

CURRENT AFFAIRS

WEEKLY

WEEK: 4

MAY
2024

MAINS ARTICLE

GS-I

- Shedding Light on Hysterectomies in India

GS-II

- Geopolitical Impact of Iran President's Death
- Recognition of Palestine as a 'State'
- Caledonia's Civil Unrest
- Xi, Putin, and the World
- India's Labours and Issues
- SC Seeks ECI Response on Voter Turnout Data Disclosure
- Registered Parties and Recognised Parties

GS-III

- India-China Consumption Comparison
- US-China Trade War & India
- Decline in Foreign Investment
- RBI's Surplus Transfer
- India's Manufacturing Landscape
- Punjab and Haryana's Role in National Food Security
- RBI's Project Financing Framework
- SC Stays Construction Project in Ecologically Fragile Uttarakhand
- Local Environmental Footprints of Luxury Consumption
- Loss of Farm Trees
- The evolution and essentials of India's climate policy
- 50 years of Pokhran-I
- Gopi Thotakura, the First Indian Space Tourist
- Joint Culture in Armed Forces

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- Radical Democracy

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- Tirupati Gangamma Jatara

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- Clear-Air Turbulence
- Degrading Rangelands
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- Sri Lankan Golden-Backed Frog (Indosylvirana serendipi)

ECONOMY

- Impact of Windfall Tax on North Sea Trade
- Global Cities Index
- Fixed-Income Mutual Funds

TERMS OF THE WEEK

GS SCORE

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DISCLAIMER

*T*he current affairs articles are segregated from prelims and mains perspective, such separation is maintained in terms of structure of articles. Mains articles have more focus on analysis and prelims articles have more focus on facts.

However, this doesn't mean that Mains articles don't cover facts and PT articles can't have analysis. You are suggested to read all of them for all stages of examination.

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A

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1. SHEDDING LIGHT ON HYSTERECTOMIES IN INDIA

CONTEXT: The lack of comprehensive data on women-specific health issues, including hysterectomies, impedes policy making and awareness efforts in India. A recent study delves into the prevalence and underlying reasons for hysterectomies among women aged 45 and above in India, shedding light on this crucial aspect of women's health.

Key-findings

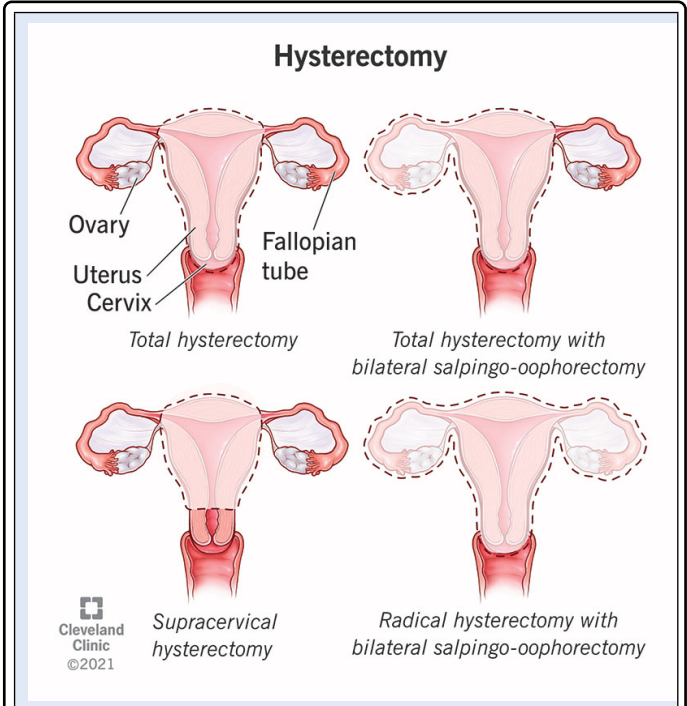
- The most common reasons for hysterectomies in India include heavy menstrual bleeding, fibroids, and uterine prolapse.
- It reveals regional disparities in hysterectomy prevalence, with southern and western India reporting higher rates.
- **Factors associated with a higher likelihood of undergoing hysterectomy:** education level, socioeconomic status, and age at marriage.
 - ▶ Patriarchal norms and misconceptions contribute to the overuse of hysterectomies, with some women undergoing surgery unnecessarily.
 - ▶ Women from marginalized communities and those with multiple children are particularly vulnerable.

Issues associated with Hysterectomy

- There has been found a correlation between hysterectomy and chronic diseases (cardiovascular events, cancers, depression, metabolic disorders, and dementia).
- Hysterectomies are also associated with hypertension, high cholesterol, diabetes, and bone disease.
- Women who could have been offered **alternative treatments** are unnecessarily subjected to hysterectomies, posing significant risks to their health. Medical professionals stress the importance of exploring **non-surgical treatments** and ensuring **informed decision-making** among patients.

Fact Box: About Hysterectomies:

- Hysterectomy, the surgical removal of the uterus, is a common procedure globally, often performed to alleviate symptoms of **gynecological disorders** like **fibroids, uterovaginal prolapse, and ovarian cysts**.
- While it offers health benefits, it also carries long-term implications such as early menopause and increased risks of cardiovascular disease and urinary incontinence.



2. GEOPOLITICAL IMPACT OF IRAN PRESIDENT'S DEATH

CONTEXT: The recent helicopter crash that killed **Iran's President Ebrahim Raisi** has sent shockwaves through the **global political landscape**, with profound implications for regional stability and international relations. The incident occurred amidst heightened tensions in **West Asia**, where Israel has been in conflict with **Hamas in Gaza** for seven months.

India's Position

- **Chabahar Port Agreement:** India recently signed a contract with Iran to operate **the Chabahar port**, aiming to enhance trade with **Central Asia**. The port's development had been delayed due to U.S. sanctions on Iran, but the recent agreement marked a significant step forward.
- **Common Concerns:** India and Iran share concerns about **Taliban's Sunni extremism** and Pakistan's role in Afghanistan. For New Delhi, Iran is a "strong regional partner" in Afghanistan.
- **Look-East Strategy:** Under President Raisi, Iran pursued a 'look east' strategy, deepening ties with Asian powers, including India. Progress on regional connectivity projects involving India, mainly the **INSTC and Chabahar port**, underscores Iran's strategic view of its relations with India.
- **Trade Relations:** In 2022-23, India's bilateral trade with Iran reached \$2.33 billion. While New Delhi's trade with

Tehran had declined in recent years, it saw a 21.77% uptick in 2022-23 after Raisi came to power in 2021.

Implications

□ **US Perspective:**

- ▶ U.S.-Iran relations have been strained, particularly since the U.S. withdrew from the **Joint Comprehensive Plan of Action (JCPOA)** in 2018 and reimposed sanctions on Iran.
- ▶ This move led Iran to exceed the nuclear limits set by the agreement. The ongoing conflict in Gaza has further complicated **U.S.-Iran relations**.

□ **Broader Implications:**

- ▶ The death of President Raisi could lead to a period of uncertainty and potential instability within Iran.
- ▶ The leadership transition process will be closely watched, as it will influence Iran’s domestic policies and its approach to international diplomacy.
- ▶ The new leadership’s stance on key issues such as the nuclear program, relations with Israel, and interactions with the U.S. will be critical in shaping the future geopolitical landscape.
- ▶ The incident may prompt increased scrutiny and speculation about Iran’s internal security and political dynamics.
- ▶ Any perceived weakness or instability could embolden adversaries and complicate Iran’s efforts to navigate the complex web of regional and international relations.

Recurring VVIP Flight Incidents (Indian Incidents)

- The 2009 crash of the Bell helicopter killed Andhra Pradesh Chief Minister Y.S. Rajasekhara Reddy, and the 2021 crash claimed General Bipin Rawat.
- Both involved poor weather and hilly terrains.

3. RECOGNITION OF PALESTINE AS A ‘STATE’

CONTEXT: Ireland, Norway, and Spain have announced their formal recognition of Palestine as a state.

A Brief History of the Conflict (Background):

- Recognition of Palestine state is a long-standing issue between Israel and the Palestinians.
- **Two-State Solution:** In 1947, the United Nations proposed a **partition plan** for the creation of both a **Jewish and Palestinian state**. However, the Palestinians and the wider Arab world rejected it because it favored the Jewish population, leaving Palestinians with less land despite being the majority.

- Subsequent conflicts, particularly the **Arab-Israeli war** in 1948 and the **Six-Day War** in 1967, resulted in **Israel gaining control over Palestinian territories**.
- **Current Situation:** Decades of peace talks have failed to resolve the conflict, with the United States, Britain, and other Western countries supporting the idea of an independent Palestinian state alongside Israel.

What does this recognition signify?

- While Ireland, Norway, and Spain’s recognition of Palestine won’t immediately change the situation on the ground, it carries symbolic significance.
- It enhances Palestinians’ international standing and increases pressure on Israel to engage in negotiations for peace.
- **Who Recognizes Palestine?** Nearly three-quarters of UN members recognize Palestine, primarily countries from **West Asia, Africa, and Asia**. However, major Western powers such as the **United States, Canada, most of Western Europe, Australia, Japan, and South Korea** do not.
- Palestine currently holds an enhanced **observer status** at the UN, allowing participation but **not voting rights**.
- It’s also recognized by organizations like the **Arab League and the Organisation of Islamic Cooperation**.

Fact Box:

Criteria for Recognition:

- There are no strict rules governing when one country should recognize another.
- However, the **Montevideo Convention of 1933** outlines four criteria for statehood:
 - ▶ a permanent population
 - ▶ a government
 - ▶ defined borders
 - ▶ the ability to engage in international relations

What is Palestine?

- Palestine was historically made up of the **Gaza Strip and the West Bank** — referred to as the State of Palestine — and the country of Israel.
- Both of these territories, including **East Jerusalem**, were captured by Israel during the Six-Day War in 1967.
- Now, the Palestinians remain stateless, with most living under Israeli occupation or as refugees in neighbouring states.



4. CALEDONIA'S CIVIL UNREST

CONTEXT: New Caledonia, nestled in the southwest Pacific, has been shattered by recent violence. Massive riots and armed clashes between indigenous Kanak pro-independence protestors and security forces have engulfed the capital, Nouméa. This unrest has prompted French President Emmanuel Macron to declare a state of emergency.

About New Caledonia

- New Caledonia is a French overseas territory situated in the southwest Pacific.
- New Caledonia, with its population of approximately 270,000 people, boasts a diverse demographic makeup.
- Indigenous Kanak form 44% of the populace, followed by 34% Europeans, predominantly French, alongside other minority groups like Wallisian and Tahitians.
- Notably, Nouméa, the capital, accommodates more than a third of the island's inhabitants.

Relationship between New Caledonia and France

- The relationship between New Caledonia and France is complex. Dating back to its designation as a **French overseas** territory in **1946**, New Caledonia operates with a degree of autonomy within the **French legal system**.
- While the **French President serves as the head of state**, the territory maintains representatives in the French Parliament.
- Despite this autonomy, New Caledonia relies on France for crucial matters such as defense and internal security.
- **Nouméa Accord:** The foundation of the Nouméa Accord in 1998 provided a pathway towards gradual autonomy for New Caledonia.

- This accord also restricted **voting rights**, particularly emphasizing the indigenous Kanak and pre-1998 migrants. However, tensions have mounted as France now considers the Accord expired after three self-determination referendums held in 2018, 2020, and 2021.
- The recent turmoil stems from proposed constitutional amendments that aim to extend voting rights to residents with ten or more years of uninterrupted residency.

5. XI, PUTIN, AND THE WORLD

CONTEXT: China's President Xi Jinping and Russia's President Vladimir Putin have pledged a "new era" of partnership, positioning themselves against the United States, which they describe as a disruptive Cold War-era hegemon.

About the Joint Statement

- "No Limits" Partnership: In February 2022, China and Russia declared a "no limits" partnership when Putin visited Beijing, just before the invasion of Ukraine.
- Geopolitical Alignment: Both countries find common ground in their geopolitical struggles—Russia against NATO-supported Ukraine and China facing U.S. efforts to curb its military and economic rise.
- Strategic Deepening: The statement highlighted plans to enhance military ties and defense sector cooperation, claiming it would improve regional and global security.
- Shared Opposition: The statement expressed opposition to the U.S. on security issues and aligned their views on Taiwan, Ukraine, North Korea, and cooperation on peaceful nuclear technologies and finance.
- Criticism of the U.S.: The document specifically criticized the United States.

West versus Xi and Putin

- U.S. Concerns: Putin's visit to China followed U.S. Secretary of State Antony Blinken's trip to China, where he raised concerns about China's support for Russia's military. However, Blinken's visit did not weaken Xi's relationship with Putin.
- Message of Priorities: By choosing China for his first foreign trip since his recent re-election, Putin signals the importance of his ties with Xi and his geopolitical priorities.

Factors Bringing Russia and China Together

While animosity towards the West is a significant factor in the Russia-China relationship, several other important elements also contribute:

- Mutual Benefits in Trade: Russia benefits from continued trade with China, especially in the energy sector. China gains from Russia's shared interest in maintaining security and stability in Central Asia.
- Military Cooperation: China benefits from Russia's military experience and rapid advancements in defense technology.

Critical Concerns for India

For India, the growing Russia-China defense partnership raises several important questions:

- Dependence on Russian Supplies: India relies on Russia for 60-70% of its defense supplies, especially crucial during the ongoing border standoff with China.
- Russia as a "Junior Partner" to China: Western analysts warn that Russia might become subordinate to China. India is concerned about the impact of Western sanctions on Russia's defense industry, which could affect India's military capabilities.
- Russia's Stance in an India-China Conflict: Historically, the Soviet Union was not very supportive of India during the 1962 India-China war but supported India during the 1971 war. The current geopolitical scenario is different, and Putin's Russia may not act like the old Soviet Union.

6. INDIA'S LABOURS AND ISSUES

CONTEXT: A recent incident of death of a construction-site labour has highlighted the severe risks faced by such workers.

Issues faced by construction labours:

- **Daily Struggles on Construction Sites:** Work on construction sites begins early and extends into the evening, even in extreme weather. Basic amenities like clean water, sanitation, and electricity are often missing. Falling ill means losing a day's wage, which can be a significant setback.
- **Gender Disparities in Employment:** Women face additional challenges. Unlike men, who can diversify into tasks like painting and carpentry, women often perform repetitive, lower-paid tasks like transporting materials.
- **Housing and Wage Issues:** Many workers live on-site while working on long-term projects. Wage disparities persist, with certain jobs, like **Plaster of Paris (PoP) work**, paying less despite their importance.
- **Deaths:** The state's neglect of these workers by not providing basic safety facilities at construction sites and not enforcing safety equipment regulations leads to frequent deaths in the construction industry.
- **Other issues:** lack of paid leaves, bonded labour, delayed payments, poor working and living conditions, climate change (heatwaves) and others.

Significant Role of Construction Labourers in the Economy

- Construction labourers are part of the unorganized sector, lacking formal job offers, gratuity, and other benefits that organized sector employees receive.
- More than 70 million individuals are engaged in India's construction sector
- The construction industry is crucial to the Indian economy, expected to employ over 100 million people by 2030, with 80% being unskilled labourers.
- The industry contributes to 5% of GDP and 8% of capital formation.

As the backbone of urban development, these workers deserve significant interventions and robust protections to ensure their health, dignity, and financial well-being.

Fact Box:

Existing Legislation for Workers

- **Constitutional Framework:** Under the Indian Constitution, Labour is a subject in the **Concurrent List**.
- **Minimum Wages Act, 1948:** Requires each state to determine and adhere to a minimum wage for construction labourers.
- **Building and Other Construction Workers Welfare Cess Act, 1996:** Supports the state welfare board established under the BOCW Act, 1966.
- **Right to Dignity:** Interpreted under **Article 21** in the **Maneka Gandhi case** to ensure a dignified life for workers.
- **Article 23 and the Bonded Labour Prohibition Act, 1976:** Prohibit bonded labour.

Government Schemes

- **National Initiative for Promoting Upskilling of Nirman workers (NIPUN):** This program aims to provide skill training to construction workers. It's part of the Ministry of Housing & Urban Affairs' effort to train over 100,000 construction workers under the Deendayal Antyodaya Yojana-National Urban Livelihoods Mission (DAY-NULM).
- **Model Welfare Scheme for Building and Other Construction Workers and Action Plan for Strengthening Implementation Machinery**
- **Pradhan Mantri Shram Yogi Maan-dhan (PM-SYM):** It aims to provide old age protection and social security for unorganized workers.
- **eShram Portal:** It is the first-ever national database of unorganised workers (migrant workers, construction workers, gig and platform workers, etc.)

PYQ

- Q. Discuss the changes in the trends of labour migration within and outside India in the last four decades. (2015)

7. SC SEEKS ECI RESPONSE ON VOTER TURNOUT DATA DISCLOSURE

CONTEXT: The Supreme Court of India has asked the Election Commission of India (ECI) to respond to an application demanding the disclosure of the absolute number of votes polled in the ongoing elections. The application seeks timely transparency in voter turnout data to maintain public confidence in the election process.

Key Issues Raised:

- **Delayed Release of Voter Turnout Data:** The ECI delayed releasing voter turnout data for the first two phases of the 2024 Lok Sabha elections. The final data released showed a significant increase compared to initial data, raising concerns about data integrity.
- **Discrepancy in Data:** The application highlighted a 5-6% increase in voter turnout. This discrepancy has caused public suspicion regarding the accuracy of the election data.
- **Need for Timely Disclosure:** It suggests uploading scanned copies of Form 17C, which records votes polled at each booth, to the ECI website immediately after elections.

Legal and Procedural Aspects:

- **Form 17C Data:** The ECI provides Form 17C data to every candidate, and any candidate can raise objections through an election petition.
- The **Voter Turnout App** provides real-time tentative voter turnout figures, which can later differ from the actual figures recorded in Form 17C.

Transparency in Elections:

- Timely and accurate disclosure of voter turnout data is crucial for maintaining public trust in the electoral process.
- Ensuring that discrepancies are minimized and explained can help mitigate suspicions and enhance the credibility of election results.

Integrity of Elections and Public Trust

- **Impact of Discrepancies:** The application argues that delays and discrepancies in data release undermine public confidence in the electoral process.
- **Need for Verification:** Without absolute numbers, the public cannot verify the accuracy of the votes polled against the votes counted.
- **Historical Comparison:** In the 2019 Lok Sabha Elections, the ECI released total votes polled data comparing it with 2014 data, providing transparency and trust.

8. REGISTERED PARTIES AND RECOGNISED PARTIES

CONTEXT: The Election Commission of India (ECI) has raised concerns about the lack of explicit powers to deregister political parties for non-compliance with electoral norms. This issue highlights the challenges regarding the registration and recognition of political parties in India and the need for stronger regulatory mechanisms to uphold electoral integrity.

Issues and Concerns

- Many registered but unrecognised parties don't contest elections, raising concerns about potential misuse of privileges.
- The Election Commission of India (ECI) lacks explicit powers to deregister parties for failure to contest, conduct inner-party elections, or submit returns.
- The Supreme Court has limited ECI's power to deregister parties, allowing it only under exceptional circumstances like fraud or violation of constitutional allegiance.
- Parties not contesting elections may misuse tax exemptions and donations for illicit purposes.

MCC Violations

- The Model Code of Conduct (MCC) prohibits using caste and communal sentiments for votes, as well as voter bribery or intimidation.
- Recognised parties have been found guilty of MCC violations, but ECI sanctions are often limited to short campaign bans.
- Recommendations for Action
 - ▶ ECI has proposed amendments to empower itself to deregister parties, supported by the Law Commission's recommendation.
 - ▶ The Law Commission suggested deregistration for parties failing to contest elections for ten consecutive years.
 - ▶ ECI can suspend or withdraw recognition of parties under Paragraph 16A of the Symbols Order for MCC violations, although this power is seldom used.

Fact Box**Registered Parties:**

- Section 29A of the Representation of the People Act, 1951, outlines the requirements for political party registration.
- A registered party must submit its constitution, pledging allegiance to the Constitution of India, socialism, secularism, and democracy.
- Registered parties enjoy benefits like tax exemption for donations, a common symbol for elections, and the appointment of twenty star campaigners.
- India currently has 2,790 active registered political parties.

Recognised Parties:

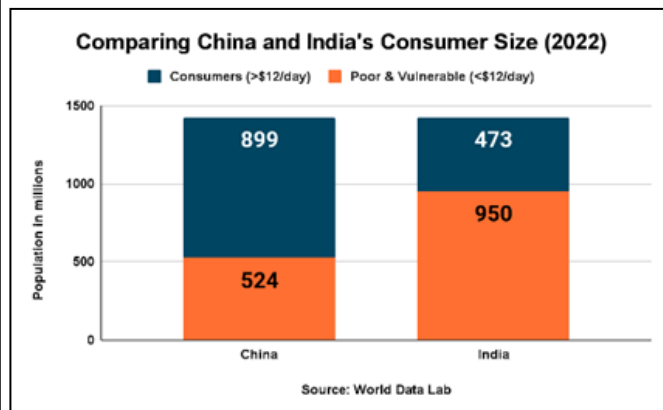
- Parties recognised as 'national' or 'State' parties under The Election Symbols (Reservation and Allotment) Order, 1968.
- Recognition is based on winning requisite seats or obtaining a certain percentage of votes in general elections.
- India has six national parties and sixty-one State parties, enjoying privileges like reserved symbols and forty star campaigners.

9. INDIA-CHINA CONSUMPTION COMPARISON

CONTEXT: In 2023, India overtook China as the world's most populous country, a milestone underscored by contrasting demographic trends. While China experienced a declining birth rate and negative population growth for the first time in decades, India's population continued to grow, albeit at a slower pace than before.

Comparing Consumption Figures

- When comparing consumption figures between the two nations, it's essential to consider **Private Final Consumption Expenditure (PFCE)**, which measures household and non-profit institution spending on goods and services.



- India's PFCE contributes more to its GDP compared to China, indicating a higher dependency on **consumption for economic growth**.
- Despite China's larger economy, its PFCE is only about 3.5 times that of India's, suggesting a relatively **higher reliance on consumption** in India. Additionally, while China saw a significant increase in PFCE in recent years, India's figures have been steadily rising.

- While PFCE contributes more than 58% to India's GDP currently, it contributes only 38% to China's economy.
- Additionally, the final consumption, which also includes government consumption expenditure, constitutes 68% of the GDP for India and 53% for China

Nominal vs. PPP Figures

- It's crucial to note that nominal figures alone may distort the comparison due to differences in the cost of living.
- PPP figures provide a more accurate comparison by adjusting for these discrepancies.
- In PPP terms, China's PFCE is approximately 1.5 times that of India's, narrowing the consumption expenditure gap between the two countries.

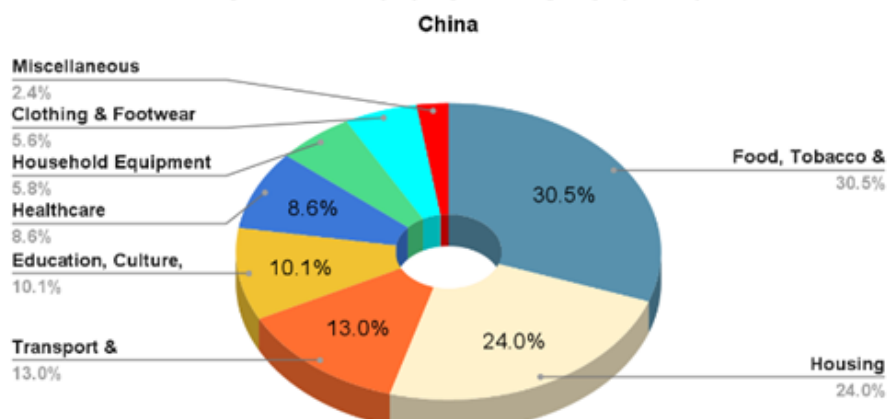
Expenditure by Categories

- India's consumption pattern reflects characteristics of an underdeveloped or developing market, with higher spending on **essentials like food and transportation**.
- In contrast, China's consumption basket resembles that of a more developed market, with higher expenditure on **housing, education, and healthcare**.

Concluding Thoughts

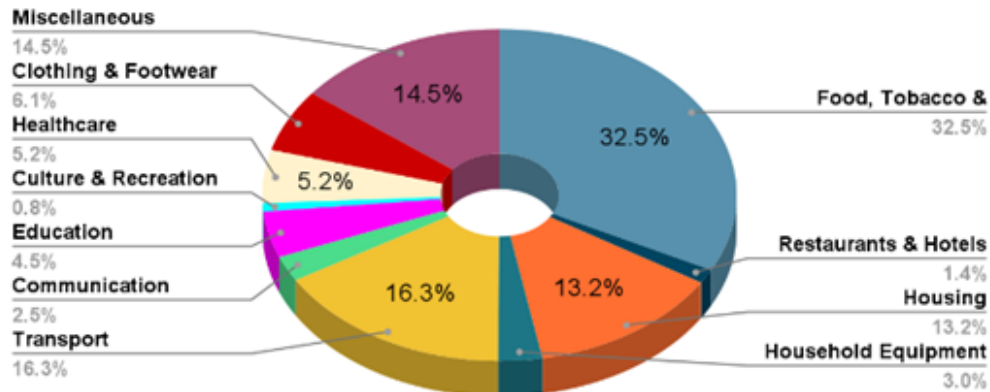
- India's growing consumer class and increased spending could make it an attractive destination for foreign businesses, especially amidst the **"China+1" narrative**. However, whether India can leverage this advantage to position itself as a preferred destination remains to be seen.
- In conclusion, while India's population surpassing China's marks a significant demographic shift, its implications for consumption patterns and economic growth warrant careful consideration. Understanding the nuances of consumption expenditure between the two countries is essential for businesses and policymakers alike.

Expenditure (%) by Category (2022)



Expenditure (%) By Category (2021-22)

India



10. US-CHINA TRADE WAR & INDIA

CONTEXT: The recent announcement of new tariffs on Chinese imports (EVs, solar cells, semiconductors and advanced batteries) has raised concerns about escalating tensions between the two countries. The development is concerning for India as escalation of a trade war between the US and China may push Beijing to dump goods in the Indian markets.

What is Dumping?

- Dumping occurs when a company sells its products in a foreign market at a lower price than in its home country.
- This flooding of the foreign market with cheap goods can harm local businesses by undercutting their prices and driving them out of business.
- Dumping can take several forms:
 - ▶ **Predatory Dumping:** Selling goods in a foreign market at a consistently lower price to eliminate competition and establish a monopoly.
 - ▶ **Sporadic Dumping:** Exporting excess inventory to a foreign market where the products are not selling.
 - ▶ **Persistent Dumping:** Selling products at a lower price consistently due to constant demand in the foreign market.
 - ▶ **Reverse Dumping:** Charging higher prices for a product in the foreign market when demand is low, while selling it at a lower price domestically.

Impact on International Trade:

- **Dumping can distort international trade**, and can also lead to trade wars and retaliation, damaging inter-

national trade relations.

- **Domestically**, it can cause harm to the domestic industry of the importing country by undercutting local businesses and potentially leading to their failure.
- **Protectionism:** Countries often use **tariffs and import duties** to counter dumping practices, but these measures can also be viewed as protectionist actions aimed at blocking foreign competition. WTO members have the option to lodge formal complaints about dumping and protectionist measures with the organization

Fact Box:

Rules for Dumping

- Dumping is generally frowned upon by organizations like the **World Trade Organization (WTO)** and the **European Union (EU)**.
- While dumping itself is not illegal under WTO rules, importing countries can take action if they prove that dumping harms their domestic producers.
- The **EU's European Commission** assesses dumping cases between countries and may impose anti-dumping duties as a solution.

Components of India's protectionism strategy

- **Tariffs and Import Duties:** India imposes tariffs and import duties on certain goods to make imported products more expensive, thereby protecting domestic industries from competition.
- **Non-Tariff Barriers:** Non-tariff barriers such as quotas, licensing requirements, and technical regulations are employed to restrict imports and safeguard local industries.

- **Domestic Procurement Policies:** India implements policies that prioritize the procurement of goods and services from local companies for government projects and contracts.
- **Subsidies and Incentives:** The government provides **subsidies, tax breaks, and other financial incentives** to domestic industries to support their growth and competitiveness.
- **Trade Remedies (anti-dumping duties, countervailing duties):** to address unfair trade practices and protect domestic industries from harmful import surges.

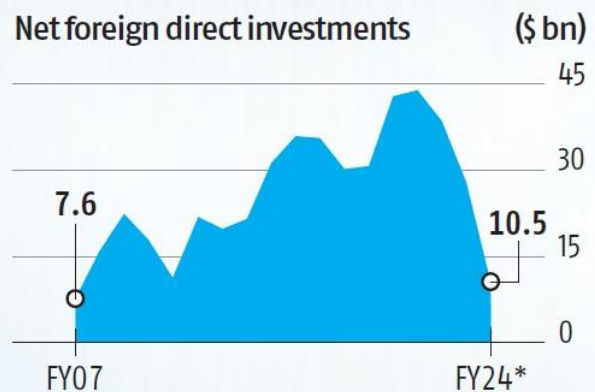
11. DECLINE IN FOREIGN INVESTMENT

CONTEXT: Foreign direct investment (FDI) in India has seen a significant downturn, prompting concerns about the country's economic health, as per RBI's "State of Economy".

Key-findings

- **Overview of FDI Trends:** Data from the Reserve Bank of India (RBI) reveals a sharp decline in FDI, with actual investments dropping to USD 26.6 billion in FY 2023-24, the lowest since 2006-07.
- **Rising Repatriation and Disinvestment:** Foreign companies have increasingly withdrawn investments from India, with repatriated or disinvested funds reaching USD 44.4 billion in FY 2023-24, the highest since 2011-12.
- **Trends Over Time:** The trend of declining FDI inflows and rising outflows has persisted for several years, indicating a sustained challenge for India's investment climate.
- **Sectoral Distribution of FDI:** Over 60% of FDI equity flows were directed towards specific sectors, including manufacturing, energy, and services.
- **Contributors to FDI Inflows:** Singapore, Mauritius, the US, and other countries have been major contributors to FDI inflows into India, as reported by the RBI.
- **India's Global Standing:** Despite challenges, India remains among the top 10 economies expected to experience high FDI momentum in 2024.
- **Global Investment Patterns:** A shift in global investment patterns, driven by factors like the COVID-19 pandemic, has seen FDI flows move from developed to developing economies.
- **Prospects for Indian Companies:** Indian companies have announced a significant number of greenfield FDI projects abroad, indicating their growing presence in the global market.

REPATRIATION EFFECT



*Provisional; Compiled by BS Research Bureau Source: RBI

Role of FDI in promoting economic growth:

- **Capital Inflow:** FDI provides a source of external capital, which can be used for investment in various sectors of the host country's economy. This capital infusion can stimulate economic development.
- **Technology Transfer:** Multinational corporations that make FDI often bring advanced technologies, skills, and best practices to the host country. This technology transfer can lead to increased productivity and innovation in domestic industries.
- **Job Creation:** FDI projects often lead to the creation of jobs in the host country. This contributes to reduced unemployment and improved living standards.
- **Increased Productivity:** FDI can enhance the efficiency and productivity of domestic firms through knowledge sharing and collaboration with foreign investors.
- **Infrastructure Development:** In some cases, FDI projects require the development or improvement of infrastructure, which can have spillover effects on the broader economy.
- **Export Promotion:** FDI can facilitate access to global markets, as foreign investors often use their host country operations as export bases. This can boost a country's exports and improve its trade balance.
- **Stimulated Local Businesses:** Local businesses may benefit from FDI by becoming part of the supply chain or through other collaborative efforts with foreign companies.
- **Government Revenues:** FDI can lead to increased tax revenues for the host country, which can be allocated to public services and infrastructure development.
- **Balanced Development:** FDI can contribute to more balanced and diversified economic development by promoting investments in various sectors, including manufacturing, services, and technology.

PYQ

Q. Justify the need for FDI for the development of the Indian economy. Why is there a gap between MOUs signed and actual FDIs? Suggest remedial steps to be taken for increasing actual FDIs in India. (2016)

12. RBI'S SURPLUS TRANSFER

CONTEXT: The Reserve Bank of India (RBI) has approved the transfer of Rs 2.11 lakh crores (highest ever yearly surplus transfer to the government) as surplus to the government for the financial year 2023-24.

Major Factors responsible for sharp jump:

- The sharp jump in the surplus amount could be attributed to **higher income from the forex holding of the central bank**, among other factors.
- The higher-than-expected surplus would support the **centre's liquidity surplus**, and, thereafter, expenditure.

About RBI's surplus transfer

- The RBI gives its surplus money to the government, the owner of the institution every year after setting aside some for emergencies.

Generation of Surplus by RBI

- Operations in financial markets (like buying or selling foreign exchange).
- Income from government securities it holds.
- Returns from foreign currency assets.
- Deposits with other central banks.
- Lending to banks.
- Management commissions.
- RBI buys financial assets against its fixed liabilities (like currency held by the public).

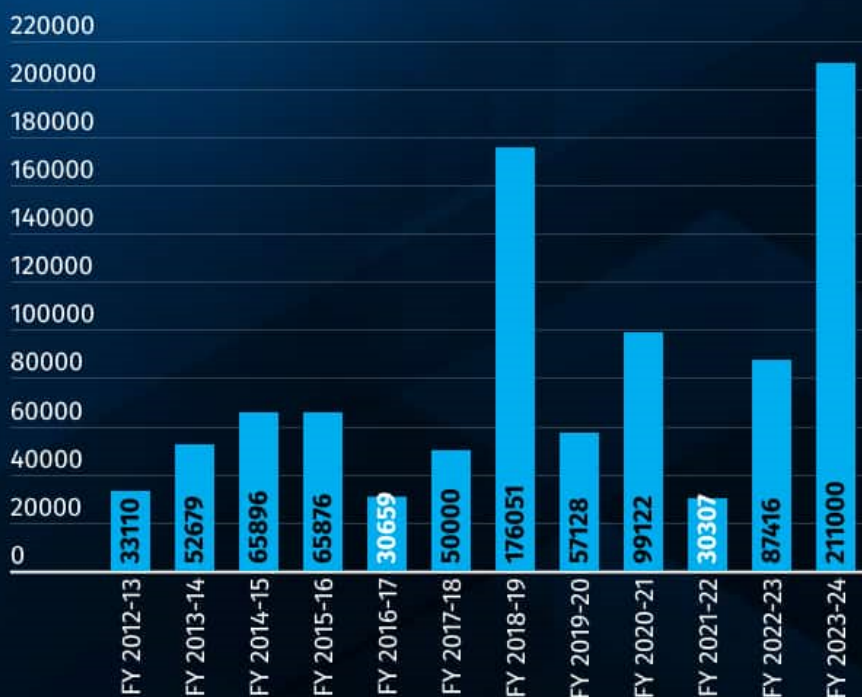
RBI's Expenditure

- Printing currency notes
- Staff salaries
- Commissions to banks.

Government's Use of Surplus:

- The government usually puts the surplus money into the **Consolidated Fund of India**.
- This fund is used for paying **salaries, pensions, interest payments, and government programs**.
- It helps the government reduce planned borrowings and keep **interest rates low**.

RBI SURPLUS TRANSFERS TO GOVT IN LAST 10 YEARS



Source: Moneycontrol data



- Also provides opportunities for private companies to raise money from markets.
- Can help **lower the fiscal deficit** if revenue targets are met.
- Alternatively, the government can use the funds for **public spending or specific projects** to boost **economic activity** in certain sectors.

Fact Box: Calculation Method

- The surplus transferred to the government for the financial year 2023-24 follows the **Economic Capital Framework (ECF)** set by the RBI in 2019, based on suggestions from the **Bimal Jalan committee**.
- **Contingent Risk Buffer (CRB):** The decision on surplus transfer considers the Contingent Risk Buffer (CRB). CRB is set at 6.50% for 2023-24, up from 6% in 2023 and 5.50% from 2019 to 2021.
- CRB is the portion of the economic capital reserved to cover various risks like monetary, fiscal stability, credit, and operational risks.

13. INDIA'S MANUFACTURING LANDSCAPE

CONTEXT: Finance Minister Nirmala Sitharaman said that India needs to ramp up its manufacturing sector to increase its share in the global value chain and become 'Atmanirbhar'.

Current Status of India's Manufacturing Landscape

- India's manufacturing sector contributes 17% to GDP and employs 27.3 million workers.
- Government aims to raise manufacturing's share to 25% by 2025.
- India's emergence as a manufacturing powerhouse presents long-term investment opportunities.
- **Strengths:**
 - **Dominant sectors:** textiles, automotive components, pharmaceuticals, and generic drugs.
 - **Recently emphasized sectors:** electronics, aerospace, defence, and renewable energy.
- **Comparison with IT sector:** As per the **ILO 2024 Labour Report data**, the entire ICT, financial and business service sector employs about 23 million (2.3 crore) jobs versus 63 million (6.3 crore) for manufacturing.
- The largest employment sector out of agriculture is construction, which is 68 million (6.8 crore).

Impact of robust manufacturing sector:

- **India's nominal GDP** grew 80 per cent to \$3.5 trillion by 2022, raising its global share by 1 percentage point to 3.5 per cent of global GDP. Such growth has lifted **GDP per capita** to \$2,500 or by 64 per cent.
- The **current account deficit (CAD)** has narrowed, and capital allocation has become more efficient.

- **India's external balance** has shifted from being fragile to robust, driven by the **CAD narrowing and investors' strong appetite for its assets**.

Challenges for India:

- **Gap:** India has the **largest working-age population** in the world but ranks **19 for manufacturing exports**, with only **1.6 per cent of global market share**, behind **Vietnam's 2 per cent global market share**. Even in labour-intensive manufacturing, India has only 2.7 per cent market share, behind Vietnam's 5.2 per cent global market share. In 2022 alone, India had a trade deficit of \$101 billion with China.
- **Industrial Infrastructure:** Improvements seen in industrial parks and economic zones. However, challenges remain in logistics and power supply.
- **Skill Development and Talent Shortage:** Skilled workers available, particularly in IT and engineering. There is need for continuous investment in advanced manufacturing skills. Labour laws and vocational schools also need reform.
- **Manufacturing Diversification:** Traditionally strong in certain sectors. However, push for diversification into newer sectors is crucial for balanced growth.
- **Labour-intensive rather than capital-intensive:** Manufacturers often use low cost of labour to offset the significant initial investment required for automation. It leads to a multitude of issues (labour-related problems, increased non-value-added time, heightened health, safety, and environmental concerns, and ultimately, a decline in product quality levels)
- **Ease of Doing Business:** Progress made but room for improvement in labour laws, land acquisition, and bureaucracy.
- **Global Competitiveness:** India faces stiff competition from countries with established manufacturing sectors like China, South Korea, and Taiwan.

Conclusion:

Despite challenges, India's manufacturing sector holds promise, especially with emphasis on diversification and skill development. Addressing infrastructure gaps and improving ease of doing business are crucial for sustained growth and global competitiveness.

Fact Box: Recent Initiatives to boost Manufacturing Sector:

- Production Linked Incentive (PLI) Schemes
- Make in India
- Investment Clearance Cell (ICC)
- One District One Product (ODOP)
- Setting up Special Economic Zones (SEZs)

PYQ

Q. Faster economic growth requires increased share of the manufacturing sector in GDP, particularly of MSMEs. Comment on the present policies of the Government in this regard. (2023)

Q. Account for the failure of the manufacturing sector in achieving the goal of labour-intensive exports rather than capital-intensive exports. Suggest measures for more labour-intensive rather than capital-intensive exports. (2017)

14. PUNJAB AND HARYANA'S ROLE IN NATIONAL FOOD SECURITY

CONTEXT: Recent agricultural setbacks in India have underscored the vital role of Punjab and Haryana in ensuring the country's food security. These two states, often referred to as the breadbaskets of India, have faced challenges exacerbated by climate phenomena like El Niño.

Wheat Procurement:

- Punjab and Haryana's combined share of wheat procurement for the Central foodgrain pool stands at 75.5% in the current marketing season.
- Together, they fed the **public distribution system (PDS)** and other government programs.
- Traditionally, these states provided over 90% of wheat for the PDS, but this ratio declined to about 65% by the early 2010s.
- However, in recent years, setbacks from climate shocks have seen Punjab and Haryana's importance rise again.
- **Contrast with Other States:** States like Madhya Pradesh (MP), Uttar Pradesh (UP), and Rajasthan have seen decreased procurement due to climate impacts. Punjab and Haryana have fared relatively better due to longer winters and favorable sowing times.

Reasons for higher production:

- ▶ The higher yield is possibly because of the Green Revolution, a period when Indian agriculture was converted into an industrial system.
- ▶ Modern methods and technology — including high-yielding variety (HYV) seeds, tractors, irrigation facilities, pesticides and fertilisers — were adopted.

**Wheat Procurement for Central Pool
(lakh tonnes)**

	2019-20	2020-21	2021-22	2022-23	2023-24
Punjab	127.14	132.22	96.45	121.17	122.31
Haryana	74.00	84.93	41.86	63.17	70.32
MP	129.42	128.16	46.04	70.97	45.66
UP	35.77	56.41	3.36	2.20	8.47
Rajasthan	22.25	23.40	0.10	4.38	8.35
TOTAL*	389.93	433.44	187.92	262.02	255.24

Climate Impact on Wheat Production:

- Climate shocks, like **unseasonal temperature surges** and **heavy rains during critical crop stages, delayed rains** have affected wheat yields.
- Recent instances include an unusually warm November-December, impacting wheat yields, especially in central India.

Rice Production:

Food Security Programs in India

- Public Distribution System
 - Mid-day Meal Scheme
 - Integrated Child Development Services scheme
 - Mega Food Parks
 - Sampada Yojana
- Traditionally, Punjab and Haryana dominated rice procurement, but this has diversified to include other states.
 - However, recent crop years have seen an increase in the share of procurement from Punjab and Haryana due to favorable conditions.

Policy Implications:

- Government schemes like the **National Food Security Act (NFSA)** heavily rely on procurement from Punjab and Haryana.
- Even with shifts in acreage to other crops, these states will remain crucial for national food security due to their high yields.

Fact Box: Current Situation of Rice Procurement:

- Wheat procurement in India reached 25.7 million metric tonnes (mmt), which is 31% lower than the government's target of 37.29 mmt for the Rabi Marketing Season (RMS) 2024-25.
- **Reasons for Low Procurement:**
 - ▶ **Private Buying:** Private traders are aggressively buying wheat outside government-regulated markets, offering higher prices than the government's MSP.
 - ▶ **Farmers Holding Back:** Farmers are holding back their wheat stocks, hoping for further price increases.
- **Concerns for the Government:** Low procurement is concerning for the government, especially as wheat reserves fell to 7.5 mmt in March, close to the strategic buffer norm of 7.4 mmt. The government aims to boost reserves to meet requirements under the **National Food Security Act (NFSA)**.

PYQ

Q. Discuss the consequences of climate change on the food security in tropical countries. (2023)

15. RBI'S PROJECT FINANCING FRAMEWORK

CONTEXT: The Reserve Bank of India (RBI) recently issued draft regulations to enhance the regulatory framework for long-term project financing, targeting sectors like infrastructure, non-infrastructure, and commercial real estate. These regulations aim to create a "harmonized prudential framework" for financing such projects and propose revising the criteria for the date of commencement of commercial operations (DCCO).

Purpose of the Project Financing Framework

- Infrastructure projects often have long gestation periods, making them financially risky and challenging to fund solely through government resources.
- This necessitates public-private partnerships and project financing from domestic financial institutions, particularly for projects with longer payback periods.
- Delays are often due to issues like land acquisition and environmental clearances, while cost overruns stem from underestimating original costs and high costs for environmental and rehabilitation measures.

Key Revisions in the Framework

- **Provisioning:** The framework suggests increasing the general provision at the construction stage from 0.4% to 5% of exposures. This increase will be phased in, starting with 2% in FY25, 3.5% in FY26, and 5% in FY27. Once the project reaches the operational phase, provisioning can be reduced to 2.5% and then to 1%, provided the project meets certain financial criteria.
- **Pre-requisites for Financing:** The framework mandates that all necessary environmental, regulatory, and legal clearances must be in place before financial closure. For PPP projects, at least half of the stipulated land must be available.
- **Disbursal and Monitoring:** Financial disbursals are to be linked to project completion stages, with PPP disbursals beginning only after the developer receives the contract. Banks must deploy independent engineers or architects to certify progress.
- **Net Present Value (NPV):** A positive NPV is required to obtain project finance, and lenders must independently re-evaluate the project's NPV annually.
- **Repayment Norms:** The repayment tenure, including the moratorium period, should not exceed 85% of the project's economic life. Changes in repayment schedules due to increased project costs must be reassessed for viability before commercial operations commence.
- **Standby Credit Facility:** A standby credit facility for funding cost overruns due to delays, allowing for incremental funding of up to 10% of the original project cost.

PYQ

- Q. "Investment in infrastructure is essential for more rapid and inclusive economic growth." Discuss in the light of India's experience. (2021)
- Q. Explain how private-public partnership agreements, in longer gestation infrastructure projects, can transfer unsuitable liabilities to the future. What arrangements need to be put in place to ensure that successive generations' capacities are not compromised? (2012)
- Q. Adoption of the PPP model for infrastructure development of the country has not been free of criticism. Critically discuss the pros and cons of the model. (2013)

16. SC STAYS CONSTRUCTION PROJECT IN ECOLOGICALLY FRAGILE UTTARAKHAND

CONTEXT: The Supreme Court has temporarily halted the construction of a 90-acre hotel and township project in the Kumaon hills of Uttarakhand, challenging the "single window" clearance system intended to expedite infrastructural development in ecologically sensitive and seismic-prone lower Himalayan regions.

Key-highlights

- SC issued the stay order amidst Uttarakhand's ongoing struggle with forest fires and loss of green cover.
- **Petitioner's Argument:** The petition questioned the replacement of **mandatory environmental clearances** with "**single window**" clearances for large construction projects in fragile ecosystems.
- This case highlights the tension between **rapid infrastructural development** and the need to protect ecologically sensitive areas, emphasizing the **importance of rigorous environmental assessments** and legal scrutiny before proceeding with large-scale construction projects in fragile environments.

What is the process of Environmental Clearance in India?

- EC is a mandatory process for projects beyond a certain size, involving an Environmental Impact Assessment (EIA) and sometimes public hearings with local communities.
- **Why is EC Needed?** Large-scale construction projects (housing, infrastructure, commercial) significantly impact the environment through increased water usage, wastewater generation, traffic, and solid waste production.

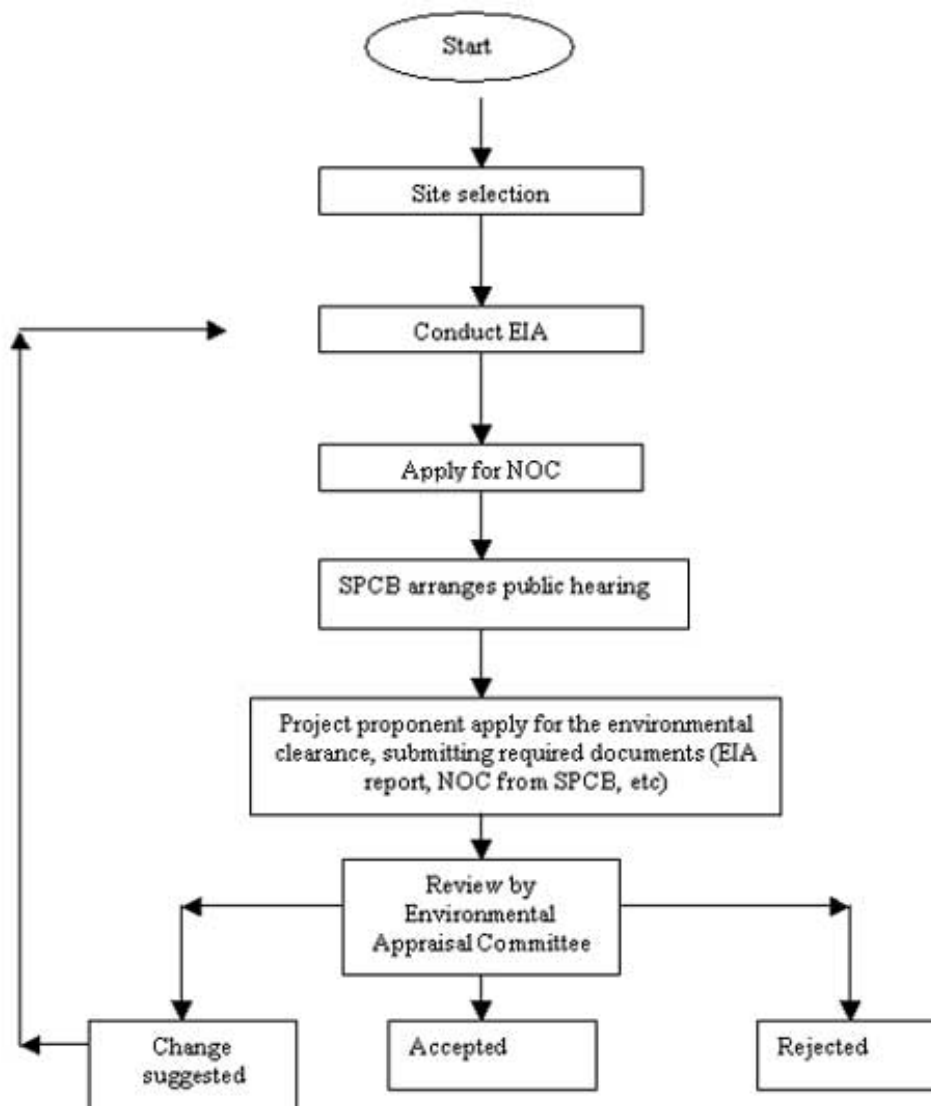
Governing Law and Amendments

- **Environmental Impact Notification, 2006:** Issued under the Environment (Protection) Act, 1986, it governs the EC process.
- **Amendments in 2018:** Expanded the range of projects requiring EC to cover more projects with significant environmental impacts.
- **Draft EIA Notification, 2020:** Proposed changes include reduced time for public hearings, exemptions for certain projects, and provisions for reporting non-compliance and penalties.
- **Single-Window Clearance:** Discussed since 2018, the goal is to expedite infrastructure development perceived to be hindered by bureaucratic processes.
 - ▶ **PARIVESH Portal:** A web-based application for online submission and monitoring of proposals for Environmental (EC), Forest (FC), Wildlife (WL), and Coastal Regulation Zone (CRZ) clearances.

- ▶ **Objective:** To provide a "single window" solution for these clearances through process automation, data synchronization, and leveraging technologies like GIS and advanced data analytics for efficient, transparent decision-making without compromising environmental safeguards.

Disadvantages of the Single-Window Clearance System for Environmental Approvals

- While suitable for customs and taxation, applying this system to environmental clearance is problematic.
- **Importance of rigorous environmental assessment**
 - ▶ **Seasonal Variations:** A thorough Environmental Impact Assessment (EIA) should account for seasonal changes over a year.
 - ▶ **Cumulative Impacts:** Projects in polluted areas require studies on cumulative impacts, adding to the time needed.



- ▶ **Stakeholder Involvement:** Sustainable development principles necessitate involving all stakeholders, particularly affected communities, which is a lengthy process.
- Complexity of the Single-Window Clearance System:
 - ▶ **Political Reform:** Implementing single-window clearance involves significant political and administrative changes.
- **Overhaul of Environmental Governance:** Could accelerate processes that are meant to rationalize or delay ecological destruction.
- **Potential Risks:** Simplifying the clearance process might compromise thorough environmental assessments, leading to ecological harm.

Way Forward (Sustainable Urban Growth)

- **Environmental Impact Assessment:** Conduct comprehensive assessments for all urban areas.
- **Risk-Zone Mapping:** Perform detailed risk mapping of towns based on geology, geomorphology, demography, economy, infrastructure, and services.
- **Urban Land-Use Policy:** Develop policies considering the carrying capacity of the natural ecosystem.
- **Address Inequalities:** Create frameworks to reduce urban, environmental, and socio-economic inequalities.
- **Disaster Risk and Climate Adaptation:** Mandate inclusion of these aspects in all urban development plans.
- **Sustainable Tourism:** Develop plans based on socio-ecological carrying capacity.

Fact Box: Threatened Himalayas

- The Himalayas were formed by the collision of the Indian Plate with the Eurasian Plate.
- Four major tectonic junctures (Trans Himadri Thrust, Main Central Thrust, Main Boundary Thrust, Main Frontal Thrust) and numerous faults make the region tectonically unstable.
- Many Himalayan ranges fall within Zone IV and Zone V, indicating high seismic activity.
- **Environmental Challenges**
 - ▶ **Land Mass Movements:** The region frequently experiences creeping, upliftment, subsidence, faulting, fracturing, slope failures, and landslides.
 - ▶ **Population and Urbanization:** The Himalayas are the most densely populated and rapidly urbanizing mountain ecosystem globally, with Uttarakhand being the fastest urbanizing Himalayan state.
 - ▶ **Tourism and Accessibility:** Even remote areas are becoming urbanized due to the growth of domestic tourism and demand for new tourist destinations.
 - ▶ **Climate Change:** Natural disasters induced by climate change are driving rural-to-urban migration, alongside migration for jobs and better amenities.

PYQ

- Q. How does the draft Environment Impact Assessment (EIA) Notification, 2020 differ from the existing EIA Notification, 2006? (2020)
- Q. Environmental impact assessment studies are increasingly undertaken before the project is cleared by the government. Discuss the environmental impacts of coal-fired thermal plants located at Pitheads. (2014)

17. LOCAL ENVIRONMENTAL FOOTPRINTS OF LUXURY CONSUMPTION

CONTEXT: In India, understanding household environmental footprints is crucial for tackling local environmental issues like water scarcity and air pollution. A recent study titled 'Water, air pollution and carbon footprints of conspicuous/luxury consumption in India' sheds light on the impact of affluent households engaging in luxury consumption.

Key Findings: Rising Environmental Footprints

- To assess environmental impacts, the study captured water usage, **particulate matter (PM2.5) emissions, and CO2 emissions** associated with different consumption choices.
- Key findings show that as households become richer, their environmental footprints increase, with the top 10% of households having double the average footprints.
- The biggest increase occurs in **air pollution footprints**, followed by **CO2 emissions and water footprints**. This suggests that the wealthiest segment is driving up consumption-related footprints.
- **Contributors to Environmental Footprints:**
 - ▶ Eating out is a major contributor to environmental footprints, especially among the wealthiest households.
 - ▶ Consumption of fruits, nuts, and luxury items like personal goods and jewelry also contribute significantly.
 - ▶ While transitioning from biomass to LPG reduces direct footprints, the lifestyle choices associated with affluence lead to a rise in **PM2.5 footprints** (and subsequently, the CO2 footprint).

Implications for Policy and Sustainability

- The study highlights disparities, with the top 10% having a higher CO2 footprint compared to global averages and sustainability targets. Policymakers need to focus on reducing consumption among affluent households to align with sustainability goals.

- Local and regional environmental issues like water scarcity and air pollution disproportionately affect marginalized communities. While affluent groups can afford protective measures, marginalized communities face greater vulnerability.
- This underscores the need for multi-footprint analysis to address environmental justice concerns and ensure equitable sustainability efforts.

18. LOSS OF FARM TREES

CONTEXT: A recent study based on satellite observations sheds light on a concerning trend in India's agricultural landscape. Between 2018 and 2022, over five million large farmland trees, vital for agroforestry, were felled to make way for farming.

Key Findings:

- The study revealed a significant loss of mature trees within a decade. It highlights the disappearance of around **11 percent of India's large trees**, particularly in states like Telangana and Maharashtra.
- Agricultural expansion:** Several states pointed to agricultural expansion, notably for paddy fields, as the primary reason for tree felling.
- Human-induced factors** like changing agricultural practices and infrastructure development were identified as major contributors to this alarming trend.

Concerns and Implications:

- The depletion of large farmland trees poses **ecological and socio-economic challenges**, including **loss of biodiversity, carbon release, and erosion of indigenous knowledge**.
- These trees play a crucial role in **agroforestry**, offering benefits like soil fertilization, crop protection, and provision of fruits and medicine.
- The decline in such trees may exacerbate **climate change and threaten the sustainability of agricultural practices**.
- India historically practices **traditional agroforestry**, integrating beneficial trees like neem, coconut, and jackfruit into agricultural areas.
- The loss of these trees signifies a shift in farming practices and land use patterns, with potential repercussions on environmental sustainability and livelihoods.

19. THE EVOLUTION AND ESSENTIALS OF INDIA'S CLIMATE POLICY

CONTEXT: The 1990s marked a period of significant transformation, both in India and globally, leading to the formulation of new policies across various sectors,

including the environment. The Rio Summit of 1992 witnessed the birth of crucial international agreements such as the United Nations Framework Convention on Climate Change (UNFCCC) and the Convention on Biological Diversity. Since then, India's approach to climate policy has evolved, driven by its unique geographical, demographic, and socio-economic factors.

Understanding Over-exploitation and Climate Policy:

- Climate change has become a pressing global challenge, exacerbated by unsustainable production and consumption patterns, primarily in developed nations.
- Recent studies highlight that countries like the United States and Europe bear significant responsibility for ecological damage due to overuse of natural resources.
- In contrast, countries like India have managed to stay within their sustainability limits despite their large populations.

Five Major Determinants of India's Climate Policy:

- Geography:** India's vast landmass and rich biodiversity play a crucial role in shaping its climate policy. The country's diverse ecosystems and seasonal cycles have been disrupted by climate change, leading to adverse impacts on nature and society.
- Population:** With a population of over 1.4 billion, India is home to a diverse array of species. Despite its large population density, India strives to strike a balance between population growth and environmental sustainability.
- Impacts:** India ranks among the most affected countries by extreme weather events, with climate change projected to have significant economic and social repercussions. Rising temperatures and changing rainfall patterns could adversely affect India's GDP and living standards.
- Worldview:** Rooted in ancient philosophies and cultural traditions, India's worldview emphasizes harmony with nature and sustainable living. Gandhi's principles of trusteeship and environmental stewardship continue to influence India's approach to climate action.
- Actions:** India's climate policy is characterized by evidence-based decision-making and proactive measures across various sectors. The country has prioritized renewable energy transition, international cooperation, and sustainable development initiatives.

Evolution of India's Climate Policy:

- India's climate policy has evolved over the years, guided by principles of equity and common but differentiated responsibilities.

- The **National Action Plan on Climate Change (NAPCC) of 2008** laid the groundwork for addressing climate challenges through sector-specific missions.
- Additionally, India has actively engaged in international forums, advocating for the interests of developing nations and promoting climate-friendly policies.
- **India's Leadership in Climate Action:** India has emerged as a global leader in climate action, emphasizing confidence and convenient actions aligned with inclusive growth principles.
- Initiatives such as the **International Solar Alliance (ISA) and the Coalition for Disaster Resilient Infrastructure (CDRI)** showcase India's commitment to sustainable development and international cooperation.
- The country's ambitious targets for renewable energy deployment and emission intensity reduction demonstrate its proactive stance towards mitigating climate change.

20. 50 YEARS OF POKHRAN-I

CONTEXT: On May 18, 1974, India conducted its first nuclear tests under the 'Smiling Buddha' operation in Pokhran, Rajasthan. This historic event marked India's entry into the nuclear club and raised significant international attention.

Background:

- Post-World War II, global alliances shifted, leading to the Cold War between the US and USSR.
- The **Nuclear Nonproliferation Treaty (NPT)** was signed in 1968 to prevent nuclear weapon proliferation, with P-5 countries (**China, France, Russia, the United Kingdom, and the United States**) being recognized as nuclear-weapon states.
- **Reasons for India's Nuclear Tests:**
 - ▶ India objected to the NPT's discriminatory nature and the lack of obligations for existing nuclear-weapon states.
 - ▶ Domestically, Indian scientists like Bhabha and Sarabhai laid groundwork for nuclear energy research.
 - ▶ Political shifts and conflicts, including wars with China and Pakistan, influenced India's decision to pursue nuclear capabilities.

Execution of Pokhran-I:

- The test yielded 12-13 kilotons of TNT and was conducted on Buddha Jayanti, the birth date of Gautam Buddha.
- No radioactivity was released into the atmosphere: The device tested was a fission device and there had been no release of radioactivity in the atmosphere.
- India became the sixth country in the World to conduct a successful Nuclear Test. It was also the first confirmed nuclear weapons test by a country outside the **Five Permanent** members of the **United Nations Security Council**.

Aftermath:

- ▶ India faced criticism and sanctions from countries like the US post-Pokhran-I.
- ▶ International perception changed gradually, leading to discussions on India's nuclear status and entry into groups like the NSG.
- ▶ **Efforts for Global Acceptance:**
 - India's responsible nuclear posture and diplomacy led to gradual acceptance by the international community.
 - Efforts to join the NSG continue, with changing stances of various countries and opposition primarily from China.

PYQ

- Q. Give an account of the growth and development of nuclear science and technology in India. What is the advantage of a fast breeder reactor programme in India? (2019)
- Q. With growing energy needs should India keep on expanding its nuclear energy programme? Discuss the facts and fears associated with nuclear energy. (2018)

21. GOPI THOTAKURA, THE FIRST INDIAN SPACE TOURIST

CONTEXT: Gopi Thotakura, an entrepreneur and pilot, became the first Indian space tourist on Blue Origin's NS-25 mission, led by Jeff Bezos. He's the first Indian citizen to experience space tourism, but officially the second Indian astronaut after Wing Commander Rakesh Sharma in 1984.

What is Space Travel?

- Space travel starts around **100 km above Earth's surface**, crossing the **Karman line**, which marks the boundary between Earth's atmosphere and outer space.
- Anything flying below this line is considered an **aircraft**, while anything crossing it is a **spacecraft**.

Private Space Tourism:

- Private space tourism became active in 2021 with companies like Virgin Galactic, Blue Origin, and SpaceX offering missions.
- These missions opened space tourism to **anyone willing to pay**.
- Different missions require different levels of training. Sub-orbital flights, like Thotakura's, require minimal training usually included in the ticket price.
- **Accessibility:** Space tourism is currently only affordable for the super-rich.
- Some more affordable options, like high-altitude balloon rides, are emerging. These take passengers up to

On this day in 1998, India conducted Pokhran-II, celebrated as National Technology Day

WHEN INDIA BECAME NUCLEAR

Three
detonations
happened
on May 11
& two on
May 13



Former President
Abdul Kalam and
R. Chidambaram were
the chief coordinators of
Pokhran-II

Power of the three bombs

15kt

Atom
bomb

45kt

Hydrogen
bomb

0.2kt

The sub-kiloton
device



India became the
6th country to join
the nuclear club

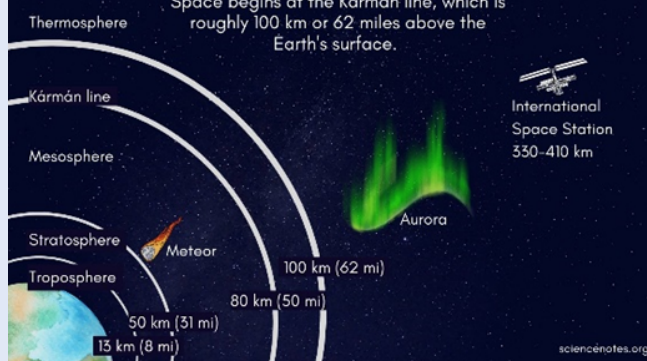
100,000 feet for about \$50,000. While they don't offer weightlessness, passengers can see the curvature of the Earth.

Fact Box: Kármán line

- The Kármán line is a boundary **62 miles (100 kilometers)** above **mean sea level** that borders **Earth's atmosphere** and the beginning of space.
- While the Kármán line itself has **no distinct physical characteristics**, its significance lies in its practical applications for space-related activities and aeronautical operations.

Where Does Space Begin?

Space begins at the Kármán line, which is roughly 100 km or 62 miles above the Earth's surface.



22. JOINT CULTURE IN ARMED FORCES

CONTEXT: Chief of Defence Staff (CDS) Anil Chauhan has called on the Indian Army, Navy, and Air Force to embrace a joint culture as they progress towards forming integrated operational

structures. This initiative, termed "Jointness 2.0" by the CDS, is the next step in enhancing collaboration among the three services.

Evolution from Jointness 1.0 to Jointness 2.0

- Jointness 1.0 aimed at fostering better camaraderie and consensus among the services, with no major differences impeding cooperation.
- Now, with Jointness 2.0, the focus shifts to creating a more **integrated joint culture** while respecting the **unique strengths of each service**. The goal is to integrate the best aspects of each service, aiming for the highest common factor rather than the least common denominator.

Need in India:

- These reforms are important in the **Indian Defence ecosystem** due to new global challenges and the current flux in world order, which force nations to review their security strategies.
- The rapid advancement of technology is transforming the way future wars will be fought, making these reforms even more critical.
- Jointness for India is far more important now than in the past. This is because India aims to be a regional power by 2030 and one of the global powers by 2050.

Integrated Theatre Commands

Jointness and integration are prerequisites for creating functional **Integrated Theatre Commands**. These commands will:

- **Separate Functions:** Separate operational functions from administrative functions like Raise-Train-Sustain (RTS), allowing operational commanders to focus solely on security matters.
- **Enable Reforms:** Lead to reforms such as transitioning

from single to multi-domain operations, integrating space and cyber domains with traditional ones, digitizing battlefield information, and shifting from net-centric to data-centric operations.

Fact Box: About Joint Culture

- Jointness was a term coined by the US armed forces to describe inter service cooperation.
- It's a combination of at least two arms in the military coordinated towards one common goal.

23. RADICAL DEMOCRACY

CONTEXT: In times of crisis, the need for societal reorganization becomes apparent. The 19th-century liberal democracy, once celebrated, had deteriorated into exploitation under capitalism. Faced with this reality, many sought alternatives to a system built on "every man for himself." However, the initial enthusiasm for revolution faded as communism and fascism led to dictatorship and global conflict.

Emergence of a New Ideology

- Amidst this turmoil, Indian freedom fighter **Manabendra Nath Roy (1887-1954)** and his colleagues proposed a solution that merged freedom with justice: **scientific humanism**. This philosophy, enriched by scientific advancements, aimed to reconcile human aspirations with societal needs.
- **Rejection of Totalitarianism:** Roy vehemently opposed totalitarianism and the regression into old-world theology. He believed that true freedom could only arise from rational thought and individual empowerment.
- **Reimagining Democracy:** Traditional liberal democracies failed to address societal inequities, leading to the rise of demagoguery and political disillusionment. Roy advocated for a radical democratic approach, where people actively participate in political processes and elect independent candidates.
- **Economic Justice:** There is the need for economic re-



structuring to prioritize human needs over profit. Solutions like **agricultural modernization, social security, and equitable industrialization** can be effective to uplift the masses.

Why Radical Democracy?

- Democracy, rooted in civilization, relies on the recognition of individual freedoms.
- Economic exploitation breeds political tyranny, thus, the importance of a democratic society based on justice and freedom increases.
- This vision underscores the **ethical obligation to uphold democratic values** in the face of **political disillusionment and authoritarianism**. It calls for a society where justice, freedom, and human dignity are paramount.

Concept Box:

- Radical Democracy
 - ▶ Radical democracy is a form of democracy which prioritizes the extension of equality, liberty, and power to all aspects of society.
 - ▶ It implies returning to the roots of democracy and its core values
- Scientific Humanism
 - ▶ Scientific humanism, also known as secular humanism, shares similarities with **Aristotle's concept of mankind creating skills for who we would be**.
 - ▶ In modern society, this translates to the idea that humans have the capacity to use reason, knowledge, and science to shape their own destiny and improve their condition. Just as Aristotle emphasized the importance of developing skills and knowledge to fulfill human potential, scientific humanism advocates for the use of scientific methods and critical thinking to address human needs and challenges.

PYQ

Q. The crisis of ethical values in modern times is traced to a narrow perception of the good life. Discuss (2017)

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SECTION

B

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1. MANIPUR'S "SACRED" THANGJING CHING (HILL)

CONTEXT: The Manipur government has taken action against the Kuki National Front - Military Council (KNF-MC) for renaming a sacred hill of the Meitei community and claiming it as their "camp." The insurgent group installed a signboard at the base of Thangjing ching (hill) calling it "Thangting camp" of the "Kuki Army."

About Thangjing Ching (Hill)

- Thangjing ching is a sacred site for the Meitei community in the lakeside town of Moirang. It is home to the deity **Ibudhou Thangjing** and is believed to be at least **2,000 years old**.
- The Thangjing ching range lies between Moirang town and Churachandpur district, which are 40 km apart.

Fact Box: About Meiteis

- Meiteis are the largest community in Manipur, accounting for about 53% of the State's total population of 2.85 million (2011 census).
- They are also known as Meetei or Manipuri and are spread across other northeastern States, Bangladesh, and Myanmar.
- Their language, **Meiteilon**, is one of the 22 recognized languages in the Eighth Schedule of the Constitution.
- Their ancient script, **Meitei Mayek**, dates back to the sixth century and is being revived after Bengali was made the official script in the early 18th century.
- Religion:** Over 83% of the Meitei people are Hindus. The community also includes Meitei Pangals (Manipuri Muslims) who make up 8.4%, Christians, and those who follow the indigenous Sanamahi faith.
- History and Clans:** The history of the Meiteis is chronicled in texts such as Cheitharol Kumbaba and Ningthourol Lambuba.
 - The Meiteis are divided into seven clans: **Mangang, Luwang, Khuman, Angom, Moirang Kha, Ngangba, and Sarang Leishangthem**.
 - The Meitei kingdom, called Kangleipak, traces its origin to **Pakhangba** (1445-1405 BCE), who is believed to have come from present-day China and settled in the **Koubru hills**, about 35 km northwest of Imphal.

2. TIRUPATI GANGAMMA JATARA

CONTEXT: The week-long annual folk festival Gangamma Jatara has been celebrated in Tripura, Andhra Pradesh.

What is the Tirupati Gangamma Jatara?

- The Tirupati Gangamma Jatara is an important **annual festival** for the people of Tirupati.
- It is celebrated in the first half of May every year.
- Who is Goddess Gangamma:** Gangamma is a revered goddess in Tirupati, believed to be born in Avilala, Tirupati. She is worshipped as the younger sister of **Lord Sri Venkateswara**, the main deity of Tirupati.
- During the festival, people from various places visit the **Gangamma temple in Tirupati**, known as **Tataiah-gunta Gangamma temple**. The temple is named after a 16th-century devotee, Tirumala Thathacharyulu.
- Unique Traditions of the Festival:** As a symbolic birthday gift from a brother to his sister, the Tirumala Tirupati Devasthanam sends a special gift called "Parisu" on behalf of Lord Sri Venkateswara to Goddess Gangamma.

Legend Behind the Festival:

- According to folklore, a local chief named Palegadu used to exploit beautiful women.
- The women prayed to Goddess Jaganmatha, who then took birth as Gangamma in Avilala village.
- Palegadu insulted Gangamma, and in response, she revealed her terrifying form, causing him to flee. Gangamma searched for Palegadu, wearing different disguises for three days. On the fourth day, disguised as Palegadu's boss, she lured him out of hiding and killed him.

3. REASONS BEHIND THE RISING HEATWAVES

CONTEXT: India's northwest is experiencing a surge in heatwave days this summer. The India Meteorological Department (IMD) attributes this phenomenon to a confluence of weather patterns affecting the breadbasket region.

Climate Patterns Driving the Heat

- The increase in heatwave days is largely attributed to a combination of factors.
- One significant contributor is the weakening El Niño effect, a climate pattern characterized by warmer-than-average sea surface temperatures in the central and eastern Pacific Ocean.
- El Niño typically leads to hot and dry weather in Asia, including India, while causing heavier rains in parts of the Americas.
- Warm, **westerly winds** blowing in from Pakistan also contributed to the heat. The westerlies -- or westerly winds -- play an important role in weather and climate locally and on a global scale by influencing precipitation patterns, impacting ocean circulation and steering tropical cyclones.

Fact Box:

- **El Niño:** El Niño is a climate phenomenon characterized by warmer-than-average sea surface temperatures in the central and eastern Pacific Ocean. It can impact weather patterns worldwide, leading to droughts, floods, and temperature extremes in various regions.
- **Westerly Winds:** The westerly winds, also known as the **westerlies**, occur at two regions on Earth: between 30 and 60 degrees latitude in the northern hemisphere and between 30 and 60 degrees latitude in the southern hemisphere. Westerlies run west to east while other winds run east to west.
- **Breadbasket Region:** The term "breadbasket region" refers to an area known for its fertile soil and high agricultural productivity. In India, the northwest region, including states like Punjab and Haryana, is often referred to as the country's breadbasket due to its significant contribution to grain production.

4. LIGHTNING STRIKES

CONTEXT: Eleven people were killed after being struck by lightning in various places across Malda district in West Bengal. The numbers are concerning as lightning is the biggest killer among "forces of nature", which also include avalanches, cyclones and landslides. It accounted for 40% of 7,126 such deaths in 2021, according to the latest data from the National Crime Records Bureau (NCRB).

What is Lightning?

- Lightning is a rapid and massive discharge of electricity in the atmosphere, some of which reaches the Earth.
- It forms in **large, moisture-laden clouds** that are about 10-12 km tall. The cloud base is typically 1-2 km from the Earth's surface, with the top about 12-13 km high, where temperatures range from -35° to -45°C.
- **Formation of Lightning:**
 - **Cloud Formation:** As water vapor moves up in the cloud, it cools and condenses into water droplets. When the droplets reach temperatures below 0°C, they turn into ice crystals.
 - **Movement and Collisions:** Smaller ice crystals move upward, while larger ones fall downward. Their collisions release electrons, generating a chain reaction of free electrons.
 - **Charge Separation:** This movement causes the top of the cloud to become positively charged and the middle to become negatively charged, creating a massive electrical potential difference of one to ten billion volts.
 - **Current Flow:** A large current, between 100,000 to a million amperes, flows between the cloud layers.

- Forms of Lightning:
 - Inter-cloud
 - Intra-cloud
 - Cloud-to-ground (this form kills humans, as well as animals and livestock, and can substantially damage property)
- The Earth, being a **good conductor of electricity** but **electrically neutral**, becomes positively charged compared to the **cloud's middle layer**.
- Consequently, about **15%-20% of the current** is directed towards the Earth, causing damage to life and property.
- **Vulnerable states:** Madhya Pradesh, Chhatisgarh, Maharashtra, Odisha, West Bengal, Bihar, UP, Karnataka, Jharkhand and Tamil Nadu.
- This is to be noted that lightning is **not classified as a natural disaster** in India.

PYQ

Q. During a thunderstorm, the thunder in the skies is produced by the (2013)

1. meeting of cumulonimbus clouds in the sky
2. lightning that separates the nimbus clouds
3. violent upward movement of air and water particles

Select the correct answer using the codes given below:

- (a) 1 only
- (b) 2 and 3
- (c) 1 and 3
- (d) None of the above produces the thunder

Solution: (d)

5. THE INDIAN MONSOON

CONTEXT: The India Meteorological Department (IMD) announced the onset over the southern Bay of Bengal, the Nicobar Islands, and the South Andaman Sea. What makes this announcement even more exciting is the prediction of above-normal rainfall for the season, a rare occurrence in nearly a decade.

Factors influencing above-normal Monsoon

- A monsoon is a seasonal change in the direction of the prevailing, or strongest, winds of a region.
- **Retreat of El Nino:** The Indian monsoon is heavily influenced by various factors, including the **El Nino and La Nina** phenomena in the Pacific Ocean. El Nino brings **suppressed rainfall**, while La Nina enhances **rainfall activity**.
- This year, the transition from El Nino to a neutral condition and the likely emergence of La Nina later in the season have set the stage for above-normal rainfall.

- Other factors:
 - ▶ Favourable La Nina conditions
 - ▶ Positive Indian Ocean Dipole (IOD)
 - ▶ Reduced snow cover in Northern Hemisphere

PYQ**PYQ**

Q. How far do you agree that the behaviour of the Indian monsoon has been changing due to humanizing landscape? Discuss. (2015)

6. IMD'S HEATWAVE RED ALERT

CONTEXT: The Indian Meteorological Department (IMD) issued a red alert for heatwaves in Delhi, Punjab, Haryana, and most parts of Western Rajasthan.

Understanding Heatwaves:

- **Qualitative Definition:** A condition where air temperature becomes dangerously high for humans when exposed.
- **Quantitative Definition:** Heatwaves are determined based on temperature thresholds:

- ▶ **In Plains:** When maximum temperature reaches 40°C or higher.
- ▶ **In Hilly regions:** When maximum temperature reaches 30°C or higher.
- ▶ **For Coastal areas:** When the maximum temperature departure is 37°C or more than normal.
- 87.5 mm
- ▶ **Heatwave:** Temperature is 4.5°C to 6.4°C above normal.
- ▶ **Severe Heatwave:** Temperature rises more than 6.4°C above normal.

Heatwave Red Alert:

- A red alert signifies an extreme heat warning.
- It indicates a severe heatwave lasting more than two days or a total of more than six heat/severe heatwave days.
- There's a very high risk of heat-related illnesses, including heat stroke, especially for vulnerable populations such as the elderly, infants, and those with chronic diseases.
- Precautionary measures may include early closure of schools to protect children from heat-related risks.
- According to WHO, heatwaves have caused over 166,000 deaths between 1998 and 2017.

Colour Code	Alert	Warning	Impact	Suggested Actions
Green (No action)	Normal Day	Maximum temperatures are near normal	Comfortable temperature. No cautionary action required.	Nil
Yellow Alert (Be updated)	Heat Alert	Heat wave conditions at isolated pockets persists on 2 days	Moderate temperature. Heat is tolerable for general public but moderate health concern for vulnerable people e.g. infants, elderly, people with chronic diseases	(a) Avoid heat exposure. (b) Wear lightweight, light-coloured, loose, cotton clothes. (c) Cover your head: Use a cloth, hat or umbrella
Orange Alert (Be prepared)	Severe Heat Alert for the day	(i) Severe heat wave conditions persists for 2 days (ii) Through not severe, but heat wave persists for 4 days or more	High temperature. Increased likelihood of heat illness symptoms in people who are either exposed to sun for a prolonged period or doing heavy work. High health concern for vulnerable people e.g. infants, elderly, people with chronic diseases.	(b) Avoid heat exposure— keep cool. Avoid dehydration. (b) Drink sufficient water- even if not thirsty. (c) Use ORS, homemade drinks like lassi, torani (rice water), lemon water, buttermilk, etc. to keep yourself hydrated
Red Alert (Take Action)	Extreme Heat Alert for the day	(i) Severe heat wave persists for more than 2 days. (ii) Total number of heat/severe heat wave days exceeding 6 days.	Very high likelihood of developing heat illness and heat stroke in all ages.	Extreme care needed for vulnerable people.

7. RUSSIAN PROPOSAL IN THE BALTIC SEA

CONTEXT: Russia's defense ministry suggested changing the borders of its territorial waters in the Baltic Sea. Possible areas affected include eastern Gulf of Finland, islands near the Finnish coast, Baltiysk, and Zelenogradsk in Kaliningrad.

About Baltic Sea Region:

- The Baltic Sea is a **large brackish inland** sea bordered by several countries.



- It stretches from St Petersburg to Denmark, including Finland, Sweden, Estonia, Latvia, Lithuania, Poland, Germany, and Denmark.
- Notable subdivisions:** Gulf of Bothnia in the north, Bothnian Sea, and Sea of Åland in the south.
- Geographical Features:**
- Maximum depth:** 459 meters, located on the Swedish side.
- Connections:**
 - Gulf of Finland** connects to Saint Petersburg, Gulf of Riga between Estonia and Latvia.
 - Artificial waterways** connect the Baltic Sea to the White Sea and the North Sea.

8. EGYPT'S PYRAMIDS

CONTEXT: A recent study suggests that a long-lost, ancient branch of the Nile could have built the pyramids.

Key-highlights:

- Method:** Scientists used radar satellite imagery, geo-physical data, and soil coring to find an **ancient Nile branch**.

- Name:** They named the branch "Ahramat." It was around 64 kilometers long and 200 to 700 meters wide. It ran right adjacent to the pyramids and could have been used to move heavy material around.
- Connection to Pyramids:** Many pyramids from the Old and Middle Kingdoms had causeways leading to this branch, ending at Valley Temples, possibly acting as river harbors.
- Explanation:** The presence of this river explains why 31 pyramids were built in a row along a desert strip in the Nile Valley around 4,700 to 3,700 years ago.
- Significant Sites:** This strip near the ancient capital of Memphis includes famous pyramids like the Great Pyramid of Giza, Khafre, Cheops, and Mykerinos. *(see map on next page)*

Fact Box:

Giza Pyramids:

- Age:** These pyramids are ancient structures from Egypt's Old Kingdom, dating back around 4,500 years.
- Dynasty:** Three main pyramids were constructed during the times of rulers Khufu, Khafre, and Menkaure over three generations.
- Complex Structure:** Each pyramid was part of a larger royal mortuary complex. This complex included a temple at the pyramid's base and a long causeway leading to a valley temple on the edge of the floodplain.
- UNESCO Recognition:** The Giza Pyramids were added to the UNESCO World Heritage List in 1979.

Nile River:

- Length:** The Nile River holds the title of being the longest river on Earth.
- Route:** Originating from Lake Victoria in Uganda, Tanzania, and Kenya, the Nile flows northward and eventually empties into the Mediterranean Sea.
- Nile Basin:** It covers 11 African countries: **Uganda, Eritrea, Rwanda, Democratic Republic of the Congo, Tanzania, Burundi, Kenya, Ethiopia, South Sudan, Sudan, and Egypt.**

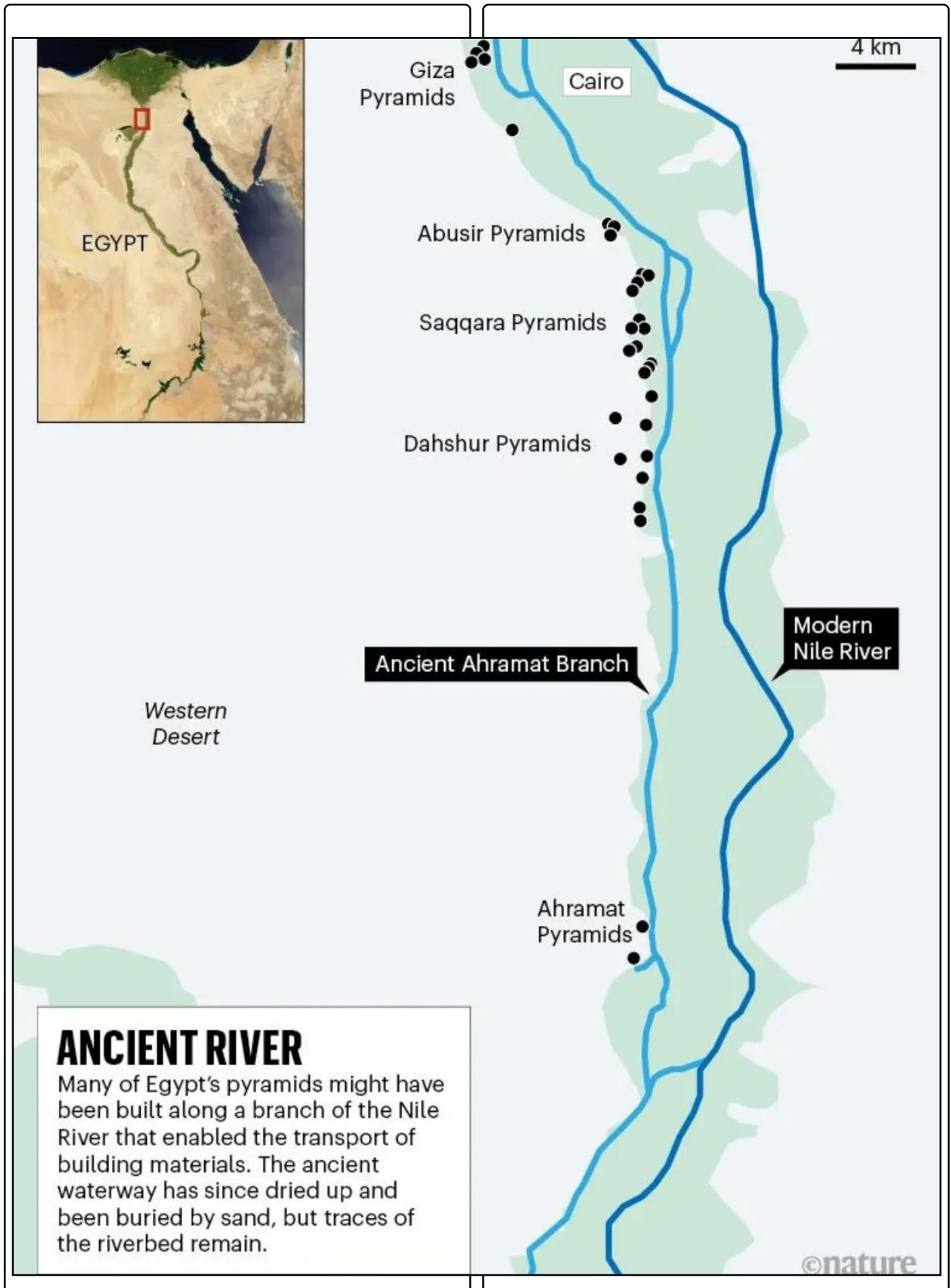
PYQ

Q. Match List-I with List-II and select the correct answer from the codes: (2017)

List I (City)	List II (River)
1. Khartoum	(a) Zaire
2. Brazzaville	(b) Nile
3. Rotterdam	(c) Seine
4. Paris	(d) Rhine

- (a) A-2 B-1 C-4 D-3
 (b) A-1 B-2 C-3 D-4
 (c) A-4 B-3 C-2 D-1
 (d) A-3 B-4 C-1 D-2

Solution: (a)



9. SUPREME COURT'S EMPHASIS ON PROPERTY RIGHTS

CONTEXT: The Supreme Court stressed the importance of constitutional safeguards when the State acquires private property, ensuring fair procedures and protecting property owners' rights under the Indian Constitution.

Key Points:

- Fair Procedure Requirement: Article 300A prohibits the deprivation of property without following a fair procedure established by law. This applies when the State acquires private property for public purposes and compensates the owner.
- Procedural Justice: Procedural fairness is essential, emphasizing that acquisition must adhere to proper procedures even with compensation.
- Fundamental Procedural Rights: Property owners have seven fundamental rights during acquisition. These sub-rights, as traced in the judgment, are:
 - ▶ **The Right To Notice:** duty of the State to inform the person that it intends to acquire his property
 - ▶ **The Right To Be Heard:** duty of the State to hear objections to the acquisition
 - ▶ **The Right To A Reasoned Decision:** duty of the State to inform the person of its decision to acquire
 - ▶ **The Duty To Acquire Only For Public Purpose:** duty of the State to demonstrate that the acquisition is for public purpose
 - ▶ **The Right Of Restitution Or Fair Compensation:** duty of the State to retribute and rehabilitate
 - ▶ **The Right To An Efficient And Expeditious Process:** duty of the State to conduct the process of acquisition efficiently and within prescribed timelines of the proceedings
 - ▶ **The Right Of Conclusion:** final conclusion of the proceedings leading to vesting
- **State Obligations:** The State must acquire property only for public purposes and conduct the process efficiently within set timelines.

Fact Box: About Article 300-A

- Article 300-A, added to the Constitution in 1978, protects the **right to property**.
- It states that no one can be deprived of their property except by law.
- This means the government can acquire property for public benefit, but only through legal means. The property acquisition must be legitimate and serve the public interest.
- The right to property was initially a fundamental right under **Article 19(1)(f)** and **Article 31** of the Constitution. But in 1978, the **44th Amendment Act** changed this by removing it as a fundamental right. Instead, it became a legal right under **Article 300A**.

PYQ

Q. What is the position of the right to property in India? (2021)

- (a) Legal right available to citizens only
- (b) Legal right available to any person
- (c) Fundamental Right available to citizens only
- (d) Neither Fundamental Right nor legal right

Solution: (b)

10. KUDUMBASHREE

CONTEXT: May 17 marked the 26th anniversary of Kudumbashree, a significant example of social progress in Kerala.

About Kudumbashree programme

- Launched in 1997, the Kudumbashree programme aimed to empower women and eradicate poverty.
- It has since grown into the largest women's network in the world, boasting 46.16 lakh members across three lakh **neighbourhood groups (NHGs)**.
- Kudumbashree primarily focuses on **microfinance**.
- It started as a cluster of microcredit neighbourhood groups engaged in thrift and credit activities. Over the years, it has created many crisis managers and entrepreneurs from humble beginnings.

11. WHO'S BACTERIAL PATHOGENS PRIORITY LIST

CONTEXT: The World Health Organization (WHO) latest **Bacterial Pathogens Priority List (BPPL)** highlights 15 families of **antibiotic-resistant bacteria**, categorized into **critical, high, and medium priorities for intervention**.

Key Findings:

- The critical priority pathogens pose significant global threats due to their resistance to treatment and ability to spread resistance to other bacteria.
- The list covers 24 pathogens, spanning 15 families of antibiotic-resistant bacterial pathogens.
- The inclusion of these pathogens in the list underscores their global impact in terms of burden, as well as issues related to transmissibility, treatability, and prevention options.
- It also reflects the R&D pipeline of new treatments and emerging resistance trends.

PYQ

Q. Which of the following are the reasons for the occurrence of multi-drug resistance in microbial pathogens in India?

1. Genetic predisposition of some people
2. Taking incorrect doses of antibiotics to cure diseases
3. Using antibiotics in livestock farming
4. Multiple chronic diseases in some people

Select the correct answer using the code given below.

- (a) 1 and 2 (b) 2 and 3 only
(c) 1, 3 and 4 (d) 2, 3 and 4

Solution: (b)

12. X CHROMOSOME & AUTOIMMUNE DISEASE RISK

CONTEXT: In mammals, including humans, the X chromosome plays a crucial role beyond determining sex. However, recent genomic studies have shown that the X chromosome influences various biological processes and affects susceptibility to certain diseases.

Genes and Diseases

- The human X chromosome encodes around 800 genes, which produce proteins essential for various bodily functions. When these genes malfunction, they can cause numerous genetic diseases.
- Diseases influenced by the X chromosome can be grouped into three types:
 - **X-linked Genetic Diseases** There are over 500 known X-linked genetic diseases, predominantly affecting males. Common examples include: **Red-green colour blindness, Duchenne muscular dystrophy, Agammaglobulinemia** (immunodeficiency disorder)
 - **Diseases linked to X-chromosome aneuploidy:** Aneuploidies are numerical abnormalities of the X chromosome, such as:
 - ▶ **Klinefelter syndrome:** Characterized by an extra X chromosome (XXY).
 - ▶ **Turner's syndrome:** Characterized by the loss of one X chromosome in females (X instead of XX).
 - **Diseases influenced by X chromosome inactivation (XCI) escape:** In 1961, geneticist Mary Frances Lyon discovered that one of the X chromosomes in females is randomly inactivated during early embryonic development to prevent overexpression of X-linked genes. This process, called X chromosome inactivation (XCI), involves epigenetic changes that silence most genes on one X chromosome.
 - ▶ **Autoimmune Diseases:** Autoimmune diseases, where the body's immune system attacks its own tissues, are more common in females. Examples include systemic lupus erythematosus, rheumatoid arthritis, and Sjögren's syndrome. Altering XCI can lead to the reactivation of previously inactive genes, contributing to these diseases.
 - ▶ **Alzheimer's Disease:** Alzheimer's disease, which affects more women than men, is also linked to the X chromosome.

13. PAKSAT MM1

Critical priority	High priority	Medium priority
<ul style="list-style-type: none"> • <i>Acinetobacter baumannii</i>, carbapenem-resistant; • Enterobacterales, third-generation cephalosporin-resistant; and • Enterobacterales, carbapenem-resistant; • <i>Mycobacterium tuberculosis</i>, rifampicin-resistant (included after an independent analysis with parallel tailored criteria, and subsequent application of an adapted multi-criteria decision analysis matrix). 	<ul style="list-style-type: none"> • <i>Salmonella Typhi</i>, fluoroquinolone-resistant • <i>Shigella spp.</i>, fluoroquinolone-resistant • <i>Enterococcus faecium</i>, vancomycin-resistant • <i>Pseudomonas aeruginosa</i>, carbapenem-resistant • Non-typhoidal <i>Salmonella</i>, fluoroquinolone-resistant • <i>Neisseria gonorrhoeae</i>, third-generation cephalosporin- and/or fluoroquinolone-resistant • <i>Staphylococcus aureus</i>, methicillin-resistant 	<ul style="list-style-type: none"> • Group A streptococci, macrolide-resistant • <i>Streptococcus pneumoniae</i>, macrolide-resistant • <i>Haemophilus influenzae</i>, ampicillin-resistant • Group B streptococci, penicillin-resistant

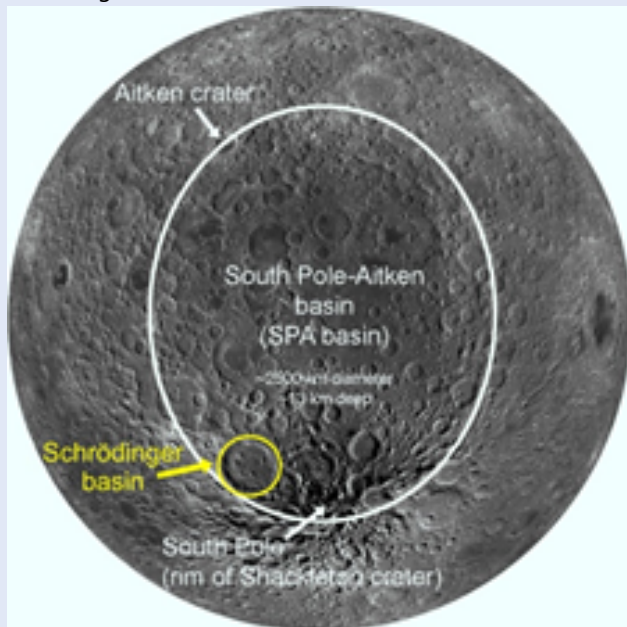
CONTEXT: Pakistan is set to launch PAKSAT MM1, its Multi-Mission Communication Satellite from the Xichang Satellite Launch Centre in China.

About

- The PAKSAT MM1 project is a collaborative venture between Pakistan’s Space and Upper Atmosphere Research Commission (Suparco) and the Chinese aerospace industry.
- Earlier this year, Pakistan celebrated the successful launch of its mini-satellite ‘iCube-Qamar’ as part of China’s **Chang’e-6 lunar mission**.
- Pakistan’s other space missions: BADR-A, BADR-B, PAKSAT 1-R, PRSS-1, PakTes 1-A, and iCube Qamar.

Fact Box: China’s Chang’e-6 mission

- China’s Chang’e-6 mission, set to last for 53 days, aims to collect samples from **South Pole-Aitken basin**, a large crater on the lunar surface.
- The impact that formed this basin, believed to be one of the largest in the solar system’s history, likely brought up material from the Moon’s mantle. By retrieving this material, scientists hope to learn more about the Moon’s interior.
- China has previously achieved a soft landing on the far side of the Moon with its **Chang’e-4 mission** in 2019. This mission explored the **Moon’s Von Karman crater** using a rover.



14. UPGRADED TEJAS MK1A FIGHTER AIRCRAFT

CONTEXT: The Tejas Mk1A, an advanced version of India’s indigenous supersonic fighter aircraft, is poised to bolster the Indian

Air Force’s capabilities. This upgraded variant builds upon the success of the Tejas programme initiated in the late 1980s.

Features of Tejas Mk1A:

- It incorporates almost **50% more indigenous** content compared to its predecessor.
- With 40 enhancements, it promises **advanced capabilities**.
- Equipped with the **Israel EL/M-2025 AESA Radar**, soon to be replaced by the indigenous **Uttam AESA Radar**.
- It offers improved situational awareness with a larger canopy and enhanced aerodynamics.
- Capable of carrying various weaponry, including **Beyond Visual Range (BVR) missiles and Advanced Short Range Air-to-Air missiles (ASRAAM)**.
- Features an indigenously developed digital fly-by-wire flight control system.

Significance of Tejas:

- The Tejas programme was conceived to replace aging MiG-21 and Su-7 aircraft.
- Tejas is the lightest and smallest aircraft in its class, with a composite structure contributing to its lightness.
- It boasts versatile capabilities for ground attack, interception, air-to-air combat, and air defense.
- The **Mk1, Mk1A, and Mk2** variants are slated to replace aging **MiG-21, MiG-29, and SEPECAT Jaguar aircraft** in the Indian Air Force.

Fact Box: Uttam Radar

- The Uttam Radar can track multiple targets and reportedly has a range of more than 200 km to give the aircraft a 360-degree scanned view of its surroundings.
- It will be used in the later variants like TEJAS MK-2 and the Twin Engine Deck-Based Fighters (TEDBF).

15. DAULAT BEG OLDI (DBO) AND NYOMA

CONTEXT: Amid strained relations with China following the 2020 standoff in eastern Ladakh, the Indian Army has taken significant steps to bolster its defences near the Line of Actual Control (LAC). Recently, two tank repair facilities have been established in Ladakh, marking a crucial development in India’s military infrastructure.

Key-highlights

- Located near the Line of Actual Control (LAC), the Indian Army has set up two tank repair facilities in Ladakh (both at altitudes exceeding 14,500 feet),

- ▶ one in the **Daulat Beg Oldi (DBO) Sector**
- ▶ the other in **Nyoma**
- These facilities are vital for maintaining and repairing armoured vehicles deployed in the region.

Need for Repair Facilities:

- Following the 2020 Galwan Valley clash with China, India deployed numerous tanks, BMP combat vehicles, and **Quick Reaction Fighting Vehicles** in Ladakh.
- However, due to the challenging terrain and harsh weather conditions, transporting these vehicles for maintenance and repair posed significant logistical challenges.
- The establishment of these repair centres addresses the logistical hurdles faced by the Indian Army, enhancing the effectiveness and serviceability of armoured fighting vehicles.
- With over 500 tanks and **infantry combat vehicles** stationed in eastern Ladakh, having local repair facilities is crucial for maintaining operational readiness.

Fact Box: Strategic Importance of Locations:

- **Daulat Beg Oldi (DBO) and Nyoma** hold strategic significance due to their proximity to key areas along the LAC.
- DBO is situated near the **Depsang Plains**, an area of strategic importance at an altitude of 16,000 feet. Tanks like **T-90s, T-72s, and BMP II Armoured Vehicles** have been deployed in this region.
- Nyoma, located just **50 km from the LAC**, is undergoing upgrades to facilitate fighter jet operations, underscoring its importance in India's defence strategy.

16. DEDA METHOD

CONTEXT: In the dense forests of the Godavari Valley, Muria tribal farmer, preserves seeds using a traditional method called 'deda'.

What is deda method?

- This practice involves packing seeds in leaves to resemble boulders, providing multi-layer protection against pests and worms.
- The deda process involves spreading wood ash inside **Siali leaves**, covering it with lemon leaves, and sealing the seeds within. Each deda can hold up to 5kg of seeds, ensuring their preservation for up to five years.
- The deda method, a testament to the Muria's resilience guarantees protection of seed from pests and worms.

Fact Box: Muria Tribe

- The Muria tribe is an indigenous group from **Bastar district, Chhattisgarh**, belonging to the larger **Gondi community**.
- They are scheduled tribe Dravidian community
- Muria people follow traditional animist beliefs, worshiping village and clan deities.
- **Language:** Koya (Dravidian language)

17. PHTHEIROSPERMUM LUSHAIORUM

CONTEXT: A rare hemi-parasitic terrestrial plant has been found in Phawngpui National Park of Mizoram.

Key-highlights

- Named *Phtheirospermum lushaiorum*, this new species was published in the esteemed plant taxonomy journal, *Phytotaxa*.
- *Phtheirospermum lushaiorum* is a **hemi-parasitic plant**, meaning it lacks a fully developed root system and obtains water and minerals from another plant.
- However, it still possesses chlorophyll and can produce its own food through photosynthesis.
- Specialized structures called **haustoria** allow it to tap into the host plant's sap-conducting tissue.
- The plant flowers from July to September and bears fruits from August to October.
- The specific epithet "**lushaiorum**" honors the **Lushai tribe** of Mizoram, reflecting their dedication to biodiversity conservation.

Fact Box: About Lushai Tribe

- The Lushai tribe, also known as **Mizos**, belongs to the **Kuki-Chin group** of tribes.
- They are of Mongoloid origin.
- The primary occupations of the Lushais are **jhum cultivation** (slash-and-burn agriculture) and **orange cultivation**.
- The Lushais are also famous for their **Bamboo Dance**, known as **Cheraw dance**, which is popular both within and outside the country.

18. SRI LANKAN GOLDEN-BACKED FROG (INDOSYLVIRANA SERENDIPI)

CONTEXT: Researchers from the Zoological Survey of India rediscovered the Sri Lankan golden-backed frog (*Hylarana gracilis*) in the Koundinya Wildlife

Sanctuary, Chittoor district. This marks its reappearance after two centuries, adding to India's freshwater frog species count, now totalling 20.

About Sri Lankan golden-backed frog

- Sri Lankan golden-backed frog (*Indosylvirana serendipi*), is a species of frog in the family **Ranidae**.
- These frogs are typically found in **tropical lowland evergreen forests**, along stream banks, and in marshy areas.
- They are native to Sri Lanka but have been newly recorded in the **Eastern Ghats**.

Significance:

- The rediscovery highlights the historic land bridge between India and Sri Lanka. Amphibians like these frogs serve as ecological indicators, and the Eastern Ghats, where they were found, host 27 amphibian species, fewer than the Western Ghats.

Fact Box: Koundinya Wildlife Sanctuary

- Koundinya Wildlife Sanctuary is located in the state of Andhra Pradesh.
- The sanctuary is the **only place in the state** where **Asian elephants reside**. But these elephants are **not native** to the region.
- **Forest type:** Dry deciduous forests with thorny scrubs
- **Flora:** Albizia amara, sAcacia, Lagerstroemia, Ficus, bamboo, Santalum album.
- **Fauna:** sloth bear, panther, cheetal, chowsingha, sambar, porcupine, wild boar, jungle cat, jackal, jungle fowl, starred tortoise and slender loris.

19. SCIENTISTS UNEARTH CLONING STARFISH FOSSIL

CONTEXT: Scientists have discovered a fascinating creature from 155 million years ago that could clone itself. This starfish-like creature with six arms had the ability to regenerate its body, according to a study.

Key-highlights:

- The unique fossil was found in 2018 in Germany, where there used to be a **deep lagoon** with coral meadows and sponge beds.
- This fossil is the only known example of the **new species of brittle star**, named **Ophiactis hex**.
- This creature could produce genetically identical offspring by breaking off parts of its own body and regrowing them, a process known as **fissiparity**. This phenomenon's exact timing of evolution was previously

unknown.

- The 155 million-year-old fossil is exceptionally well-preserved, showing all its hook-shaped arm spines.
- Although fossils of creatures regenerating individual arms are somewhat common, finding those with regenerating body halves is extremely rare. This discovery is only the second known case and the first linked to six-fold **symmetry and clonal fragmentation**.

20. MANIPURI PONY (MEITEI SAGOL)

CONTEXT: To prevent the Manipuri Pony (Meitei Sagol) from disappearing, the government of Manipur has teamed up with various organizations and associations to protect its natural habitat in the wetlands and implement conservation measures.

About the Species

- The Manipuri Pony, also known as *Meitei Sagol*, is in danger of disappearing. Its population has sharply declined over the years, from 1,898 in 2003 to just 1,089 in 2019.
- Recognizing the urgent need for conservation, the Manipur government declared the **Manipuri Pony as an Endangered Breed in 2013**.
- It is one of five recognised equine breeds of India.
- Endemic to northeastern India (especially Manipur), the species is considered the **world's original polo pony**, with the **modern game of polo** said to have been created by the British from the traditional game of **Sagol Kangjei** played in Manipur.
- Despite being small (11 to 13 Hands), the Manipuri Pony is known for its exceptional qualities such as stamina, agility, intelligence, speed, and adaptability to tough conditions.
- The Manipuri Pony holds great cultural importance in Manipur. It is not only integral to traditional events like *Lai haraoba* but also plays a key role in sports like **polo**, which originated from the traditional **Manipuri sport of Sagol Kangjei**.
- Historically, Manipuri Ponies were used as mounts by the cavalry of the Manipur Kingdom, making them a symbol of power and prowess. They were even feared in upper Burma during the 17th century.



21. US TO RECLASSIFY MARIJUANA AS LESS RISKY DRUG

CONTEXT: The US government has proposed reclassifying *marijuana*, marking a significant shift.

Regulation of Marijuana in the US

- Since 1970, marijuana has been classified as a **Schedule I drug** under the Controlled Substances Act (CSA), alongside **heroin, ecstasy, and LSD**.
- This classification signifies that it's deemed to have no accepted medical use and a high potential for abuse.
- Under the new proposal, **marijuana would be downgraded to a Schedule III drug**. This places it alongside substances like ketamine and certain painkillers containing codeine, which are considered to have a moderate to low likelihood of dependence.

Fact Box: Marijuana in India

- In India, marijuana, also known as **cannabis or ganja**, has a long history.
- It has been cultivated, consumed, and used for various purposes for centuries.
- Cannabis contains over 120 components, with **cannabidiol (CBD) and tetrahydrocannabinol (THC)** being the most well-known. THC is psychoactive, while CBD is not.
- In 1985, the **Narcotic Drugs and Psychotropic Substances Act (NDPS Act)** prohibited the use of the resin, flowering, and fruit tops of the plant. However, different states have their own laws relating to consumption, possession, sale or purchase of weed or marijuana.
- In general, in India, possession of these drugs is considered a criminal act and can get you in serious legal trouble.

22. ORCAS (KILLER WHALE)

CONTEXT: Recent incidents involving orcas, also known as killer whales, targeting boats in the Strait of Gibraltar have sparked concern. These interactions, which have led to damaged boats and risky situations for sailors, highlight a growing issue that requires attention.

Possible Explanations:

- Scientists are puzzled by the behavior, considering orcas are not typically aggressive towards humans.
- Theories suggest the behavior could be playful or a reaction to traumatic experiences, such as getting tangled

in fishing lines.

- Some scientists believe targeting boats could be a form of play or a fad among young orcas, similar to toddlers mimicking behavior.
- Traumatic experiences, like getting tangled in fishing lines, may have triggered aggressive behavior in certain orcas, influencing others.

Fact Box: About orcas (killer whales)

- Orcas, also known as killer whales, are **remarkable marine mammals** that capture our imagination.
- Orcas are marine mammals belonging to the **dolphin family**, even though they're often called whales.
- They're the **largest members of the dolphin family** and are classified under toothed whales.
- Orcas are found in all oceans worldwide, making them one of the most widespread whales.
- Known for their intelligence, orcas are highly skilled hunters and can coordinate tactics during hunts.
- They're **social animals**, often living in groups called pods.
- They're incredibly fast swimmers, reaching speeds of up to 54 kilometers per hour.

23. WORLD HYDROGEN SUMMIT 2024

CONTEXT: At the World Hydrogen Summit 2024 in Rotterdam, Netherlands, India highlighted its strategic vision and capabilities in the domain of renewable energy and green hydrogen production.

What is green hydrogen energy?

- Hydrogen, the **simplest and most abundant element** in the universe, holds immense potential as a clean energy source.
- Hydrogen is a clean alternative to methane, also known as natural gas. It's the most abundant chemical element, estimated to contribute **75% of the mass of the universe**.
- When burned, hydrogen produces **energy in the form of heat**, with water as its **only by-product**. This process generates **no carbon dioxide emissions**, offering a promising solution to reduce carbon emissions and combat global warming.
- Green Hydrogen:** Green hydrogen is produced via a method called **electrolysis**, a highly energy-intensive process that employs electricity to **separate water molecules** into their component parts (**hydrogen and oxygen molecules**).

Initiatives:

- **Focus on non-fossil fuel:** 43 per cent of India’s current installed electricity capacity is from non-fossil-fuel sources, with projections indicating a rise to 50 per cent by 2030.
- **National Green Hydrogen Mission:** It is a flagship initiative to foster the development and adoption of green hydrogen technologies in India. With a target of establishing 5 million tonnes of annual green hydrogen production capacity by 2030, the mission represents a significant step towards realising India’s ambitions in the hydrogen economy.
- **Strategic Interventions for Green Hydrogen Transition (SIGHT) Programme.**
- **FDI:** The renewable energy sector allows up to 100 per cent FDI under the automatic route.

PYQ

Q. With reference to green hydrogen, consider the following statements: (2023)

1. It can be used directly as a fuel for internal combustion.
2. It can be blended with natural gas and used as fuel for heat or power generation.
3. It can be used in the hydrogen fuel cell to run vehicles.

How many of the above statements are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

Solution: (c)

24. CLEAR-AIR TURBULENCE

CONTEXT: A recent incident involving severe turbulence on a Singapore Airlines flight from London to Singapore has highlighted the dangers posed by clear-air turbulence (CAT) in air travel. As per a recent research, CAT is expected to intensify due to climate change.

Understanding Clear-Air Turbulence:

- Turbulence on flights is caused by **storms, mountains and strong wind currents** called **jet streams**.
- Clear-air turbulence occurs unexpectedly and violently buffets planes even in cloudless skies. Unlike turbulence caused by storms or mountains, CAT is not easily detectable, making it particularly hazardous for aircraft.
- **Regions over western ocean basins**, particularly in winter, are most susceptible to CAT due to **large zonal temperature** contrasts between the **ocean and land**. These temperature gradients create **vertical wind shear**, further exacerbating turbulence.

Role of Climate Change:

- Over the past four decades, CAT incidents have become more frequent, mirroring the trend of climate change.
- **Rising carbon dioxide emissions** lead to **warmer air**, which increases **wind shear** within **jet streams**, thereby strengthening CAT globally.

Fact Box: What’s a Jet Stream?

- A jet stream is like a **fast-moving river of air** high up in the atmosphere that goes from west to east all around the world.
- It usually happens around 30,000 feet above the ground, right where the **troposphere** (where weather happens) meets the **stratosphere**.

Direction and Movement:

- ▶ Inside these jet streams, the wind blows from west to east, but sometimes it can sway north or south.
- ▶ This happens because jet streams follow the borders between hot and cold air masses.
- ▶ **Strength in Winter:** Jet streams are strongest during winter in both the northern and southern hemispheres. This is because the contrast between hot and cold air is most significant during winter.
- ▶ **Belts and Branches:** There are three main belts or branches of the jet stream in each hemisphere. These belts are spread out from just above and below the equator to near the poles.

PYQ

Q. Consider the following statements: (2020)

1. Jet streams occur in the Northern Hemisphere **only**.
2. Only some cyclones develop an eye.
3. The temperature inside the eye of a cyclone is nearly **10 C lesser** than that of the surroundings.

Which of the statements given above is/are correct:

- (a) 1 only
- (b) 2 and 3 only
- (c) 2 only
- (d) 1 and 3 only

Solution: (c)

25. DEGRADING RANGELANDS

CONTEXT: About half of the world’s rangelands are degraded and need policy interventions, and communities depending on them need focused support, according to a new report of the United Nations Convention on Combating Desertification (UNCCD).

What are Rangelands?

- Rangelands are **natural or semi-natural areas** where

animals like livestock graze.

- They contain vegetation like **grass, shrubs, and trees**, influenced by climate factors like **rainfall and temperature**.
 - Rangelands cover over half of the Earth's land and are important for food, water, and preventing **desertification**.
- Importance of Rangelands:**
- ▶ They act as **carbon sinks, store freshwater, and support millions of people for food and livelihoods**.
 - ▶ They produce **16% of global food** and **70% of feed for animals**, especially in Africa and South America.
 - ▶ In India, rangelands span from the **Thar Desert to Himalayan meadows**.
 - ▶ Rangelands are vital ecosystems for grazing animals, and pastoralists, who depend on these lands, contribute significantly to India's livestock and dairy industries.
- Impact of climate change:**
- ▶ Nearly 50% of the world's rangelands can be considered "degraded" and are facing a "silent demise".
 - ▶ **Primary drivers of degradation:** Climate change, unsustainable land and livestock management practices, biodiversity loss, and the conversion of rangelands to farmlands. Uncertainty over land rights among pastoralist communities also leads to their degradation.

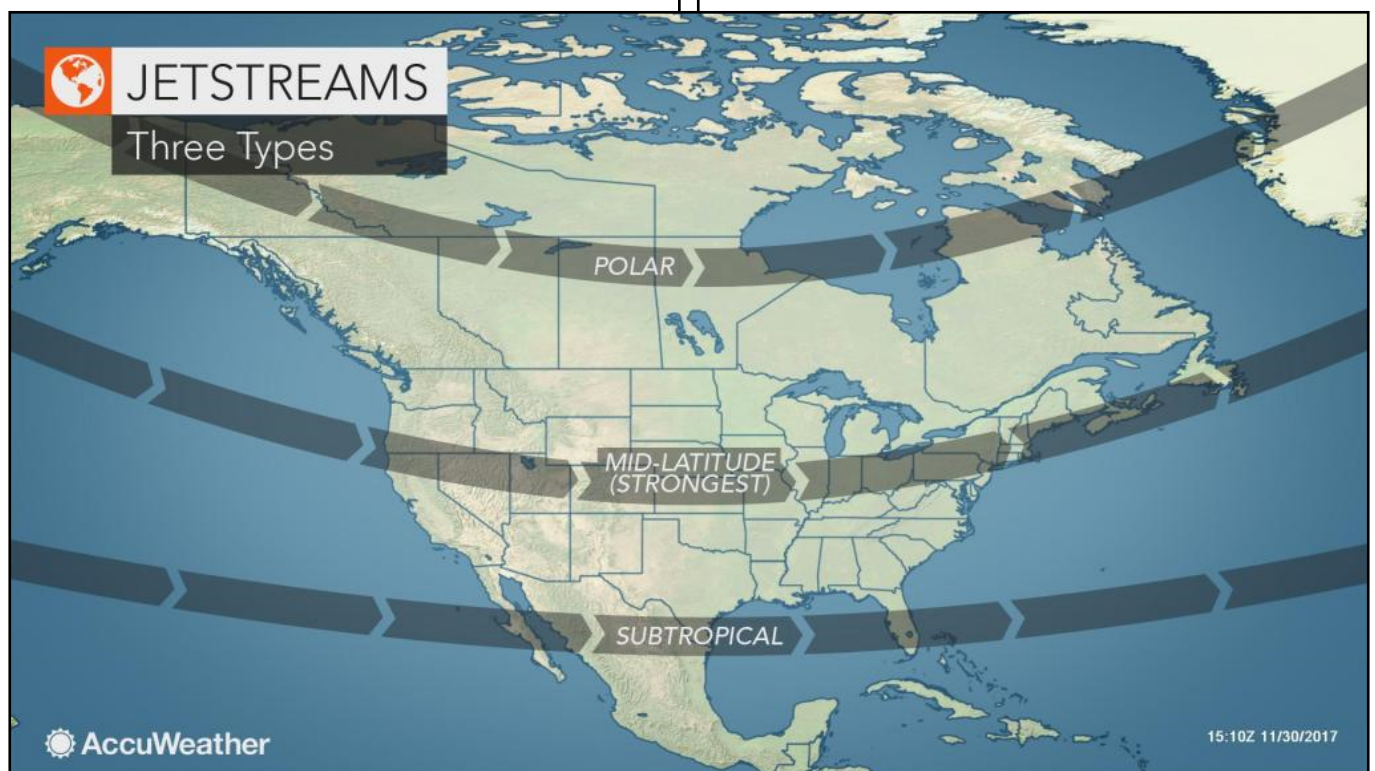
Fact Box: About Pastoralists

- Pastoralists are communities involved in livestock production for livelihoods.
- They raise animals like **sheep, goats, cattle, camels, etc.**, and depend on quality pasture (rangelands) for their livelihoods.
- Globally, there are around **500 million pastoralists**, and in India, they're estimated at **13 million** (across 46 groups including **Gujjars, Bakarwals, Rebaris, Raikas, Kurubas, and Maldharis**)
- **Economic Contributions of Pastoralists in India:**
 - ▶ India has 20% of the world's livestock population, with 77% of them reared by pastoralists.
 - ▶ Pastoralists contribute significantly to milk, meat, and animal husbandry sectors.
 - ▶ India is the **largest producer of milk, buffalo meat, and exporter of sheep and goat meat**, with pastoralists playing a big role in these industries.

26. PHTHEIROSPERMUM LUSHAIORUM

CONTEXT: A rare hemi-parasitic terrestrial plant has been found in Phawngpui National Park of Mizoram.

Key-highlights



- Named *Phtheiospermum lushaiorum*, this new species was published in the esteemed plant taxonomy journal, *Phytotaxa*.
- *Phtheiospermum lushaiorum* is a **hemi-parasitic plant**, meaning it lacks a fully developed root system and obtains water and minerals from another plant.
- However, it still possesses **chlorophyll** and can produce its own food through **photosynthesis**.
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Fact Box: About Lushai Tribe

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- They are of Mongoloid origin.
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CONTEXT: Researchers from the Zoological Survey of India rediscovered the Sri Lankan golden-backed frog (*Hylarana gracilis*) in the Koundinya Wildlife Sanctuary, Chittoor district. This marks its reappearance after two centuries, adding to India's freshwater frog species count, now totalling 20.

About Sri Lankan Golden-Backed Frog

- Sri Lankan golden-backed frog (*Indosylvirana serendipi*), is a species of frog in the family **Ranidae**.
- These frogs are typically found in **tropical lowland evergreen forests**, along stream banks, and in marshy areas.
- They are native to Sri Lanka but have been newly re-recorded in the **Eastern Ghats**.
- **Significance:** The rediscovery highlights the historic land bridge between India and Sri Lanka. Amphibians like these frogs serve as ecological indicators, and the Eastern Ghats, where they were found, host 27 amphibian species, fewer than the Western Ghats.

Fact Box: Koundinya Wildlife Sanctuary

- Koundinya Wildlife Sanctuary is located in the state of Andhra Pradesh.
- The sanctuary is the **only place in the state** where **Asian elephants reside**. But these elephants are **not native** to the region.
- **Forest type:** Dry deciduous forests with thorny scrubs
- **Flora:** Albizia amara, sAcacia, Lagerstroemia, Ficus, bamboo, Santalum album.
- **Fauna:** sloth bear, panther, cheetal, chowsingha, sambar, porcupine, wild boar, jungle cat, jackal, jungle fowl, starred tortoise and slender loris.

28. IMPACT OF WINDFALL TAX ON NORTH SEA TRADE

CONTEXT: North Sea oil and gas producers are merging and shifting operations overseas due to Britain's windfall tax slashing profits.

Impact of Higher Tax

- **Decline in Domestic Production:** The strategy shift could speed up the decline of domestic production, increasing dependency on imports, vulnerability to higher consumer prices, and job losses.
- **Cost-Cutting and Revenue Boost:** Independent oil and gas producers are merging and looking abroad to cut costs and boost revenue.
- **Energy Profit Levy:** In 2022, the UK imposed a 25% Energy Profit Levy on the sector due to a surge in energy prices from Russia's invasion of Ukraine, swelling profits as consumers faced higher prices. Similar measures were taken in other European countries.
- **Production Decline:** North Sea production has decreased to around 1.2 million barrels of oil equivalent per day (boed) from a peak of over 4.5 million boed in 1999.
- **Investment Reduction:** A higher tax rate and removal of the investment allowance could reduce investment by 30 billion pounds (\$38 billion), accelerating the decline in output.

Fact Box:**About the North Sea**

- **Bordering Countries:** United Kingdom, Norway, Denmark, Germany, the Netherlands, Belgium, and France.
- The North Sea is a semi-enclosed, shallow continental shelf sea, about 100 meters deep, located between the **British Isles, Norway, and Europe**. It connects to the North Atlantic through a broad region between Scotland and Norway and the **Dover Strait**.
- **Baltic Sea Connection:** The Baltic Sea, nearly enclosed east of Denmark, connects to the North Sea via passages leading to the Kattegat. The Baltic includes the **Gulf of Bothnia and the Gulf of Finland** and is the largest area of brackish water in the ocean system.
- The North Sea is a busy area for shipping, fisheries, oil and gas exploration, sand extraction, and offshore wind energy.

Windfall Tax

- Windfall tax refers to a higher tax levied by the government on specific industries when they experience unexpected and above-average profits.

**29. GLOBAL CITIES INDEX**

CONTEXT: A recent report from Oxford Economics has evaluated cities worldwide based on various factors like economic output and quality of life. Surprisingly, no Indian city made it into the top 300, with Delhi ranking the highest at 350.

Key Findings

- The report ranks cities across 163 countries on parameters like **economics, human capital, quality of life, environment, and governance**.
- New York topped the list, followed by London and San Jose.
- New Delhi ranked 51st in human capital, surpassing cities like Geneva and Canberra. However, Sultanpur in Uttar Pradesh scored poorly in multiple categories, ranking last overall.
- **The index contains five categories:** Economics, Human Capital, Quality of Life, Environment, and Governance, which are aggregated to create an overall score for each city.
 - ▶ **Economics** is measured by GDP size and employment opportunities
 - ▶ **Quality of life** considers life expectancy and housing costs
 - ▶ **Human capital** assesses education and skills
 - ▶ **Environment** looks at air quality and emissions intensity
 - ▶ **Governance** measures political stability of a city and protection of residents' rights

Implications

- ▶ **Global Impact:** The 1,000 largest cities contribute significantly to global GDP and population.
- ▶ **Regional Disparities:** South Asian cities ranked lowest in most parameters, with North America leading in quality of life.
- ▶ **Future Challenges:** Migration, housing crises, and healthcare infrastructure could affect rankings. Climate change poses additional threats, impacting multiple categories due to rising temperatures and natural disasters.

30. FIXED-INCOME MUTUAL FUNDS

CONTEXT: In recent financial discussions, the nuances of fixed-income mutual funds have garnered attention, especially with the backdrop of potential interest rate changes.

About Fixed-income mutual funds:

- Fixed-income mutual funds can be broadly categorized as **open-ended or close-ended**.
 - ▶ **Open-ended funds** are bought and redeemed directly with the Asset Management Company (AMC)
 - ▶ **Close-ended funds** are listed on exchanges for trading.
- Another fundamental concept is **accrual**, where interest is added to the **Net Asset Value (NAV)** daily, with market price changes impacting NAV through mark-to-market valuation.

Categories:

- ▶ **Liquid Fund:** Designed for short-term needs, investing in instruments with maturity up to three months. Primarily earns from accruals, making it suitable for emergency cash-equivalent needs.
- ▶ **Money Market Fund:** Invests in instruments with maturity up to one year, with limited mark-to-market impact. Suitable for short-term investments.
- ▶ **Banking and PSU Fund:** Focuses on instruments issued by banks and PSUs, offering flexibility in portfolio maturity. Ideal for medium-term investment horizons.
- ▶ **Corporate Bond Fund:** Invests in highest credit rating instruments, typically with a portfolio maturity of 3-5 years. Suitable for medium-term investment objectives.
- ▶ **Dynamic Bond Fund:** Allows the fund manager to adjust portfolio maturity based on market conditions. Suited for medium to long-term investment goals.
- ▶ **Gilt Fund:** Invests in government bonds with long maturity, offering exposure to interest rate cycles. Suitable for long-term investment strategies.
- ▶ **Target Maturity Fund (TMF):** Provides a defined maturity date, offering high visibility on returns. Usually maintains high-grade credit quality.



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PURAM |
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1
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02
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TEST
TIMING

PAPER 1: 9:30 AM to 11:30 AM
PAPER 2: 01:00 PM to 03:00 PM

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DISCUSSION

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SECTION C

TERMS OF THE WEEK

S.No.	Term	About
1	Autoimmune disorder	 An autoimmune disorder occurs when the body's immune system attacks and destroys healthy body tissue by mistake.
2	Antimicrobial Resistance (AMR)	 AMR renders medicines ineffective against bacteria, viruses, fungi, and parasites. The misuse and overuse of antimicrobials drive AMR, exacerbating the risk of disease spread, illness, and deaths.
3	Agroforestry	 Agroforestry is the intentional integration of trees and shrubs into crop and animal farming systems to create environmental, economic, and social benefits.
4	Contingent Risk Buffer (CRB)	 CRB refers to the risk provisioning made from economic capital to cover monetary, fiscal stability, credit and operation risks.
5	Chromosomes	 Chromosomes are threadlike structures made of protein and a single molecule of DNA that serve to carry the genomic information from cell to cell. They reside in the nucleus of cells. Humans have 22 pairs of numbered chromosomes (autosomes) and one pair of sex chromosomes (XX or XY), for a total of 46.
6	Dumping	 Dumping is the intentional mass export of goods to other countries where those goods are sold below the importing country's market price.
7	Environmental Footprint	 The environmental footprint, also known as the ecological footprint, measures the impact of people or organisations on the environment, whether it is positive or negative.
8	Fissiparity	 It refers to a type of reproduction in which an organism reproduces by dividing or splitting into two or more separate parts, each of which develops into a new individual. This process contrasts with other modes of reproduction, such as sexual reproduction, in which offspring are produced from the fusion of gametes (sex cells) from two different individuals.
9	Food security	 Food security is achieved, when all people, at all times, have physical, social and economic access to sufficient, safe and nutritious food to meet their directly needs and food preferences for an active and healthy life.
10	Hysterectomy	 A hysterectomy is an operation to remove the uterus, or womb.
11	Hypertension	 Hypertension, also known as high or raised blood pressure, is a condition in which the blood vessels have persistently raised pressure.
12	Indian Ocean Dipole	 It is a climate pattern affecting the Indian Ocean. During a positive phase, warm waters are pushed to the Western part of the Indian Ocean, while cold deep waters are brought up to the surface in the Eastern Indian Ocean. This pattern is reversed during the negative phase of the IOD.
13	Input Tax Credit (ITC)	 ITC means the Goods and Services Tax (GST) paid by a taxable person on any purchase of goods and/or services that are used or will be used for business.
14	Lagoon	 A lagoon is a body of water separated from larger bodies of water by a natural barrier.
15	Private final consumption expenditure (PFCE)	 It is the expenditure incurred by the resident households and non-profit institutions serving households (NPISH) on final consumption of goods and services, whether made within or outside the economic territory.
16	Pathogen	 A pathogen is any organism that causes disease. Viruses, bacteria, fungi, and parasites are all examples of pathogens.

17	Protectionism	 Protectionism refers to government policies that restrict international trade to help domestic industries. Protectionist policies are usually implemented with the goal to improve economic activity within a domestic economy but can also be implemented for safety or quality concerns.
18	Rangeland	 Rangeland is any extensive area of land that is occupied by native herbaceous or shrubby vegetation which is grazed by domestic or wild herbivore
19	Sub-orbital flights	 Sub-orbital flights are space flights that go up into space for a short period of time but do not complete a full orbit around the Earth. Instead, they reach a high altitude above the Earth's surface, typically crossing the boundary of space, called the Karman line, which is around 100 kilometers above the Earth.
20	Seismic Hazard Zone	 A seismic hazard zone describes an area with a particular level of hazard due to earthquakes.
21	Windfall tax	 Windfall tax is levied on entities that earn disproportionate profits during unexpected market conditions.





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