpur, Chandrapur, and Sindhudurg),**
- **Bihar, Jharkhand (Giridih, Simdega, and Koderna), Odisha (Nayagarh, Ganjam, and**

Angul),

- **West Bengal** (Purulia), **Arunachal Pradesh** (Kurung Kumey), **Assam** (West Karbi Anglong), **Meghalaya** (South West Khasi Hills and Ri-Bhoi),
- **Uttar Pradesh** (Lalitpur and Sonbhadra), **Andhra Pradesh** (Anantapur, East Godavari, Alluri Sitharama Raju, Chittoor, Annamayya, Nellore, and Prakasam),
- **Kerala** (Kottayam, Idukki, Thiruvananthapuram, Kollam, and Wayanad), **Telangana** (Bhadradi and Jayashankar), **Tamil Nadu** (Kanyakumari),
- **Karnataka** (Chamarajanagar), **Gujarat** (Chhota Udepur, Aravalli, Mehsana, and Banaskantha), and **Rajasthan** (Alwar, Udaipur, Sirohi, and Barmer), among others.
- **National Mineral Exploration Trust (NMET):**
- The **NMET** was established by the **Government of India** in **2015**, in pursuance of **subsection (1) of Section 9C of the Mines and Minerals (Development and Regulation) Act, 1957**, with the **objective** of expediting mineral exploration in the country.

United Nations Framework Classification (UNFC):

- The **United Nations Framework Classification for Resources (UNFC)** is a resource project-based and principles-based classification system for **defining the environmental-socio-economic viability and technical feasibility of projects** to develop resources.
- UNFC provides a consistent framework to describe the level of confidence of the future quantities produced by the project.
- It is a **universally applicable scheme** for classifying/evaluating energy and mineral reserves/resources.
- It was **adopted in 2004** by the **United Nations Economic Commission of Europe (UNECE)**.
- The UNFC consists of a **3-dimensional system** with the following three axes:

The UNFC is a three-digit code-based system wherein:

1. First digit represents **economic viability axis**,
2. Second digit **represent feasibility axis**
3. Third digit represent **geologic axis**
4. Each of these axes has further codes in decreasing order.

E Axis:

- The degree of economic viability (economic or potentially economic or intrinsically

economic) is assessed in the course of pre feasibility and feasibility studies.

- A prefeasibility study provides a preliminary assessment with a lower level of accuracy than that of a feasibility study, by which economic viability is assessed in detail.
- The Economic viability has codes 1, 2 and 3 in decreasing order.

F Axis:

- Feasibility assessment studies form an essential part of the process of assessing a mining project.
- The typical successive stages of feasibility assessment i.e., geological study as initial stage followed by prefeasibility study and feasibility study/mining report are well defined.
- The feasibility assessment has codes 1, 2 and 3.

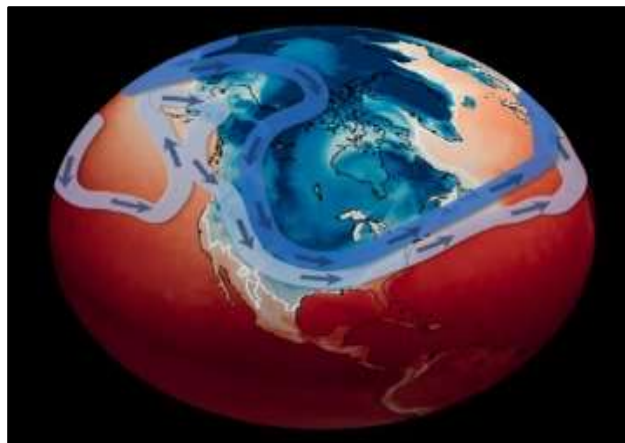
G Axis:

- Geological Assessment, which is more or less like the classification as per ISP adopted by GSI and other agencies in India.
- The process of geological assessment is generally conducted in stages of increasing details.
- The typical successive stages of geological investigation i. **reconnaissance, prospecting, general exploration and detailed exploration, generate resource data with clearly defined degrees of geological assurance.**
- The mineral extraction process **typically begins with the G4 stage.**
- These four stages are therefore used as geological assessment categories in the classification.
- The **geological assessment has 4 codes** i.e.
- **Detailed Exploration (G1)**
- **General Exploration (G3)**
- **Preliminary Exploration (G3)**
- **Reconnaissance (G4)**
- The **G3 stage is further categorised into a six-step process** to extract Lithium from Salt-flat brines or Mineral ores.
- **Stage 1:** Geological Surveys: Mapping on a more extensive scale and linking prepared maps with a top grid. Assessment of lithology, structure, surface mineralisation, analysis of old workings etc.
- **Stage 2:** Perform Geochemical sampling rock type wise, soil survey.

- **Stage 3:** Detailed ground geophysical work and borehole logging.
- **Stage 4:** Check the technicality of pits/trench to explore the mineralised zone and drill borehole spacing
- **Stage 5:** Sampling for litho geochemical from a well-known section, pit/trench and core sample
- **Stage 6:** Petrographic and mineralogical studies: the combined study of rocks in thin sections and the chemistry, crystal structure and physical properties of the mineral constituents of rocks.
- According to the **Indian Bureau of Mines (IBM)**, apart from the thorough examination of the above-mentioned geological axis, the proposal to mine minerals **also needs to be assessed from a feasibility point of view along with the prospects of economic viability.**

Topic 67. MAJORITY OF U.S. STATES REMAIN FROZEN AS ARCTIC WEATHER EXTREME LEAVES ITS MARK

Important for the subject: Geography



Sub-freezing temperatures and dangerous road conditions have led to **at least 72 deaths** in the U.S. this January, with states as far south as **Texas and Florida** affected by **deadly arctic weather**.

- Many of the deaths were due to **hypothermia or road accidents**. However, the **extreme cold** is expected to ease in the coming days.
- Residents are facing challenges with **basic needs** like **cooking and sanitation**, relying on **limited bottled water distribution**.
- The **cold weather** has also been deadly. **Travel** remains hazardous in parts of **Kansas and Oklahoma** due to **freezing rain and high winds**, while **Iowa** is experiencing **extremely low wind chills**.
- As temperatures are predicted to rise, there are concerns about the potential for bursting

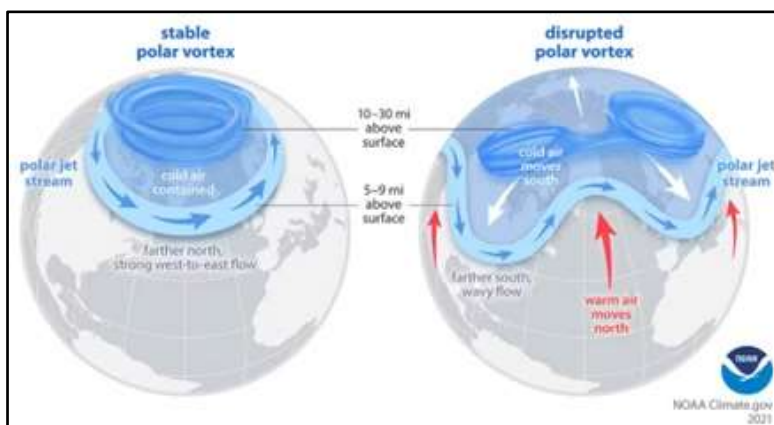
pipes.

End in sight:

- The U.S. is seeing the **end of the recent subzero temperatures**.
- The **National Weather Service** anticipates a steady warm-up for the central part of the country due to **no additional influx of Arctic air from Canada**.
- However, on the **West Coast**, particularly in the **Columbia River Gorge**, **freezing rain is forecasted**, with **temperatures** staying **near or below freezing**.
- This weather could lead to more **ice accumulation** on **trees** and **power lines**, increasing the risk of them **toppling**.
- The **National Weather Service** has warned of **hazards** from chunks of falling ice.

Why do extreme cold weather events still happen in a warming world?

- These **severe cold events** occur when the **polar jet stream** – the familiar jet stream of winter that runs along the boundary between the Arctic and more temperate air – **dips deeply southward**, bringing the **cold Arctic air to regions that don't often experience it**.
- They often **occur in association** with changes to another river of air even higher above the jet stream: the **stratospheric polar vortex**, a **great stream of air** moving around the **North Pole** in the **middle of the stratosphere**.
- When this **stratospheric vortex** becomes **disrupted or stretched**, it can **distort the jet stream** as well, pushing it **southward** in some areas and **causing cold air outbreaks**.



Places in news:

- **Columbia River Gorge: the USA**
- **Topanga Canyon: the USA**

Topic 68. INDIA TO SEND INDUSTRY DELEGATION FOR COPPER MINING OPPORTUNITIES IN ZAMBIA

Important for the subject: Geography



The **Indian Mines Ministry** is planning to send an industry delegation to **Zambia** to discuss **potential copper exploration and mining projects**.

Key Indian companies like **Vedanta** and its subsidiary **Hindustan Zinc**, **Ola Electric**, and **LOHUM** (a **lithium-ion battery recycler**) have shown interest in this initiative.

Zambia holds about **6%** of the **world's copper reserves** and was the **eighth-largest copper producer in 2022**.

- The second meeting of the **Joint Working Group (JWG)**, set up under a memorandum of understanding between **India** and **Zambia**, is scheduled to take place in **Zambia**.
- The meeting **aims** to facilitate collaboration between the **Indian public and private sectors** and the **Zambian mining industry**.
- **India** currently has a **limited presence** in **Zambia's copper mining sector**, with **Vedanta** recently **regaining control** of **Konkola Copper Mines**.
- The **growing domestic demand** for **copper** in **India**, particularly for **clean energy technologies**, and the **country's reliance** on **copper imports** make the acquisition of overseas copper mining blocks attractive.
- Other international companies, like **Canada's First Quantum Minerals** and **China's**

CNMC, are also significant players in **Zambia's copper industry**.

- **LOHUM**, however, clarified that its interest in the delegation does not extend to acquiring or exploring copper mining blocks in **Zambia**, as it focuses on **recycling lithium-ion batteries**.

Copper demand in India:

- As per **International Copper Association India**, **domestic copper demand** grew by **16 per cent** in **FY2022-24**, while **demand for copper in clean energy technologies** grew by **32 per cent**.
- At the same time, **net imports of copper cathode**, which is the **basic product of copper production**, grew by **180 per cent** in the same financial year as **India is not self-sufficient in copper** due to **low domestic reserves**.

About Copper Mining:

- **Copper** is a **chemical element** with a **distinctive reddish-brown colour**. It is an **excellent conductor of electricity and heat**.
- **Copper** is found in various **ores** in the **Earth's crust**. **Common copper minerals** include **chalcopyrite, bornite, chalcocite, and malachite**.
- **Copper mining** involves several stages, from the **discovery of copper deposits** to the **extraction and processing of the metal**.
- There are various **mining methods** used for **extracting copper**, and the choice depends on factors such as the **depth of the deposit, the type of ore, and economic considerations**.
- **Open-Pit Mining**: Used for **shallow deposits**. **Large pits** are excavated, and **ore** is extracted from the surface.
- It accounts for **80% of all copper mining operations** in the world.
- **Underground Mining**: Used for **deeper deposits**. Shafts or tunnels are dug to reach the ore underground.
- **Chile** is the **top copper producer** in the world, with **27% of global copper production**.
- **Chile** is followed by another **South American country, Peru**, responsible for **10% of global production**.

Copper Mining in India:

- There are approximately **700 copper mines** in operation globally, of which **127** are in **India**.
- However, **India is poor in terms of copper reserves & production**.
- **India** has **low-grade copper ore** (less than **1% metal content**) compared to the

international average of 2.5%.

- **Madhya Pradesh** is the **leading producer of copper in India**. It accounts for producing **53% of copper in this country**.
- **Rajasthan** accounts for **43%**, and **Jharkhand** accounts for **4%** of copper production in India.

Mine	State
1. Malanjkhand Mine	Madhya Pradesh
2. Khetri Mine	Rajasthan
3. Kolihan Mine	Rajasthan
4. Surda Mine	Jharkhand
5. Banwas Mine	Rajasthan

Topic 69. NEPAL EXPLORES TAPPING FLOOD-RISK GLACIAL LAKES FOR CLEAN POWER

Important for the subject: Geography

In an effort to turn a risk into a gain, **Nepal** aims to drain burgeoning glacial lakes and produce hydropower from the flow.

- In **Langtang, Nepal**, two villages near the **Tibet border** are utilizing a **glacial lake** as an **innovative power source**.
- Due to **climate change**, the **melting of mountain ice** is accelerating, creating a threat of **catastrophic flooding** from **rapidly filling glacial lakes**. However, this situation presents an **opportunity for clean energy production**.
- By **draining excess water** from these lakes to **reduce disaster risk**, **small hydropower generators** have been **installed** in the drainage channels.
- Since **2017**, **175 households** in **Langtang** and **Kyanjin** have gained access to **clean hydropower** for **cooking, lighting**, and other energy needs, significantly reducing their reliance on firewood.
- The **Kadoorie Charitable Foundation** funded the **\$448,000** hydropower project. Despite its success, expanding such solutions in **Nepal** is challenging due to **limited funding** and the **difficulties of working in high-mountain environments**.

Power from risk:

- In the Himalayas and other high mountain regions, communities face increasing risks from **glacial lakes** that are filling rapidly and can burst, causing devastating flash floods. For example the bursting of **Lhonak Lake** in **Sikkim**.
- **Nepal** has taken steps to mitigate such risks by channelling water from **high-risk**

lakes like Tsho Rolpa and Imja.

- **Thulagi Lake (Nepal)** holds a massive volume of water. By **channelling water from Thulagi to hydropower equipment**, it's possible to **generate 50 megawatts of electricity** consistently and **reduce the lake's water level**, significantly **lowering the risk of a catastrophic burst**

Funding dilemma:

- **Nepal**, in collaboration with the **UNDP**, is seeking **\$50 million** from the **Green Climate Fund**, with additional support from the government, **UNDP**, and the **private sector**, to reduce the **risk of floods** from the **Thulagi, Lower Barun, Lumding Tsho, and Hongu-2 lakes**.
- However, this proposal does not include hydropower generation plans

What are glacial lakes?

- A glacial lake is a body of water that originates from a glacier. It typically forms at the foot of a glacier, but may form on, in, or under it. As Earth's climate warms, the world's glaciers are shrinking, increasing freshwater outputs to all kinds of glacial lakes.
- Some communities depend on glacial meltwater for seasonal irrigation or domestic use, but as the balance shifts toward more melt, this water source may not be reliable in the long term and comes with new risks

How glacial lakes form?

- As glaciers move, they erode the terrain under them, leaving depressions and grooves on the land. When they churn up rock and soil, they etch ridges of debris known as moraines.
- Most glacial lakes form when a glacier retreats and meltwater fills the hole left behind. However, natural dams, formed out of ice and terminal moraines, can also form glacial lakes. An ice dam forms when a surging glacier, which can move up to 100 times faster than an average glacier, may dam up meltwater as it closes off a valley or fjord and prevents it from draining.
- Dams formed by moraines can be dense and stable, holding sizable lakes behind them for years. They can also be leaky, allowing the lake to drain slowly into nearby rivers. However, prolonged melting or abrupt bursts of intense melting can wreak havoc.
- Too much meltwater in a short period of time might overflow a lake or burst through natural barriers, flooding lands downstream, washing away communities, and damaging roads and infrastructure. Lakes held back by moraines pose a serious threat because the porous moraine walls can destabilize easily. A rise in the amount of meltwater from glaciers increases the water pressure on the moraine barriers, which can quickly give way

and threaten inundation.

Topic 70. TENSION IN MANIPUR AS RADICAL GROUP ARAMBAI TENGGOL ‘SUMMONS’ ALL 40 VALLEY-BASED MLAS TO KANGLA FORT

Important for the subject: Geography

Kuki groups claim that Arambai Tenggol has been involved in the killing of **Kuki-zos** since May last year.

- A team of the **Ministry of Home Affairs (MHA)** reached **Manipur** and camped in the state to keep watch on the situation.
- Kuki groups, however, expressed concern over reports about a meeting of the MHA team with **Arambai Tenggol in Imphal**.
- They claim that the BJP government in the state is in cahoots with Arambai Tenggol and another similar radical group MeeteiLeepun.
- **Radical Meitei group Aarambai Tenggol** “summoned” all **40 MLAs of Meitei-dominated Imphal Valley** for a meeting on Wednesday morning at the historic **Kangla Fort in Imphal**.

About Arambai Tenggol:

- **Arambai Tenggol is a Meitei organization** of around 50,000 people engaged in guarding villages in the valley areas of the state.
- It is a **Meitei activist organization** in the Indian state of Manipur.
- It is often described as a **radical organization**, or as a radicalized armed militia.
- Starting as a cultural outfit, it soon turned into a radical organization

About Meitei:

- The **Meitei people, Meetei people, or Manipuri people** are an ethnic group native to Manipur. They form the largest and dominant ethnic group of Manipur in Northeast India.
- Meitei officially known as **Manipuri is a Tibeto-Burman language of northeast India**.
- The Meiteis primarily settled in the valley areas in modern-day Manipur, though a sizable population has settled in the other Indian states of **Assam, Tripura, Nagaland, Meghalaya, and Mizoram**.
- There is also a notable presence of **Meitei people in the neighboring countries of Myanmar and Bangladesh**.
- The **Meitei ethnic group** represents about **53% of Manipur’s population**. It is the official language and the **lingua franca of Manipur**.

- It is one of the **22 official languages of the Indian Republic**, included in the **8th Schedule to the Indian Constitution**.

About Kuki tribe:

- The **Kuki people** are an ethnic group in the Northeastern Indian states of **Manipur, Nagaland, Assam, Meghalaya, Tripura and Mizoram**, as well as the neighboring countries of **Bangladesh and Myanmar**.
- The Kuki constitute one of several hill tribes within **India, Bangladesh, and Myanmar**. **In Northeast India, they are present in all states except Arunachal Pradesh.**

The Zou people or Zomi:

- They are an **indigenous community living along the frontier of India and Burma**.
- They are a subgroup of the **Zo people (Mizo-Kuki-Chin)**. In India, they live with and are similar in language and habits to the **Paite and the Simte peoples**.
- In India, the Zou are officially recognized as one of the thirty-three indigenous peoples within the state of Manipur, and are one of the Scheduled tribes.
- According to the 2001 Census, the **Zou/Jou population in Manipur** is around 20,000, less than 3% of the population.
- The community is concentrated in **Churachandpur and Chandel districts of Manipur**.

Topic 71. ONLINE SALES, ACCESS-CONTROLLED GATES HURTING BUSINESS, SAY KASHMIRI SHAWL SELLERS

Important for the subject: Geography



Online shopping has allowed people to buy shawls, pherans, and other items from Kashmir throughout the year and at more affordable prices

Pashmina Shawls:

- Pashmina is known world over as cashmere wool, **it comes from a special goat (Capra hircus) living at an altitude of 12000 to 14000 ft.**
- Shawls are produced by two techniques, loom woven or kani shawls and the needle embroidered or sozni shawls.
- Pashmina Shawls are **GI certified.**
- The Kani shawl, which has a Geographical Indication tag, now faces competition from cheaper machine-made shawls from Punjab.
- Kani Shawl weaving originated in Kanihamal area of Kashmir valley

Kufic calligraphy:

- **Calligraphy** is a visual art related to writing. It is the design and execution of lettering with a pen, ink brush, or other writing instrument.
- Kufic is the oldest calligraphic form of the various Arabic scripts. Arabic calligraphy became one of the most important branches of Islamic Art.
- The name of the script derives from Kufa, a city in southern Iraq which was considered as an intellectual center within the early Islamic period.

Topic 72. EL NINO: MALAWI'S HARVEST OF MAIZE – ITS STAPLE FOOD – MAY FALL BY 22.5% THIS YEAR

Important for the subject: Geography

Maize is a critical staple in southern Africa, particularly in Malawi, where it accounts for two-thirds of the national calorie intake.

- The study focuses on the **impact of El Nino**, an abnormal warming in the **eastern tropical Pacific Ocean**, on **maize production in Malawi.**
- Using **historical crop data** and records of **El Nino** events since the **1980s**, the researchers found that **two-thirds of El Nino events** correlate with a significant reduction in **maize harvests**, averaging a **22.5%** decrease.
- Such a **decline in maize production** can lead to severe consequences, including widespread reliance on food aid, disruptions in maize markets, and economic challenges for both rural and urban households.
- The study suggests implementing **social protection programs**, such as **cash transfers** or **government food aid** and advises policymakers to prepare for **El Nino impacts** by **importing maize and seeking international assistance.**
- The researchers also recommend policies to help farmers **install irrigation systems and**

diversify their income sources beyond traditional farming.

- The current **El Nino**, predicted to be one of the strongest in 40 years, is occurring alongside a **strong Indian Ocean Dipole**, another climate event that can exacerbate **El Nino's** effects.

Can Malawi's farmers prevent devastating losses?

- Some **mitigation strategies** include **planting with the earliest effective rains**, **growing early maturing crops**, **implementing farming techniques to enhance water infiltration into the soil** (such as **digging small holes near crops**), **cultivating more drought-resistant crops**, and **using organic manure to improve soil moisture retention**.

However, these measures might not be sufficient.

- While importing maize from neighbouring countries is a common solution, poor harvests across the entire region could limit the availability of maize for both informal and formal cross-border trade.
- **The urgent steps that the government can take in response to the potential impacts of El Nino on agriculture and the economy include:**
- The government should include **impoverished urban populations in social protection programs**. While cash transfers can be beneficial, they must be managed carefully to avoid exacerbating food shortages and increasing prices due to higher demand and limited supply.
- Policymakers need to closely **monitor the impacts of El Nino** and be prepared to respond quickly and effectively as the situation evolves.
- The government should make arrangements in advance to **import maize swiftly in case of a domestic shortfall**, thereby ensuring food availability.
- Given **Malawi's** challenging macroeconomic and fiscal situation, international support may be necessary to finance food imports.

El-Nino events:

- **El Nino** refers to the **large-scale ocean-atmosphere climate interaction** linked to **periodic warming in sea surface temperatures** across the **central and east-central Equatorial Pacific**. It is associated with **high pressure** in the **western Pacific**. **El Nino** adversely impacts the **Indian monsoons** and hence, agriculture in India.

Impact of El Nino:

- **Impact on Ocean:** **El Nino** impacts **ocean temperatures**, the speed and strength of **ocean currents**, the **health of coastal fisheries**, and **local weather from Australia to**

South America and beyond.

- **Increased Rainfall:** Convection above warmer surface waters brings increased precipitation.
- **Rainfall** increases drastically in South America, contributing to coastal flooding and erosion.
- **Diseases caused by Floods and Droughts:** Diseases thrive in communities devastated by natural hazards such as **floods** or **drought**.
- **El Nino-related flooding** is associated with increases in cholera, dengue, and malaria in some parts of the world, while drought can lead to wildfires that create respiratory problems.

Topic 73. PM WISHES PEOPLE ON THAIPOOSAM

Important for the subject: History



The Prime Minister, Shri Narendra Modi, extended his warm wishes on the occasion of Thaipusam today.

- Thaipusam or Thaiposam is a Tamil Hindu festival celebrated on the first full moon day of the Tamil month of Thai coinciding with Pusam star.
- The festival is celebrated to commemorate the victory of Hindu god Murugan over the demon Surapadman using a vel, a divine spear granted by Parvati.
- The festival includes ritualistic practices of Kavadi Aattam, a ceremonial act of sacrifice carrying a physical burden as a means of balancing a spiritual debt.
- Worshipers often carry a pot of cow milk as an offering and also do mortification of the flesh by piercing the skin, tongue or cheeks with vel skewers.
- Devotees prepare for the rituals by keeping clean, doing regular prayers, following a vegetarian diet and fasting while remaining celibate.

Geographical Spread:

- Thaipusam is observed by Tamils in India, Sri Lanka, South East Asia notably in Malaysia, Singapore, Thailand and Indonesia, other countries with significant people of Tamil.
- Origin like Fiji, Mauritius, South Africa and Canada, Caribbean countries including Trinidad and Tobago, Guyana and Suriname, countries with significant Indian migrants including United States and Australia.
- It is a holiday in Mauritius, in many states in Malaysia and in the Indian state of Tamil Nadu.

About Kavadi Aattam:

- **Kavadi Aattam (roman: burden dance)** is a ceremonial sacrifice and offering practiced by devotees during the worship of Murugan, the Hindu god of war.
- It is a central part of the festival of **Thaipusam** and emphasizes debt bondage.

Topic 74. HINDU TEMPLE EXISTED AT GYANVAPI MOSQUE SITE: ASI SURVEY REPORT

Important for the subject: History

The western wall of the Gyanvapi mosque located in Varanasi, Uttar Pradesh, is the remaining part of a preexisting Hindu temple, says the ground penetrating radar (GPR) survey report of the structure prepared by the Archaeological Survey of India (ASI).

About Gyanvapi Mosque

- It is a popular belief that the Gyanvapi Mosque was built in 1669 by the Mughal ruler **Aurangzeb** by demolishing the ancient Vishweshwar temple.
- It is worth mentioning that in Saqib Khan's book 'Yasir Alamgiri', it is also mentioned that Aurangzeb had demolished the temple in 1669 by ordering Governor Abul Hassan.
- The case of Gyanvapi mosque has been in court since 1991, when three persons, including Pandit Somnath Vyas, a descendant of the priests of the Kashi Vishwanath temple,
- filed a suit in the court of the civil judge of Varanasi claiming that Aurangzeb had demolished the temple of Lord Vishweshwar and built a mosque on it so that the land should be returned to them.

Legal Safeguards

- **Under Section 3 of the Places of Worship (Special Provisions) Act, 1991**, it is prohibited to convert a place of worship, even its clause, into a place of worship of a

different religious denomination or a different class of the same religious denomination.

- **Section 4 (2) of the Act** states that all litigations, appeals or other proceedings relating to changing the nature of the place of worship (which were pending till August 15, 1947) shall cease after the enactment of this Act and no fresh action can be taken on such cases.
- However, if the change in the nature of the place of worship has occurred after the **cut-off date of August 15, 1947** (after the act came into force), legal action can be initiated in that case.
- The disputed site of **Ayodhya (Ram Janmabhoomi-Babri Masjid)** was exempted from the Act.

Archaeological Survey of India (ASI)

- ASI under the Ministry of Culture is the premier organization for archaeological researches and protection of the cultural heritage of the nation.
- It was founded in 1861 by Alexander Cunningham.
- Maintenance of ancient monuments and archaeological sites and remains of national importance is the prime concern of the ASI.
- Besides, it regulates all archaeological activities in the country as per the provisions of the Ancient Monuments and Archaeological Sites and Remains Act, 1958.
- It also regulates Antiquities and Art Treasure Act, 1972.

Topic 75. INDIA NOMINATES 12 FORTS OF MARATHAS FOR UNESCO WORLD HERITAGE LIST

Important for the subject: History

India has proposed the “Maratha Military Landscapes,” a collection of forts highlighting the strategic military prowess of Maratha governance, for UNESCO World Heritage List consideration in 2024-25.

- **Included Forts:** The nomination comprises 12 forts: **Salher, Shivneri, Lohagad, Khanderi, Raigad, Rajgad, Pratapgad, Suvarnadurg, Panhala, Vijaydurg, and Sindhudurg in Maharashtra, along with Gingee in Tamil Nadu.**
- Developed between the **17th and 19th centuries**, these forts epitomize an exceptional fortification and **military system envisioned by Maratha rulers.**
- The forts, spanning diverse landscapes like the Sahyadri mountain ranges, Konkan Coast,

Deccan Plateau, and Eastern Ghats, reflect Maratha military ideology and strategic dominance.

About UNESCO World Heritage Site

- A World Heritage Site is a location recognized by UNESCO for its exceptional cultural or natural significance, managed by the UNESCO World Heritage Committee.
- UNESCO, under the Convention concerning the Protection of the World Cultural and Natural Heritage, promotes the recognition and preservation of global heritage.
- India boasts 38 World Heritage Sites, comprising 30 Cultural properties, 7 Natural properties, and 1 mixed site, recognized for their outstanding value to humanity.

Topic 76. PM MODI LAUNCHES NEW ROOFTOP SOLAR POWER SCHEME: WHAT IT IS, WHY IT IS NEEDED

Important for the subject: Schemes

Prime Minister Narendra Modi on January 22, 2024, announced the ‘**Pradhan Mantri Suryodaya Yojana**’, a government scheme under which **one crore households will get rooftop solar power systems**.

About ‘Pradhan Mantri Suryodaya Yojana’:

- The scheme seems to be a new attempt to help **reach the target of 40 GW rooftop solar capacity**, as envisaged under the **Rooftop Solar Programme in 2014**.
- **Target:** installing rooftop solar on 1 crore houses.
- The scheme would help not only reduce electricity bills of the “poor and middle class”, but also push India’s goal of becoming self-reliant in the energy sector.

About Rooftop Solar Programme:

- In **2014**, the government **launched the Rooftop Solar Programme** which **aimed to achieve a cumulative installed capacity of 40,000 megawatts (MW) or 40 gigawatts (GW) by 2022**.
- However, this **target couldn’t be achieved**. As a result, the government **extended the deadline from 2022 to 2026**.
- It provides **Central Financial Assistance and incentives to distribution companies (DISCOMs)** as per the **guidelines of the Ministry of New and Renewable Energy (MNRE)**.

- Consumers can benefit from the scheme either through **DISCOM-tendered projects** or via the **National Portal**
- The **portal allows consumers to choose vendors** and the **brand/efficiency of solar equipment**. **DISCOMs** are responsible for **issuing technical feasibility approval**, **installing net meters**, and **inspecting systems**.
- After installation and inspection, **subsidies are directly transferred to consumers' bank accounts**.
- Additionally, **consumers can export surplus solar power units generated from their rooftop solar plants to the grid**, as per **metering provisions** issued by **State Electricity Regulatory Commissions (SERCs)** or **Joint Electricity Regulatory Commissions (JERCs)**.
- Consumers are **monetarily compensated for the surplus power exported** according to prevailing regulations.

What is India's current solar capacity?

- As of **December 2023**, **India's solar power installed capacity is approximately 73.31 giga watts (GW)**, with **rooftop solar capacity** contributing about **11.08 GW**.
- **Rajasthan** leads the country in **total solar capacity** with **18.7 GW**, followed by **Gujarat** with **10.5 GW**.
- In terms of **rooftop solar capacity**, **Gujarat** is the leader with **2.8 GW**, with **Maharashtra** in **second place** at **1.7 GW**. **Solar power** constitutes a significant portion of **India's renewable energy capacity**, which is around **180 GW**.

Why is an expansion of solar energy important for India?

- **Expanding solar energy** is crucial for **India** due to the **country's expected largest energy demand growth** over the **next 30 years**, as projected by the **International Energy Agency**.
- To meet this growing demand, **India** requires a **reliable energy source** that isn't solely dependent on **coal**.
- **India aims to achieve 500 GW of renewable energy capacity by 2030**.
- The significant growth in solar power capacity, from **less than 10 MW in 2010** to **70.10 GW in 2023**, highlights the **country's commitment to expanding solar energy** as a key part of its energy mix.

Topic 77. PM YOUNG ACHIEVERS' SCHOLARSHIP AWARD SCHEME FOR A VIBRANT INDIA (PM YASASVI) FOR OBC, EBC AND DNT STUDENTS***Important for the subject: Schemes***

Till December 2023, **Rs 12.75 Crore** was released to States/UTs for **Construction of Hostels for OBC Boys and Girls under PM YASASVI scheme**.

OBC, EBC and DNT students can apply for **Top Class School Education scheme and Top Class College Education scheme at National Scholarship Portal till 31st January, 2024 under PM YASASVI**

- Rs 32.44 Crore released for Pre-matric Scholarship and Rs 387.27 Crore released for Post-Matric Scholarship to States/UTs under **PM YASASVI scheme**

About the scheme:

- The **Ministry of Social Justice and Empowerment (MSJ&E)** of the Government of India has created the **PM Young Achievers Scholarship Grant Scheme for a Vibrant India (YASASVI)**.
- **PM YASASVI is a Scholarship scheme for Other Backward Class (OBCs), Economically Backward Class (EBC) and Denotified Nomadic Tribes (DNT) Students.**
- Under this Scheme students can avail **Pre-Matric Scholarship from Class 9 to 10 and Post Matric Scholarship for their higher studies at post-matriculation or post-secondary stage.**
- Students who excel in their studies also get an opportunity of Scholarship to study in Top Class Schools and Colleges under the Scheme of '**Top Class School Education**' and '**Top Class College Education**'.
- Hostel facilities are also provided to OBC students under the '**Scheme of Construction of Hostels for OBC boys' and girls**'.

Components of Schemes are as under.

- Pre-Matric Scholarship for OBC, EBC and DNT Students.
- Post-Matric Scholarship for OBC, EBC and DNT Students.
- Top Class School Education for OBC, EBC and DNT Students.
- Top Class College Education for OBC, EBC and DNT Students.
- Construction of Hostel for OBC Boys and Girls.