

CURRENT AFFAIRS

WEEKLY

WEEK: 3

MAY
2024

MAINS ARTICLE

GS-I

- ❑ Great Replacement Theory
- ❑ Live-in Relationship in Indian Society

GS-II

- ❑ India inks Chabahar port's 10-year deal with Iran
- ❑ Smart Cities Mission
- ❑ Housing Crisis of India
- ❑ Dietary Guidelines for Indians (DGIs)

GS-III

- ❑ 2024 World Wildlife Crime Report
- ❑ Adoption of Green Steel
- ❑ India's Agricultural Exports

GS-IV

- ❑ AI Deadbots

TERMS OF THE WEEK

PRELIMS ARTICLE

GEOGRAPHY

- Rat-Hole Mining
- G5 Geomagnetic Storm
- Aurora Lights in India
- Fisheries dispute in the Palk Bay
- Cook Islands
- Batagay Megaslump

INTERNATIONAL RELATIONS

- U.N. Counter-Terrorism Trust Fund

POLITY & GOVERNANCE

- SC tightens Juvenile Justice Act
- DigiLocker Platform
- Inter-Services Organisations (Command, Control and Discipline) Act
- Government's Infrastructure Plans for Border Areas:
- India plans crackdown on Illegal Betting and Gambling Apps

ECONOMY

- GIS Mapping of National Highways
- China Surpasses US in Trade with India
- Overview of India's Export Performance

SCIENCE & TECHNOLOGY

- Xenotransplantation
- FLiRT
- Global report on NTDs 2024
- Gene Therapy for Hearing Restoration
- Caenorhabditis elegans (C. elegans)
- Neural Processing Unit (NPU)
- Hermes-900 Starliner drones
- China's third aircraft carrier Fujian
- Discovery of Super-Earth

ENVIRONMENT

- World's Largest Carbon Capture Plant
- Nerium Oleander (Nerium)
- Sperm Whale (Physeter macrocephalus)
- Armoured Sailfin Catfish

GS SCORE

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DISCLAIMER

The 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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SECTION

A

MAINS ARTICLES

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7. 2024 World Wildlife Crime Report
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10. AI Deadbots

1. GREAT REPLACEMENT THEORY

CONTEXT: The “Great Replacement Theory” has resurfaced in discussions after Vlaardingerbroek, in a speech at the Conservative Political Action Conference (CPAC) in Hungary, claimed that white Europeans are being replaced in their own countries, posing a threat to civilization.

What is the Great Replacement Theory?

- ◆ The “great replacement theory” is a conspiracy that suggests Jews and some Western elites are plotting to **replace white Americans and Europeans** with people of **non-European descent, particularly Asians and Africans**.
- ◆ The eugenics movement supported forced sterilization of marginalized groups, adding to the notion of racial superiority.
- ◆ Overall, these ideas have fuelled **white supremacist, xenophobic, and anti-immigration sentiments**, contributing to a **global movement** based on the fear of **demographic change and the loss of white dominance**.
- ◆ Mainstream scholars dismiss the theory as based on a misunderstanding of demographic statistics and rooted in racism. They emphasize the need to address low birth rates as a foundational issue.

Issue of low birth rates

- ◆ The theory overlooks the problem of low birth rates, which are causing population decline globally, particularly in **Europe and Asia**.
- ◆ Japan, facing a significant decline in births and marriages, serves as an example of this demographic challenge.
- ◆ Population collapse is identified as a **major threat to civilization**.

Fact Box: Population Collapse

- The Asian country recorded fresh record low number of babies born in 2023 after number of births fell 5.1 percent from a year earlier to 7,58,631.
- Not just the number of births, the number of marriages in Japan dipped 5.9 percent to 4,89,281 in 2023.
- This is the first time in 90 years that the number of marriages in a year dropped below 5,00,000.

2. LIVE-IN RELATIONSHIP IN INDIAN SOCIETY

CONTEXT: Live-in relationships, although not explicitly recognized by Indian laws, have

gained prominence in contemporary society. These relationships challenge traditional notions of marriage and cohabitation, raising important questions about morality, legality, and societal acceptance.

Societal Perspective on Live-in Relationships:

- ◆ In Indian society, the concept of live-in relationships has sparked debates and discussions regarding morality and social norms. While some view these relationships as progressive and reflective of individual freedom, others perceive them as immoral or culturally unacceptable.
- ◆ Despite legal recognition, live-in relationships continue to face **societal stigma and disapproval**, particularly in conservative communities. Social attitudes towards unmarried cohabitation lead to **discrimination and ostracization of couples in such relationships**.
- ◆ **Responsible factor for growth: Urbanization, globalization, and exposure to Western values** have contributed to greater acceptance of non-traditional relationship models, including live-in arrangements.

Implications of Live-in relationships on Society

- ◆ **Changing Social Norms:** Live-in relationships challenge traditional notions of marriage and family, leading to shifts in societal norms regarding relationships and cohabitation.
- ◆ **Acceptance and Stigma:** The social stigma may impact individuals’ social standing and relationships with family and friends.
- ◆ **Legal Ambiguity:** In the absence of specific laws governing live-in relationships, legal rights and responsibilities concerning property, inheritance, and child custody can be uncertain.
- ◆ **Impact on Children:** Children born or raised in live-in relationships may face societal judgment and legal complications, particularly regarding **inheritance and parental rights**. Moreover, the stability and long-term prospects of such family structures may affect **children’s well-being and social integration**.
- ◆ **Impact on Marriage:** The prevalence of live-in relationships may influence perceptions of marriage, leading some individuals to choose cohabitation over formal marriage or delay marriage altogether. This trend can have broader implications for family structures and social institutions.
- ◆ **Positive implications:** Personal Freedom and Autonomy, Compatibility Testing, Flexibility and Adaptability, Emotional Support and Companionship, Social Cohesion and Community Bonds.

Fact Box: Constitutional Provisions for Live-in Relationships

- In India, there are **no specific laws** about live-in relationships.
- The Supreme Court (*Badri Prasad vs. Dy. Director of Consolidation (1978)*) recognizes that people have the **right to live together**, which is part of their **right to life (Article 21)**. So, living together without marriage is not against the law anymore.
- If a man and a woman live together like a married couple for a long time and even have children, the courts will treat them as **if they were married**. This means that the same laws about marriage and relationships will apply to them.
- The Allahabad High Court also recognized live-in relationships in *Payal Sharma v/s Nari Niketan*. The judges said that it's okay for a man and a woman to live together even if they're not married. They pointed out that there's a difference between what the law says and what society thinks is right.

3. INDIA INKS CHABAHAR PORT'S 10-YEAR DEAL WITH IRAN

CONTEXT: India recently signed a significant 10-year agreement with Iran to develop and operate the Chabahar port, bolstering ties with this strategic Middle Eastern nation.

Background:

- ◆ India has been working on developing the Chabahar port in Iran as a vital route to transport goods to **Iran, Afghanistan, and Central Asian countries**.
- ◆ In 2016, **India, Iran, and Afghanistan** inked the **Trilateral Agreement**, solidifying **Chabahar's role** as an International Transport and Transit Corridor.
- ◆ However, progress on the port's development was slowed due to U.S. sanctions on Iran (2019).

Key Highlights of the Agreement:

- ◆ The contract was signed between **Indian Ports Global Limited (IPGL) and the Port & Maritime Organisation of Iran**.
- ◆ IPGL will invest approximately \$120 million, with an additional \$250 million in financing, bringing the total contract value to \$370 million. Since taking over operations in 2018, IPGL has handled significant container traffic and bulk cargo.
- ◆ The long-term contract is expected to significantly boost economic activities and enhance India's role in global trade and commerce.

Significance of Chabahar Port:



- ◆ **Easy access to market:** The port is an optimally located node for accessing **Afghanistan, Central Asia, the Caucasus and Eurasian markets**.
- ◆ **Easy access to INSTC:** Chabahar Port, located on **Iran's southwestern coast**, provides easy access to **India's west coast** and forms a crucial link in the **International North-South Transport Corridor (INSTC)**. It connects India to Russia and Central Asia via the INSTC, facilitating the movement of goods between these regions.
- ◆ **Reduced time and cost:** This collaboration between India and Iran aims to reduce transportation costs and time, promoting trade in the region.
- ◆ **Energy Security:** It offers India a strategic advantage in securing its energy needs. With Iran holding substantial reserves of oil and natural gas, Chabahar provides India with direct access to these resources, bypassing maritime chokepoints like the **Strait of Hormuz**.
- ◆ **Diversified routes:** Chabahar Port offers strategic advantages to India's oil and gas sector by diversifying import routes, accessing new markets in Central Asia, and enhancing energy security. By bypassing Pakistan's ports (Karachi and Gwadar), India will reduce its dependency on traditional routes (vulnerable to disruptions).
- ◆ **Expanding footprints:** By leveraging Chabahar Port, India can mitigate risks associated with traditional import routes, expand its energy footprint, and assert its presence in regional geopolitics.

PYQ

- Q. Mention the significance of straits and isthmus in international trade. (2022)**
- Q. What is the importance of developing Chabahar Port by India? (2017)**
 - (a) India's trade with African countries will enormously increase.
 - (b) India's relations with oil-producing Arab countries will be strengthened.
 - (c) India will not depend on Pakistan for access to Afghanistan and Central Asia.
 - (d) Pakistan will facilitate and protect the installation of a gas pipeline between Iraq and India.

Solution: (c)

4. SMART CITIES MISSION

CONTEXT: The Smart Cities Mission (SCM) was launched as a flagship programme to adapt to global urban development trends. However, its progress and effectiveness have come under scrutiny.

What is the concept of Smart Cities?

- ◆ Smart cities emerged as a concept after the **2009 financial crash**, aiming for urban centers integrated with advanced communication networks and infrastructure.
- ◆ However, there is no universal definition, with interpretations varying across regions.
- ◆ **Genesis of SCM:** The Smart Cities Mission (SCM) was initiated in June 2015, aiming to develop 100 cities over five years. It encompassed area-based development and pan-city solutions, with an allocation of Rs 2 lakh crore and emphasis on public-private partnerships (PPPs).

Need of smart cities (unprecedented urban expansion):

- ◆ Experts estimate that about two out of every three people in the world will live in cities by 2050
- ◆ India is home to three of world's 21 megacities (**Mumbai, Delhi, and Kolkata**), each with populations exceeding 10 million.
- ◆ Despite this urban growth, the country faces significant challenges hindering urban development and economic growth.
- ◆ Migration from rural to urban areas for economic opportunities is increasing, but issues like poor local governance, inadequate infrastructure and services, and outdated urban planning pose major obstacles.
- ◆ As a result, the number of slums has reached record levels.

What is the status of SCM?

- ◆ As of April 2024, the SCM has seen a **reduction in project outlay**, with completion rates lower than expected. Many ongoing projects are unlikely to meet the extended deadline of June 2024, and PPP funding remains minimal.
- ◆ **Exclusionary Approach:** The selection process of cities lacked consideration for diverse urban realities, leading to exclusionary outcomes. The governance structure, centered around **special purpose vehicles (SPVs)**, sidelined elected councils and faced objections for being top-down.
- ◆ **Implementation Hurdles:** The SCM's inadequate funding, compared to the estimated capital requirement for urban development, limited its impact. The SPV model conflicted with constitutional amendments and led to

displacement of vulnerable populations, exacerbating issues like urban flooding.

◆ Successes:

- ▶ **Awareness:** The SCM raised awareness about the concept of smart cities and the need for urban modernization in India.
- ▶ **Infrastructure Development:** Some cities witnessed infrastructure development and improvement in basic services like waste management and water supply.
- ▶ **Technological Integration:** The emphasis on ICT solutions promoted technological integration in urban governance and service delivery.

Way forward

- ◆ There is a need for a more inclusive approach to urban development that considers the diverse needs of urban populations and engages local communities in decision-making. Future urban development initiatives should focus on holistic planning, integrating social, economic, and environmental aspects for sustainable growth.
- ◆ Overall, while the SCM raised awareness about urban modernization, its implementation faced significant challenges and criticisms. Moving forward, there is a need for a more inclusive, holistic, and sustainable approach to urban development in India.

PYQ

Q. Economy (GS-III): What are 'Smart Cities'? Examine their relevance for urban development in India. Will it increase rural-urban differences? Give arguments for 'Smart Villages' in the light of PURA and RURBAN Mission. (2016)

Q. Society (GS-I): Discussion the various social problems which originated out of the speedy process of urbanization in India. (2013)

5. HOUSING CRISIS OF INDIA

CONTEXT: Amidst the diverse issues facing the nation, one recurrent issue is the housing crisis in India. With million homeless individuals, and concerns persisting even among those with homes regarding quality, congestion, and insufficient amenities and infrastructure, housing emerges as a pressing concern for the public.

Status of India's Housing Crisis

- ◆ India has about 1.7 million homeless people, as per the 2011 Census. Even those with homes face issues like **poor quality, overcrowding, and lack of amenities**.

- ◆ A **2012 government report** estimated a need for around 18.78 million more houses in India.
- ◆ A **2020 study by ICRIER** found that India's urban housing shortage increased by **54%** from 2012 to reach **29 million** in 2018.
- ◆ This shortage includes **homeless individuals, inadequate housing, obsolete homes, and crowded households.**
- ◆ **Reasons for the Crisis:**
 - ▶ Inadequate housing conditions, reduced land entitlements, rapid urbanization. Issues like high land costs, escalating construction material prices, and lack of affordable housing options contributed to the problem.
 - ▶ India's housing crisis in India reflects **systemic challenges in urban planning**, infrastructure development, and policy implementation.
- ◆ **Impact of Housing Shortage:**
 - ▶ **Urban congestion and the proliferation of slums** are direct consequences of the housing shortage.
 - ▶ **Slum dwellings** account for a significant portion of the urban population

Significance of the sector for Economy

- ◆ Housing is important for the Indian economy.
- ◆ The **real estate sector** is responsible for about 50% of the economic output in the country.
- ◆ The **Ministry of Statistics** notes that more than one-third of all gross fixed capital formation in 2021-22 could be attributed to housing and building construction.

Fact Box:

- **Affordable housing:** The government defines affordable housing as properties with an area no bigger than 60 square meters, priced at a maximum of ₹45 lakh.
- **Fundamental:** The Supreme Court has ruled that the right to housing is a fundamental part of the right to life under Article 21 of the Constitution.

Government Interventions

- The Housing for All schemes (2015-22): Under it, there are two wings- **Pradhan Mantri Awas Yojana (Gramin) and Pradhan Mantri Awas Yojana (Urban).**

	PMAY-U	PMAY-G
Launched in:	2015 to tackle urban homelessness.	2016
Target:	houses for 1.18 crore families by December 2024.	to construct 2.95 crore houses

Achievement:	As of March 2024, it has only achieved around 67% of its target, i.e, around 80 lakhs.	As of April 30, 2024, a total of 2.6 crore houses have been completed.
Verticals	<ul style="list-style-type: none"> ● Affordable Housing-in-Partnership (AHP) ● In-situ Slum Redevelopment (ISSR) ● Beneficiary-Led Construction (BLC) ● Credit-Linked Subsidy Scheme (CLSS) 	

PYQ

Q. What is the meaning of the term 'tax expenditure'? Taking the housing sector as an example, discuss how it influences the budgetary policies of the government. (2013)

6. DIETARY GUIDELINES FOR INDIANS (DGIS)

CONTEXT: The National Institute of Nutrition (NIN) under the apex health research body released revised "Dietary Guidelines for Indians (DGIs)" to meet the requirements of essential nutrients and prevent non-communicable diseases (NCD).

17 Dietary Guidelines for Indians (DGIs)

1. Eat a variety of foods to ensure a balanced diet
2. Pregnant women and new mothers should have access to extra food and healthcare
3. Ensure exclusive breastfeeding for the first six months; continue breastfeeding till two years and beyond
4. After six months of age, the infant should be fed homemade semi-solid complementary foods
5. Ensure adequate and appropriate diets for children and adolescents in health and sickness
6. Eat plenty of vegetables and legumes
7. Use oil/fats in moderation; choose a variety of oil seeds, nuts etc. to meet daily needs of fats and essential fatty acids
8. Obtain good equality proteins and essential amino acids; avoid protein supplements to build muscle mass

9. Adopt a health lifestyle to prevent abdominal obesity, overweight and overall obesity
10. Be physically active, exercise regularly
11. Restrict salt intake
12. Consume safe and clean foods
13. Ensure appropriate pre-cooking and cooking methods are used
14. Drink plenty of water
15. Minimise the consumption of ultra-processed foods and high fat, sugar, salt
16. Prioritise nutrient-rich foods in the diets of elderly people
17. Read information on food labels

Need of the guidelines

- ◆ Changes in dietary habits have led to increased prevalence of non-communicable diseases alongside persisting undernutrition issues.
- ◆ Unhealthy diets contribute to 56.4% of India's disease burden.
- ◆ 34% of children aged 5-9 have high triglycerides.
- ◆ Healthy diets and physical activity can reduce a significant portion of coronary heart disease, hypertension, and prevent up to 80% of type 2 diabetes.
- ◆ Adopting a healthy lifestyle can prevent premature deaths.

Significance of the guidelines

- ◆ The guidelines emphasize balanced diets, breastfeeding, and healthy lifestyle habits to address the prevalence of non-communicable diseases and undernutrition issues.
- ◆ Prioritizing nutrient-rich foods and minimizing consumption of ultra-processed foods are crucial for overall health.
- ◆ Special attention to pregnant women, infants, children, adolescents, and the elderly ensures their nutritional needs are met at different life stages.
- ◆ Promoting physical activity alongside dietary changes further contributes to overall health and disease prevention.
- ◆ Education on reading food labels empowers individuals to make informed dietary choices.

PYQ

Q. The increase in life expectancy in the country has led to newer health challenges in the community. What are those challenges and what steps need to be taken to meet them? [150 Words] [10 Marks] [2022]

7. 2024 WORLD WILDLIFE CRIME REPORT

CONTEXT: The rhino and the cedar were the animal and plant species most affected by global illegal wildlife trade during 2015-2021, the 2024 World Wildlife Crime Report released by the United Nations Office on Drugs and Crime.

Key-Takeaways:

The 2024 World Wildlife Crime Report highlights the significant impact of illegal wildlife trade on animal and plant species:

◆ Most Affected Species:

- ▶ **Animal:** Rhino horn market (29%), pangolin scales (28%), and elephant ivory (15%) are the most affected.
- ▶ **Plant:** Cedars and Sapindales (47%), rosewoods (35%), and agarwood and myrtales (13%) are the top affected.

◆ Diversity Among Seizures:

- ▶ **Corals (16%), crocodilians (9%), elephants (6%), and bivalve molluscs (6%)** are among the most seized animal species.
- ▶ **Coral pieces (16%), live specimens (15%), and medicines from animal products (10%)** are the most seized commodities.
- ◆ Despite efforts, wildlife trafficking persists globally, driven by adaptable traffickers.
- ◆ The report calls for strong international cooperation, investment in data capacity, and modernized criminal justice responses.
- ◆ Corruption and technology are identified as areas of concern, undermining regulation and enforcement.
- ◆ Prioritized and strategic interventions are needed to reduce wildlife trafficking, addressing organized crime as a whole.
- ◆ Overall, the report underscores the urgent need for comprehensive strategies to combat wildlife trafficking and protect biodiversity.

Why is India hub for wildlife crimes?

- ◆ **Megadiverse Nature and Dense Population:** With 8% of the world's wildlife, India serves as both a source and transit country for illegal wildlife and products due to its dense human population.
- ◆ **Porous international borders** with China, Myanmar, and other Southeast Asian countries facilitate illegal trade.
- ◆ **Demand for raw materials** (red sandalwood and ivory drives trafficking)
- ◆ **Infrastructure and Technology:**

- ▶ A growing aviation sector and expanding airport infrastructure provide avenues for smuggling.
- ▶ Social media platforms are exploited by traffickers for online trade.

Initiatives to Combat Wildlife Crimes in India:

- ◆ **Wildlife Crime Control Bureau (WCCB):** Constituted under the Director, Wildlife Preservation to combat wildlife-related crimes.
- ◆ **Wildlife (Protection) Act, 1972:** Prohibits hunting and illegal wildlife trade.
- ◆ **Conservation Projects:**
 - ▶ **Project Elephant** addresses human-elephant conflict and protects elephant habitats.
 - ▶ **Project Tiger** conserves endangered tigers and their habitats.
- ◆ **Operational Initiatives:**
 - ▶ **Operation "Save Kurma"** targets poaching, transportation, and illegal trade of turtles and tortoises.
 - ▶ **Operation Thunderbird** intensifies enforcement with INTERPOL.
 - ▶ **Operation Wildnet** tackles illegal trade on e-commerce platforms.
- ◆ India's participation in **CITES** regulates international trade in endangered species.
- ◆ **International Organizations:** World Wildlife Fund, Environmental Investigation Agency, TRAFFIC, and **International Fund For Animal Welfare** play roles in preventing and controlling wildlife crime.

PYQ

Q. With reference to Indian laws about wildlife protection, consider the following statements: (2022)

1. Wild animals are the sole property of the government.
2. When a wild animal is declared protected, such animal is entitled for equal protection whether it is found in protected areas or outside.
3. Apprehension of a protected wild animal becoming a danger to human life is sufficient ground for its capture or killing.

Which of the statements given above is/are correct?

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

Solution: (b)

Q. Consider the following statements in respect of Trade Related Analysis of Fauna and Flora in Commerce (TRAFFIC): (2017)

1. TRAFFIC is a bureau under United Nations Environment Programme (UNEP).
2. The mission of TRAFFIC is to ensure that trade in wild plants and animals is not a threat to the conservation of nature.

Which of the above statements is/are correct?

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

Solution: (b)

8. ADOPTION OF GREEN STEEL

CONTEXT: India is exploring the idea of requiring automobile companies, particularly those producing premium or ultra high-end models, to procure green steel. This steel is distinguished by its low-carbon emissions during production. Moreover, the proposal also includes plans to encourage the use of green steel in government projects.

What is Green Steel?

- ◆ Green steel is steel that is produced without using fossil fuels.
 - ▶ **Green Hydrogen:** One solution to achieve this is by using "green hydrogen," which emits only water when burned. Green hydrogen is produced through a process called electrolysis, using water and renewable electricity, making it free of CO₂ emissions.
 - ▶ **Electric arc furnaces:** Another method is using electric arc furnaces instead of traditional ones. While these furnaces are becoming more common, the steel they produce may not always be considered green if they are **not powered by renewable sources.**

What is the need of green steel?

- ◆ Iron and steel manufacturing is one of the most **energy- and carbon-intensive** industries globally.
- ◆ India's steel sector contributes approximately 12% of the country's carbon dioxide (CO₂) emissions. The emission intensity of the steel industry in India is 2.55 tonnes of CO₂ per tonne of **crude steel (tCO₂/tcs)**, higher than the global average of 1.85 tCO₂/tcs.
- ◆ Annually, the steel industry emits around 240 million tonnes of CO₂, and this is expected to double rapidly by 2030 due to the Indian government's infrastructure development goals.

Challenges

- Using green hydrogen for steel production is the **cleanest method available**. However, it's costly. Investing in this technology might make steelmakers less competitive because steel is a widely traded product.
- High cost of green steel implies that there is insufficient demand for it in the absence of policy action.

Fact Box: India's Steel Sector

- India is the **world's second-largest producer of crude steel** as of January to December 2021, with a production of 118.20 million tonnes (MT), marking a growth rate of 17.9% over the previous year.
- The steel sector contributes **2% to the country's GDP** in the fiscal year 2021-2022.
- Leading steel-producing states in India** are Odisha, followed by Jharkhand and Chhattisgarh. Karnataka, Maharashtra, Gujarat, and West Bengal also play significant roles in steel production.
- Government initiatives aimed at fostering the growth of the steel sector include:**
 - Inclusion of specialty steel in PLI Scheme
 - Green Steel Making
 - Steel Scrap Recycling Policy
 - National Steel Policy 2017
 - Steel and Steel Products (Quality Control) Order
 - Steel Scrap Recycling Policy 2019
 - Perform, Achieve and Trade (PAT) scheme
 - National Green Hydrogen Mission (under which Ministry of Steel has been allocated 30% of the pilot project budget)
 - India-Australia Green Steel Partnership

PYQ

Q. Consider the following heavy industries: (2013)

- Fertilizer plants
- Oil refineries
- Steel Plants

Green hydrogen is expected to play a significant role in decarbonizing how many of the above industries?

- Only one
- Only two
- All three
- None

Solution: (c)

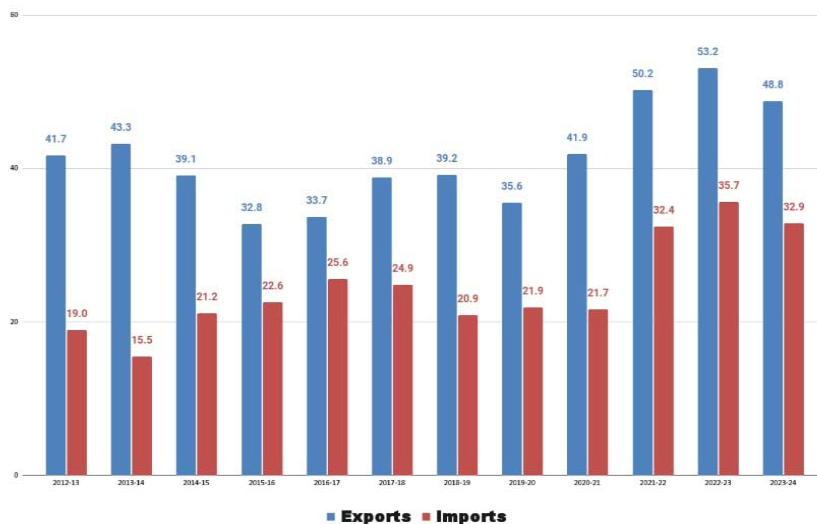
9. INDIA'S AGRICULTURAL EXPORTS

CONTEXT: India's agricultural exports experienced an **8.2% decline**, primarily due to restrictions on various commodities such as cereals, sugar, and onions. The total value of agricultural exports stood at **USD 48.82 billion**, a decrease from the record high of **USD 53.15 billion** in the previous fiscal year.

Factors Impacting Exports

- The decline in exports was led by sugar and non-basmati rice. Restrictions on sugar exports resulted in a significant drop in its export value, while a ban on non-basmati rice exports contributed to the overall decline in this segment.

India's Agricultural Trade (in \$ billion)



- ◆ Wheat and onion exports were also affected by export restrictions imposed due to domestic shortages and rising prices.
- ◆ **Discrepancy** between government's objectives (promoting crop diversification) and its policies on import tariffs. While import duties on most pulses have been eliminated, promoting their cultivation, the low tariffs on certain imported items contradict the goal of reducing dependence on imports for items like pulses and edible oils.

Export Drivers and Import Trends

- ◆ **Exports:** Despite the overall decline, certain agricultural export items such as basmati rice and spices experienced growth. However, exports of oil **meals, and raw cotton** remained below their previous records.
- ◆ **Imports:** On the import side, the decrease in overall agricultural imports in 2023-24 was mainly due to a reduction in edible oil imports. Lower global prices led to a decrease in the import bill for vegetable oils. However, imports of pulses nearly doubled, reaching the highest levels since 2015-16.

Policy Implications

- ◆ There needs urgent recognition of importance of policy stability and predictability for farmers and **agri-traders**.
- ◆ **Policies favoring consumers over producers**, such as **sudden export bans or restrictions**, can have significant negative impacts on agricultural producers.
- ◆ A more predictable and rules-based policy approach, such as **temporary tariffs** instead of outright bans, is recommended.
- ◆ There is a need for a more rational export-import policy that balances the interests of producers and consumers, as well as short- and long-term goals for the agricultural sector. This may involve revisiting export and import restrictions and tariffs to ensure a more sustainable and equitable agricultural trade environment.

Fact Box: Agriculture in India

- Agriculture is the leading sector in terms of employment and contributing over **16 percent to the country's GDP**.
- Agriculture came under the **WTO regime in 1995** when **Agreement on Agriculture** was negotiated.
- **Factors impacting export and import of agricultural products:** International and domestic demand & supply situation, international & domestic prices, quality concerns and food security concerns no targets for exports or imports are fixed.

Schemes promoting Agricultural Export

- **Agriculture Export Policy:** To promote the agricultural exports

- **Transport and Marketing Assistance for Specified Agriculture Products** – It is a Central Sector Scheme for providing assistance for the international component of freight, to mitigate the freight disadvantage (for the export of agriculture products), and marketing (agricultural products).
- **Other Schemes:**
 - ▶ Trade Infrastructure for Export Scheme (TIES)
 - ▶ Market Access Initiatives (MAI) Scheme
 - ▶ Merchandise Exports from India Scheme (MEIS)
 - ▶ Assistance to the exporters of agricultural products is also available under the
- **Organizations providing Export Promotion Schemes:**
 - ▶ Agricultural & Processed Food Products Export Development Authority (APEDA)
 - ▶ Marine Products Export Development Authority (MPEDA)
 - ▶ Tobacco Board, Tea Board, Coffee Board, Rubber Board and Spices Board

10. AI DEADBOTS

CONTEXT: The development of Artificial Intelligence (AI) chatbots, known as 'deadbots', designed to mimic deceased loved ones, has raised ethical concerns. While these chatbots may offer comfort to individuals grieving the loss of a loved one, researchers warn of potential psychological distress if not developed with safety in mind.

Understanding Deadbots:

- ◆ Deadbots, also known as **griefbots**, are **AI-enabled digital representations of departed loved ones**.
- ◆ They simulate the language patterns and personality traits of the deceased using their digital footprint, including emails, social media posts, and voice recordings.
- ◆ The concept of conversing with a digital version of a lost loved one may provide solace to individuals coping with grief and loss.

Potential Risks and Ethical Concerns:

- ◆ There are potential risks associated with deadbots, including **psychological distress**.
- ◆ While the intention behind deadbots may be to provide comfort, their use could lead to **emotional dependency and hinder the grieving process**.
- ◆ There are concerns about the ethical implications of using AI to simulate conversations with the deceased, raising questions about the **authenticity of these interactions** and the **impact on individuals' mental health**.

Ethical Analysis:

- ◆ The development and use of deadbots raise ethical questions related to **privacy, consent, and the manipulation of emotions.**
- ◆ There is a **need for clear guidelines and regulations** to govern the development and use of deadbots, ensuring that they prioritize the well-being of users and respect the dignity of the deceased.
- ◆ Ethical considerations must also address the potential for exploitation, as deadbots could be used for **malicious**

purposes or to **profit from individuals' grief.**

Fact Box: Case Study: Microsoft's Deadbot Patent:

- In 2017, Microsoft secured a patent for a deadbot that could 'resurrect' the dead, allowing individuals to engage in text-based conversations with deceased loved ones.
- Services like Project December utilize patent-pending technology to simulate conversations with anyone, including the deceased, and have gained popularity in the United States and China.



SECTION

B

QUICK BYTES

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2. G5 Geomagnetic Storm
3. Aurora Lights in India
4. Fisheries dispute in the Palk Bay
5. Cook Islands
6. Batagay Megaslump
7. U.N. Counter-Terrorism Trust Fund
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1. RAT-HOLE MINING

CONTEXT: Despite an order, none of the 26,000 abandoned rat-hole coal mines in Meghalaya's East Jaintia Hills district have been closed, posing risks to human and animal lives.

About Rat-Hole Mining

- ◆ Rat-hole mining, banned by the **National Green Tribunal** a decade ago, involves **narrow tunnels** where workers extract coal.
- ◆ These tunnels, called "**rat-holes**," are typically only big enough for one person to enter.
- ◆ **Banning:**
 - ▶ The government's control over land in Meghalaya, a **Sixth Schedule State** exempt from the **Coal Mines Nationalisation Act of 1973**, is limited.
 - ▶ Landowners also own the minerals beneath, fueling a **coal mining boom** since Meghalaya became a state in 1972.
 - ▶ However, the **rugged terrain and high costs** deterred mine owners from using advanced drilling machines.
 - ▶ Instead, they relied on laborers from **Assam, Nepal, and Bangladesh** for rat-hole mining, a hazardous practice offering higher wages than other jobs.
 - ▶ Rat-hole mining risks include **poor ventilation leading to asphyxiation, mine collapse due to lack of support, and flooding**.
 - ▶ The unregulated mining also caused **environmental damage, including land degradation, deforestation, and contamination of water sources with sulphates, iron, and toxic heavy metals**.
 - ▶ Rivers like **Lukha and Myntdu** became too acidic to support aquatic life. These issues prompted the National Green Tribunal (NGT) to **ban rat-hole mining in Meghalaya in 2014**.

Fact Box: India's Mining Sector

- India ranks in the top five globally as a significant producer of **bauxite, iron, and zinc ore**.
- However, despite this abundance, the mining sector's contribution to the GDP hovers between 2.2% to 2.5%.
- Important minerals showing positive growth during December 2023 over December 2022 include Magnesite (83.7%), Lead Conc. (16.5%), Lignite (14.6%), Copper Conc. (13.7%), Limestone (12.5%), Coal (10.8%), Zinc Conc. (7.8%), Bauxite (6.6%), Natural gas (U) (6.6%), Manganese Ore (4.0%) and Iron Ore (1.3%).
- **Major Mining States:** Andhra Pradesh, Jharkhand, Odisha, Rajasthan, Karnataka, Madhya Pradesh, Maharashtra

Recent Reforms:

- ▶ Enactment of Mines and Minerals (Development and Regulation) Amendment Act, 2021
- ▶ **Single Window for E-auction of coal**
- ▶ Identification of 22 Critical Mineral Blocks

PYQ

Q. Consider the following statements: (2018)

1. In India, State Governments do not have the power to auction non-coal mines.
 2. Andhra Pradesh and Jharkhand do not have gold mines.
 3. Rajasthan has iron ore mines.
- Which of the statements given above is/are correct?
- (a) 1 and 2
 - (b) 2 only
 - (c) 1 and 3
 - (d) 3 only

Solution: (d)

2. G5 GEOMAGNETIC STORM

CONTEXT: The most significant G5 geomagnetic storm since 2003, recently hit the Earth and disrupted GPS, satellite navigation, and other technologies.

About Geomagnetic Storms

- ◆ Geomagnetic storms, like the recent G5 storm, are disturbances in the **Earth's magnetosphere** caused by solar wind activity.
- ◆ These storms result from **coronal mass ejections (CMEs)** from the sun, which carry their own magnetic fields and can disrupt communications, power grids, and satellite operations on Earth and in near-Earth orbit.
- ◆ On a scale from **G1 to G5**, G5 is the strongest level of geomagnetic storm (as per **NOAA**).
 - ▶ G1 - Minor
 - ▶ G2 - Moderate
 - ▶ G3 - Strong
 - ▶ G4 - Severe
 - ▶ G5 - Extreme
- ◆ While a G4 storm can cause widespread power issues, a G5 storm could lead to **complete blackouts and power grid collapses**.
- ◆ These storms can cause **auroras in the sky** and disrupt technologies like **GPS and satellite navigation**.

3. AURORA LIGHTS IN INDIA

CONTEXT: Aurora lights in red hues were recently observed from Ladakh's clear skies. Astronomers from the Indian Institute of Astrophysics, Bengaluru (IIA) captured these auroras using all-sky cameras located around the Indian Astronomical Observatory (IAO) in Hanle, Ladakh.

Aurora Lights and Their Origin:

- ◆ Aurora lights are typically seen in high-latitude regions near the North and South Poles.
 - ▶ When observed near the North Pole, they are called **Aurora Borealis**, and near the South Pole, **Aurora Australis**.
- ◆ These colorful lights result from the interaction between **charged solar winds** and the **Earth's magnetosphere**.
- ◆ Solar winds, consisting mainly of **protons and electrons**, interact with the Earth's magnetic field, causing collisions with atoms and molecules in the **upper atmosphere**.
- ◆ These collisions produce light, similar to how electrons in a neon light create different colors when colliding with gases.

Why Auroras were visible in Ladakh?

- ◆ The auroras visible from Ladakh were attributed to increased solar flare activity in space, particularly due to **Coronal Mass Ejections (CMEs)**.
- ◆ CMEs are large ejections of magnetic particles and plasma from the Sun's corona.
- ◆ Originating from an active region on the Sun, **AR13664**, these CMEs reached the Earth's atmosphere, following intense solar flares.
- ◆ These storms caused auroras in red, violet, and blue colors, visible even from lower-latitude regions like Ladakh, the US, and the UK.

Impact of Solar Storms:

- ◆ Intense solar storms, like the recent CMEs, can disrupt satellite operations in **Low Earth Orbit (LEO)**, which includes **navigation, military, and communication satellites**.
- ◆ The energetic particle environment created by these storms can induce heating in the upper atmosphere, posing **radiation hazards** and **increasing friction on satellites**.
- ◆ Excessive friction can lead to **satellite malfunction** or even **ignition and burning in extreme cases, jeopardizing their operations**.

PYQ

Q. If a major solar storm (solar flare) reaches the Earth, which of the following are the possible effects on the Earth? (2022)

1. GPS and navigation systems could fail.
2. Tsunamis could occur at equatorial regions.
3. Power grids could be damaged.
4. Intense auroras could occur over much of the Earth.
5. Forest fires could take place over much of the planet.
6. Orbits of the satellites could be disturbed
7. Shortwave radio communication of the aircraft flying over polar regions could be interrupted.

Select the correct answer using the code given below:

- (a) 1, 2, 4 and 5 only
- (b) 2, 3, 5, 6 and 7 only
- (c) 1, 3, 4, 6 and 7 only
- (d) 1, 2, 3, 4, 5, 6 and 7 only

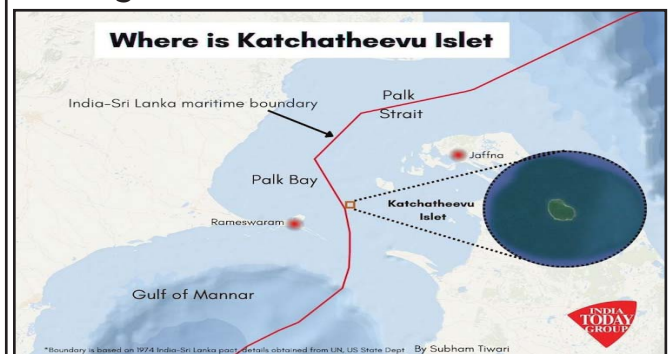
Solution: (c)

4. FISHERIES DISPUTE IN THE PALK BAY

CONTEXT: Talks between fishing communities of Tamil Nadu and the Northern Province in Sri Lanka are being considered to address the fisheries dispute in the Palk Bay.

Root Cause of the Conflict:

1. Disagreements over Kachchatheevu:



- ◆ A key issue is the disagreement over **Kachchatheevu**, an islet in the **Palk Strait** (north of Sri Lanka's Jaffna peninsula).
- ◆ **Ownership history:** Initially owned by the **Raja of Ramnad**, it later became part of the **Madras Presidency** during **British rule**.
- ◆ **Transfer to Sri Lanka:** In 1974, India ceded Kachchatheevu to Sri Lanka under a bilateral agreement

◆ The **International Maritime Boundary Line (IMBL)** was born out of a bilateral agreement signed back in 1974 and 1976 under the **United Nations Convention on Law of the Sea (UNCLOS)**.

2. Poaching by Indian Fishers through Bottom Trawling:

- ◆ The main cause of conflict is bottom trawling, a fishing method banned in Sri Lanka.
- ◆ Bottom trawling involves **scouring sea beds**, causing **damage to the marine ecosystem**.
- ◆ Indian fishers cross into Sri Lankan waters due to depleted catch on the Indian side.

5. COOK ISLANDS

CONTEXT: The Cook Islands is leading an effort to mine minerals from the ocean floor, particularly those used in electric car batteries.

About Cook Islands:

- ◆ The Cook Islands, consisting of 15 islands, became self-governing in 1965 after being a colony of New Zealand.
- ◆ Despite not being fully independent, the country began attracting international research vessels to explore its territorial waters, which span about **756,000 square miles**, similar in size to Mexico.

6. BATAGAY MEGASLUMP

CONTEXT: The Batagay megaslump – a **3,250-foot-wide (990 meters)** is “actively growing” by a massive amount every year, as per recent findings.

Characteristics of the Megaslump:

- ◆ **Batagay megaslump**, the world’s biggest permafrost crater, is located in the **Russian Far East**.
- ◆ It is a **retrogressive thaw slump**. Retrogressive thaw slumps belong to a class of terrain types called **thermokarst** that occur in areas underlain by permafrost.
- ◆ It was first observed on satellite images in 1991 after a section of hillside collapsed in the **Yana Uplands of northern Yakutia, Russia**.
- ◆ The collapse exposed layers of permafrost within the remaining hillside, which contains some of the oldest permafrost in Siberia and the world, dating back up to 650,000 years.
- ◆ From 1991 to 2018, the area increased by almost three times.

Fact Box: About Permafrost

- Permafrost refers to any ground that remains completely frozen at or below 32°F (0°C) for at least two consecutive years.
- It is most commonly found in regions with high mountains and in **Earth’s higher latitudes**, particularly near the **North and South Poles**.
- **Composition of Permafrost:** Permafrost consists of a mixture of soil, rocks, and sand that are bound together by ice.
- The soil and ice in permafrost remain frozen throughout the year, regardless of seasonal changes in temperature.

7. U.N. COUNTER-TERRORISM TRUST FUND

CONTEXT: India has contributed \$500,000 to the U.N. Counter-Terrorism Trust Fund, demonstrating its steadfast commitment to supporting global efforts in combating terrorism.

About United Nations Office of Counter-Terrorism (UNOCT):

- ◆ UNOCT was established in 2017 to address the growing threat of terrorism on a global scale.
- ◆ **Functions of the Office of Counter-Terrorism:**
 - ▶ UNOCT provides leadership on counter-terrorism mandates entrusted to the Secretary-General by the General Assembly.
 - ▶ It enhances coordination and coherence among the 38 Counter-Terrorism Implementation Task Force entities to ensure balanced implementation of the UN Global Counter-Terrorism Strategy’s four pillars.
 - ▶ The office strengthens the delivery of United Nations counter-terrorism capacity-building assistance to Member States.
 - ▶ UNOCT improves visibility, advocacy, and resource mobilization for United Nations counter-terrorism efforts.
 - ▶ It ensures due priority is given to counterterrorism across the United Nations system, with a focus on preventing violent extremism rooted in the Strategy.

8. SC TIGHTENS JUVENILE JUSTICE ACT

CONTEXT: The Supreme Court has taken steps to strengthen the **Juvenile Justice Act (JJA), 2015**, by addressing significant gaps in its implementation. These measures aim to streamline procedures

for handling legal violations by minors, managed by the Juvenile Justice Board (JJB), and ensure proper adjudication of cases involving minors.

Key Changes and Implications:

- ◆ **Definite Timelines for Appeals:** The Court has mandated that appeals against JJB decisions must be filed within 30 days, addressing the absence of a defined deadline for such appeals.
- ◆ **Clarity in Appellate Process:** The Court clarified the appellate process, especially regarding the interchangeability of the "Children's Court" and "Court of Sessions" mentioned in the Act.
- ◆ **Inclusion of Critical Details in Judicial Orders:** The Court emphasized the need for judicial orders to include essential information, such as the names of decision-makers and the attendance of involved parties and their legal representatives.

Fact Box: About Juvenile Justice Act (JJA), 2015

- The Juvenile Justice (Care and Protection of Children) Act, 2015 repealed the JJ Act, 2000.
- JJA seeks to achieve the objectives of the **United Nations Convention on the Rights of Children** (ratified by India in 1992).
- The JJ Act, 2015 aims to safeguard the rights of children in need of care and protection, ensuring their safety, well-being, and development within a legal framework that promotes their best interests.
- It provides for adoption in both **in-country** as well as **intra-country**

9. DIGILOCKER PLATFORM

CONTEXT: As board exam results are announced, students can now access their marksheets through the government's DigiLocker platform. This move aims to provide a convenient and secure way for students to access and verify their academic records digitally.

What is DigiLocker and Who Uses It?

- ◆ DigiLocker, launched in **2015**, is a digital platform for storing users' documents securely.
- ◆ It is developed on an **Open Source** stack.
- ◆ It has over 270 million registered users and has retrieved nearly 6.7 billion documents, including **Aadhaar, insurance policies, and driving licenses**.
- ◆ Documents stored in DigiLocker are **considered equivalent to original physical documents**, according to government rules.

Significance of adopting DigiLocker

- ◆ DigiLocker offers a **paperless solution** for accessing and verifying documents, reducing the reliance on physical copies.
- ◆ It helps users carry their documents conveniently on their smartphones and facilitates faster service delivery.
- ◆ The platform is a flagship initiative under the **Digital India program**, ensuring security with encryption, multi-factor authentication, and regular security audits.
- ◆ **Security:** DigiLocker follows strict security protocols under the Ministry of Electronics & IT, with measures like SSL encryption and multi-factor authentication. However, like any online database, it faces potential security risks, although vulnerabilities are promptly addressed.

PYQ

Q. Consider the following: (2022)

1. Aarogya Setu
2. COWIN
3. DigiLocker
4. DIKSHA

Which of the above are built on top of open-source digital platforms?

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

Solution: (d)

Q. Regarding 'DigiLocker', sometimes seen in the news, which of the following statements is/are correct? (2016)

1. It is a digital locker system offered by the Government under Digital India Programme.
2. It allows you to access your e-documents irrespective of your physical location.

Select the correct answer using the code given below:

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

Solution: (c)

10. INTER-SERVICES ORGANISATIONS (COMMAND, CONTROL AND DISCIPLINE) ACT

CONTEXT: Amid the theaterisation plan, the government has introduced the Inter-

Services Organisations (Command, Control and Discipline) Act.

Key Points:

- ◆ **Empowerment of Commanders:** The Act grants authority to **Commanders-in-Chief and Officers-in-Command of Inter-Services Organisations (ISOs)** to maintain discipline and administer service personnel **under their command** effectively. This ensures **discipline** is upheld without disrupting the **unique conditions of each service**.
- ◆ **Streamlined Processes:** By notifying the Act, it enables heads of ISOs to handle cases promptly, preventing multiple proceedings. This move aims to promote greater integration and cooperation among armed forces personnel.

Fact Box: Recent Military Reforms:

Chief of Defence Staff (CDS):

- Created in 2019, the Chief of Defence Staff (CDS) oversees **joint operations, logistics, training, and other services** across the **Army, Air Force, and Navy**.
- CDS's main task is to **reorganize the armed forces** into **integrated theatre commands**, enhancing coordination and efficiency.

Theaterisation Model (not implemented yet)

- The **government's theaterisation model** aims to integrate **Army, Air Force, and Navy** capabilities for better resource utilization during wars and operations.
- Each theatre command will include units from all three services, operating collectively to address security challenges within a specific geographic area.

11. GOVERNMENT'S INFRASTRUCTURE PLANS FOR BORDER AREAS:

CONTEXT: The government plans to construct roads along the China border in Uttarakhand and Sikkim under the Vibrant Village Programme (VVP). Each kilometer of road construction is estimated to cost over Rs 2 crore.

Key-highlights (Implementation Status)

- ◆ The **Ministry of Home Affairs (MHA)** has sanctioned 113 roads in Arunachal Pradesh, Uttarakhand, and Sikkim under the VVP to improve connectivity along the China border.
- ◆ Arunachal Pradesh has received the majority of these sanctions, with Uttarakhand and Sikkim also receiving approvals.

- ◆ The MHA has mandated the installation of **GPS-enabled tracking** devices on machinery used for road construction. This ensures efficient monitoring of construction activities.

Fact Box: Vibrant Village Programme

- **Launched in:** 2023
- **Aim:** The program aims to counter China's expansion of model villages near the **Line of Actual Control (LAC)**.
- The VVP aims to cover 2,967 villages in 46 border blocks across **Arunachal Pradesh, Himachal Pradesh, Sikkim, Uttarakhand, and Ladakh**.
- One key goal is to prevent migration from border areas and gather intelligence from residents.

12. INDIA PLANS CRACKDOWN ON ILLEGAL BETTING AND GAMBLING APPS

CONTEXT: The consumer affairs ministry is taking action against advertisements promoting illegal betting and gambling, which violate the Central Consumer Protection Authority (CCPA) guidelines. These ads, often indirect or surrogate, are on the rise during cricket and election seasons.

India's Gaming Market

- ◆ Despite regulations, online betting platforms continue to advertise their services, raising concerns about their impact, especially on the youth, and the socio-economic consequences.
- ◆ India's gaming market is growing rapidly, expected to reach USD 3.1 billion in FY23 and projected to reach USD 7.5 billion by FY28.
- ◆ India ranks as the **second-largest gaming market globally**, with 15.4 billion game downloads in FY23, second only to China.
- ◆ **Risks associated with excessive gaming:** addiction, health issues from prolonged screen time, social isolation, financial loss from in-game purchases, privacy and security concerns, cyberbullying, and negative effects from violent or aggressive games.

Fact Box:

Regulation of Gaming Industry

- In India, betting and gambling are prohibited by the **Public Gambling Act of 1867**, making them illegal in most parts of the country.
- **Online gaming** falls under the jurisdiction of the **Ministry of Electronics and Information Technology (MeitY)**.

- Online gaming is a **State Subject** under **Schedule 7**.

Government interventions to control gaming industry

- Online gaming companies are required to charge a 28% Goods and Services Tax (GST) on the full value of bets.
- Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021

13. GIS MAPPING OF NATIONAL HIGHWAYS

CONTEXT: The Indian government is planning to complete GIS mapping of all national highways to enhance planning, execution, and monitoring of road projects.

India's Road Network

- ◆ India has the **world's second-largest road network**, covering approximately 66.71 lakh kilometers, with national highways constituting 2% and carrying over 40% of total traffic.
- ◆ There are currently **599 national highways** spanning 1,46,145 kilometers (December 2023).
- ◆ **Classification:** These highways are classified into various categories such as
 - ▶ **North-South Corridors**
 - ▶ **East-West Corridors**
 - ▶ **Golden Quadrilateral** (connecting Delhi, Mumbai, Chennai, and Kolkata)
 - ▶ **3-D Highways** (highway with 3 digit number, secondary branch of the main highway)
- ◆ **Key organizations involved:** Ministry of Road Transport and Highways (MoRTH), National Highways Authority of India (NHAI), Border Roads Organization (BRO), and National Highways and Infrastructure Development Corporation Ltd (NHIDCL).
- ◆ **Government initiatives:** Bharatmala Pariyojana and allowing 100% FDI in roads and highways under the automatic route

PYQ

Q. With reference to India's projects on connectivity, consider the following Statements: (2023)

1. East-West Corridor under Golden Quadrilateral Project connects Dibrugarh and Surat.
2. Trilateral Highway connects Moreh in Manipur and Chiang Mai in Thailand via Myanmar.
3. Bangladesh - China - India - Myanmar Economic Corridor connects Varanasi in Uttar Pradesh with Kunming in China.

How many of the above statements are correct?

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

Solution: (d)

14. CHINA SURPASSES US IN TRADE WITH INDIA

CONTEXT: In the fiscal year 2023-24, China emerged as India's largest trading partner, surpassing the US, with a two-way commerce of USD118.4 billion. This slightly edged past the US, whose bilateral trade with India stood at USD118.3 billion during the same period.

Key-highlights:

- ◆ **Trade Figures with China:** India's exports to China rose by 8.7% to USD16.67 billion in the last fiscal year, driven by sectors like **iron ore, cotton yarn/fabrics/madeups, handloom, spices, fruits and vegetables, plastic, and linoleum**. However, imports from China increased by 3.24% to USD101.7 billion.
- ◆ **Trade Figures with the US:** In contrast, India's exports to the US dipped by 1.32% to USD77.5 billion in 2023-24, while imports decreased by about 20% to USD40.8 billion. However, imports from the US grew by 14.7%, resulting in an expanded **trade surplus** for India, which grew from USD16.86 billion to USD36.74 billion.
 - ▶ **Trends in Trade Surplus:** The significant growth in imports from the US contributed to India's **trade surplus expansion**, which increased from USD16.86 billion to USD36.74 billion in the fiscal year 2023-24.
- ◆ **Historical Context:** China was India's top trading partner from 2013-14 till 2017-18 and also in 2020-21. The UAE, followed by the US, held the position before China became the top trading partner again.
 - ▶ In 2023-24, the UAE ranked as India's third-largest trading partner, with a trade volume of USD83.6 billion.
- ◆ **Other Major Trading Partners:** Apart from China and the US, other major trading partners of India in 2023-24 included Russia (USD65.7 billion), Saudi Arabia (USD43.4 billion), and Singapore (USD35.6 billion).

15. XENOTRANSPLANTATION

CONTEXT: The first recipient of a modified pig kidney transplant (Xenotransplantation) passed away,

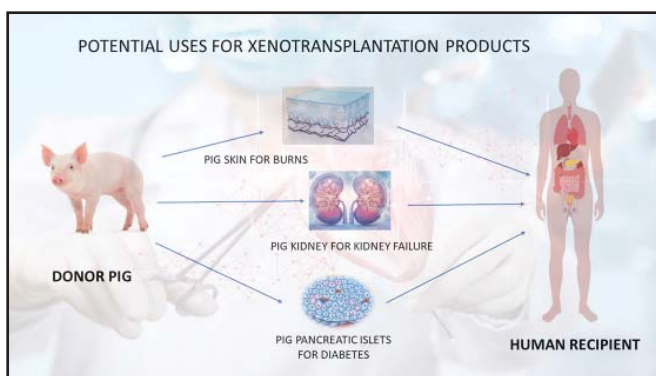
around two months after the surgery was carried out. However, his death was not linked to the transplant operation.

About Xenotransplantation

- ◆ Xenotransplantation involves **transplanting organs or tissues** from **nonhuman animals** into **humans to treat various medical conditions**.
- ◆ It addresses the **shortage of donor organs** and aims to save lives by providing alternative sources for transplantation.
- ◆ Xenotransplantation encompasses procedures where **live cells, tissues, or organs** from nonhuman animals are transplanted into human recipients.

Fact Box: Organ donation in India

- Organs from deceased donors accounted for nearly **8% of all transplants in 2022** in the country.
- The number of transplants has increased over the years.
- The total number of deceased organ transplants climbed from 837 in 2013 to 2,765 in 2022.
- The total number of organ transplants – with organs from both deceased and living donors – increased from 4,990 in 2013 to 15,561 in 2022.
- India conducts the third highest number of transplants in the world.
- Every year, an estimated 1.5-2 lakh people need a kidney transplant. Only around 10,000 got one in 2022. Of the 80,000 people who required a liver transplant, less than 3,000 got one in 2022. And, of the 10,000 who needed a heart transplant.
- **Regulations:** Organ donation in India is regulated by the **Transplantation of Human Organs and Tissues Act (THOTA), 1994**, which was amended in 2011.



16. FLIRT

CONTEXT: A new variant of COVID-19, called **FLiRT**, has become the dominant strain in the United States. **FLiRT** is a subtype of the Omicron JN.1 lineage and is characterized by two mutations, **KP.2** and **KP.1.1**.

Key Points:

- ◆ FLiRT variant consists of two mutations, **KP.1.1** and **KP.2**, both of which are spreading rapidly.
- ◆ It is characterized by various symptoms, and its rapid spread requires continued monitoring and appropriate public health measures.
- ◆ **Symptoms:** Sore throat, Cough, Fatigue, Nasal congestion, Runny nose, Headache, Muscle aches, Fever, Gastric issues

17. GLOBAL REPORT ON NTDs 2024

CONTEXT: The World Health Organization (WHO) has released its **Global report on neglected tropical diseases 2024**.

Global Report on Neglected Tropical Diseases 2024 Highlights:

- ◆ **Reduction:** In 2022, 1.62 billion people needed interventions for neglected tropical diseases (NTDs), showing a 26% decrease from 2010. However, this falls short of the 2030 target of a 90% reduction.
- ◆ **Elimination:** Five countries eliminated **one NTD**, and one country eliminated **two NTDs** in 2023. A total of 50 countries have eliminated at **least one NTD**, halfway towards the **2030 goal of 100 countries**.
- ◆ **Treatment Coverage:** Approximately 848 million people received treatment for NTDs in 2022, a decrease from 2021 but an increase from 2020.
- ◆ **Impact of Vector-borne NTDs:** Reported deaths from vector-borne NTDs increased by 22% in 2022 compared to 2016.
- ◆ **Progress and Strategies:** Progress includes scaling up **integrated skin-NTD strategies**, managing NTD-related disabilities, and integrating NTDs into national health plans.
 - ▶ Access to water supply, sanitation, and hygiene is at 85.8% in NTD-endemic countries and 63% among those needing NTD interventions.
 - ▶ 87.4% of the population at risk is protected against catastrophic health expenditure due to NTDs.
- ◆ **India's case:**
 - ▶ India was certified free of dracunculiasis and yaws.
 - ▶ India, which has the highest disease burden, treated about 117 million fewer people for lymphatic filariasis and soil-transmitted helminthiasis in 2022 compared to 2021.
- ◆ **Noma was added to the list of NTDs** in 2023.
- ◆ Medicine donation programs delivered 2.1 billion tablets and vials in 2023, with 994 million managed by WHO and provided to 112 Member States.

Fact Box:**About Neglected Tropical Diseases (NTDs):**

- NTDs are caused by various pathogens and have severe health, social, and economic impacts.
- They mainly affect impoverished communities in tropical areas, with an estimated 1 billion people affected and 1.6 billion requiring interventions.

About Noma

- Noma, also called **cancrem oris** or **gangrenous stomatitis**, is a serious and often fatal disease that affects the **mouth and face**.
- It has a **very high mortality rate** of around 90 percent. Noma is linked to conditions like extreme **poverty, malnutrition, and limited access to clean water and dental care**.

18. 'FOOT ROT' OR 'BAKANAE' DISEASE

CONTEXT: Scientists has created a **biocontrol agent called Trichoderma asperellum to help Punjab farmers combat the 'foot rot' or 'bakanae' disease, which commonly affects Basmati rice crops. This agent has been registered with the Central Insecticides Board and Registration Committee (CIBRC).**

Understanding Foot Rot

- ◆ Foot rot is a fungal disease that primarily affects Basmati rice crops during the seedling stage but can also infect plants after transplantation.
- ◆ It is caused by the **Fusarium verticillioides fungus**, which spreads through the roots and eventually colonizes the stem base.
- ◆ Infected seedlings exhibit symptoms such as turning pale yellow, elongation, drying up, and eventual death.
- ◆ **Current Management Practices:** Currently, farmers treat seedlings with **Trichoderma harzianum** before sowing and transplantation. Additionally, seeds are treated with chemical fungicides like **Sprint 75 WS (carbendazim + mancozeb)** before sowing. However, these chemical treatments pose risks to soil health and can leave toxic residues in rice consumed by consumers.

Fact Box: Trichoderma asperellum

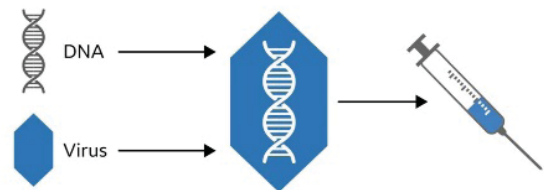
- Trichoderma asperellum, offers an eco-friendly alternative to chemical pesticides. This biocontrol agent aids in disease management while minimizing environmental harm.
- It provides farmers with a non-chemical solution to tackle foot rot and protect their Basmati rice crops.

19. GENE THERAPY FOR HEARING RESTORATION

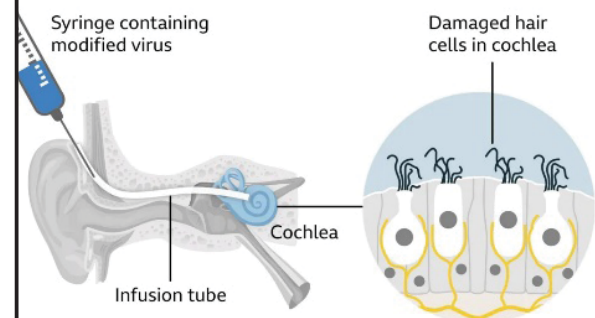
CONTEXT: A British toddler has had her hearing restored through a pioneering gene therapy trial, marking a significant development in treating deafness.

How gene therapy works

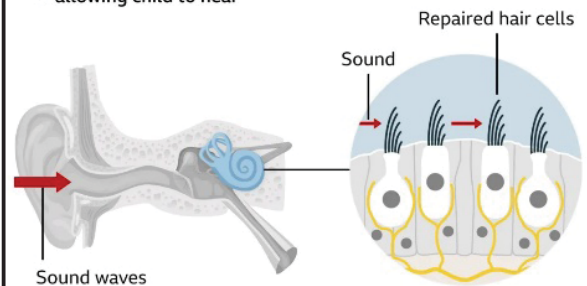
1. DNA added to harmless virus to make the gene therapy



2. Gene therapy infused into inner ear



3. Damaged hair cells repaired by the therapy – allowing child to hear



Source: BBC research

BBC

About DB-OTO Gene Therapy:

- ◆ The gene therapy, known as DB-OTO, targets children with **OTOF mutations**, a specific genetic cause of deafness.
- ◆ A harmless virus is used to deliver a functional copy of the **OTOF gene** into the patient's cells.
- ◆ Mechanism of Action:
 - ◆ **Auditory neuropathy**, caused by a **faulty OTOF gene**, disrupts the production of **otoferlin**, a protein vital for ear cell communication with the hearing nerve.
 - ◆ The DB-OTO therapy replaces the faulty DNA with a **functional copy of the OTOF gene**, allowing cells in the ear to produce otoferlin and restore hearing function.

◆ **Innovative Approach:** Developed by **biotech firm Regeneron**, this pioneering gene therapy delivers the working gene directly to the ear through an infusion.

About Gene Therapy

- Gene therapy involves using **innovative techniques** to treat diseases by modifying a person's genes.
- This therapy aims to **address genetic disorders** and other medical conditions at their root cause, offering potential long-term solutions.
- It often involves introducing **new, healthy genes** into a **patient's cells** or modifying existing genes to correct abnormalities.
- It holds promise for treating a wide range of diseases, including **inherited disorders, cancer, and certain viral infections, marking a significant advancement in medical science.**

PYQ

Q. Consider the following statements : (2020)

1. Genetic changes can be introduced in the cells that produce eggs or sperms of a prospective parent.
2. A person's genome can be edited before birth at the early embryonic stage.
3. Human induced pluripotent stem cells can be injected into the embryo of a pig.

Which of the statements given above is/are correct?

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

Solution: (d)

20. CAENORHABDITIS ELEGANS (C. ELEGANS)

CONTEXT: The recent research findings regarding the inheritance of knowledge in *Caenorhabditis elegans* worms are significant because they shed light on the potential transmission of behavior-modifying molecules across generations. This breakthrough has garnered attention due to its implications for understanding biological mechanisms and their relevance to human health and behavior.

Key-highlights of Research Findings:

◆ Researchers discovered that *C. elegans* worms **inherit knowledge** to avoid **disease-causing bacteria** for up to four generations.

◆ This phenomenon raises questions about similar abilities in humans.

◆ **Mechanism of Transmission:** *Pseudomonas vranovensis*, a disease-causing bacterium, produces a small RNA molecule (sRNA) that alters the worm's feeding behavior. The learned avoidance behavior is passed down to subsequent generations of worms through **RNA interference**.

◆ **Role of sRNA in Behavior Modification:**

◆ Worms absorb sRNA from bacteria, reducing the expression of the **maco-1 gene**, which plays a role in neurological function.

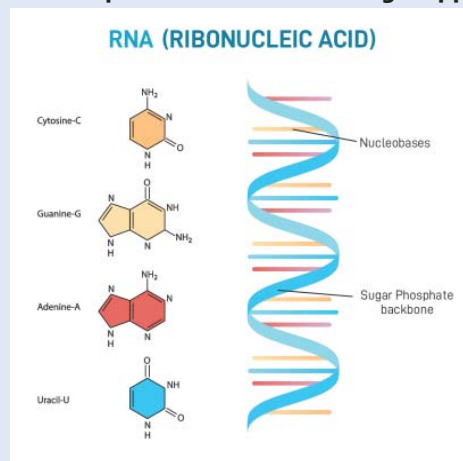
◆ Worms trained to avoid pathogenic bacteria pass on this behavior to their offspring.

◆ **Implications for Human Health:** The study prompts speculation about whether humans can absorb sRNA from microbes and modify behavior across generations.

Fact Box:

About *Caenorhabditis elegans* (*C. elegans*)

- *C. elegans* is a nematode—a member of the phylum Nematoda.
- It is a non-hazardous, non-infectious, non-pathogenic, non-parasitic organism. However, it is a widely studied **roundworm known** for its contributions to neuroscience and molecular biology.
- It was the **first multicellular organism** to have its **genome sequenced** and **neural wiring mapped**.



- Mutations in genes found in *C. elegans* have been associated with human conditions like **limb deformities**.

Understanding RNA:

- RNA molecules are like half-ladders with ribose sugar and four bases: **A, C, G, and U**.
- Some genes produce small **RNA molecules (sRNA)**, which regulate gene expression by binding to other proteins and RNAs.

21. NEURAL PROCESSING UNIT (NPU)

CONTEXT: Apple introduced the M4 chip with the iPad Pro, boasting significant improvements in performance, notably the inclusion of a 16-core Neural Engine, Apple's version of a Neural Processing Unit (NPU).

What is Neural Processing Unit?

- ◆ An NPU is a **specialized processor** designed to accelerate **neural network processes**, which are the basis for **AI-related tasks** like speech recognition, natural language processing, and photo/video editing.
- ◆ In consumer gadgets like smartphones and tablets, the NPU is integrated within the main processor, while in data centers, it might be a **separate processor**.
- ◆ **Different from CPU and GPU**
 - ▶ **Central processing unit (CPU)** execute instructions sequentially, while NPUs employ parallel computing for simultaneous execution of multiple calculations, making them efficient for AI tasks.
 - ▶ **Graphics processing unit (GPU)** also have **parallel computing capabilities** but are mainly used for **graphic rendering**. NPUs are dedicated to AI tasks, making them more efficient and less power-consuming.

22. HERMES-900 STARLINER DRONES

CONTEXT: The Indian Army is set to enhance its surveillance capabilities with the acquisition of the Hermes-900 Starliner drones, also known as Drishti-10, from Adani Defence Systems.

About Hermes-900 Starliner Drones:

- ◆ The drones are state-of-the-art unmanned aerial vehicles equipped with high-performance sensors.
- ◆ They have proven instrumental in detecting ground or maritime targets across a wide spectral range and can execute ground target attacks.

Fact Box: Additional Procurements:

The army will also acquire a Very Short Range Air Defence System (VSHORADS) and a UAV-launched Precision Guided Munition (ULPGM) to bolster its capabilities further.

About VSHORADS (Very Short Range Air Defence System)

- VSHORADS is a **fourth-generation, man-portable air-defence system** designed to counter low-altitude aerial threats like unmanned aerial vehicles, helicopters, and fighter aircraft.
- Developed domestically, VSHORADS represents a significant advancement in India's ability to neutralize short-range airborne threats effectively.

About ULPGM (UAV Launched Precision Guided Munition):

- ULPGM is a **sophisticated missile system** designed for deployment on drones.
- It is the first installment in a series of precision-guided munition missiles specifically engineered for unmanned aerial vehicles.
- ULPGM is set to become the standard PGM for India's TAPAS BH and Archer NG UAVs, positioning India as a leader in drone-enabled precision strike capabilities.

23. CHINA'S THIRD AIRCRAFT CARRIER FUJIAN

CONTEXT: China's newest aircraft carrier, Fujian, recently completed its maiden sea trial after six years of construction.

Specifications:

- ◆ The *Fujian*, officially classified as a Type 003, was launched in **2022**.
- ◆ It has a displacement of nearly **80,000 metric tons**, making it bigger than China's two active carriers, **Shandong and Liaoning**.
- ◆ Unlike Shandong and Liaoning which rely on less advanced **ski jump-style short take-off, barrier-arrested recovery (STOBAR) systems**, Fujian is equipped with a **Catapult Assisted Take-Off Barrier Arrested Recovery (CATOBAR) system** for launching aircraft.
- ◆ **Aircraft and Equipment:** Fujian is expected to host **Shenyang J-15 fighters, J-35s, JL-10 trainer jets, and Xian KJ-600 fixed-wing AEW/C aircraft**. It features an **advanced deck coating**.
- ◆ Despite its technological advancements, Fujian, is still conventionally powered rather than nuclear propulsion

Comparison:

- ◆ **US Navy:** Fujian is the **first Chinese aircraft carrier** equipped with **CATOBAR**, similar to systems used by the US Navy. Currently, only the US Navy operates aircraft carriers larger than 80,000 metric tons. Fujian's catapults are powered by an electromagnetic system similar to the **U.S. Navy's Gerald R. Ford-class carriers**.

◆ **Indian Navy's Aircraft Carriers:** The Indian Navy operates two aircraft carriers, **INS Vikramaditya** and **INS Vikrant**, which use the STOBAR system. China's Navy has become the largest with 355 warships and submarines, while India's total fleet strength is 130 vessels.

24. DISCOVERY OF SUPER-EARTH:

CONTEXT: Scientists have discovered a super-Earth in a nearby solar system, fulfilling the quest for rocky planets with an atmosphere conducive to life.

Characteristics of 55 Cancri e:

- ◆ Named 55 Cancri e, the super-Earth is **twice as big as Earth** and surrounded by a thick atmosphere.
- ◆ It is one of the **few rocky planets** outside solar system with a significant atmosphere, consisting mainly of carbon dioxide and carbon monoxide.
- ◆ It orbits its star, **Copernicus**, at a close distance, completing an orbit every 18 hours or so.
- ◆ Located **41 light years** away from Earth, 55 Cancri e circles its star so closely that it experiences permanent day and night sides.
 - ▶ A light-year is nearly **six trillion miles (9.7 trillion kilometers)**, emphasizing the vast distance between Earth and the exoplanet.
- ◆ **Comparison with Earth:**
 - ▶ **Composition:** While Earth's atmosphere comprises nitrogen, oxygen, argon, and other gases, the exact composition of 55 Cancri e's atmosphere remains unclear. The planet's atmosphere is likely rich in carbon dioxide or carbon monoxide, with possible traces of other gases like water vapor and sulfur dioxide.
 - ▶ **Size and Orbit:** 55 Cancri e is eight times heavier and twice as big as Earth, making it a "super-Earth" larger than our planet but smaller than Neptune.

25. WORLD'S LARGEST CARBON CAPTURE PLANT

CONTEXT: The World's largest carbon capture plant, called the **Mammoth direct air capture and storage (DAC+S) plant**, is now operational in Iceland (**Hellisheiði geothermal park**).

About

- ◆ The purpose of this plant is to capture carbon dioxide (CO₂) from the air using a process called **direct air capture (DAC)**.

- ◆ Large fans pull air into the plant, where **chemicals remove the carbon dioxide**. Once captured, the CO₂ can be stored deep underground, reused, or turned into solid products.
- ◆ The Mammoth plant is expected to remove up to **36,000 tonnes of CO₂** from the air annually.
- ◆ Unlike **carbon capture methods** that capture emissions at their source, DAC removes CO₂ directly from the air.

Fact Box: Carbon capture and storage

- Carbon capture and storage (CCS) involves capturing carbon dioxide (CO₂) at emission sources, transporting and then storing or burying it in a suitable deep, underground location.

PYQ

Q. Consider the following activities: (2023)

1. Spreading finely ground best rock on farmlands extensively
2. Increasing the alkalinity of by adding lime
3. Capturing carbon dioxide released by various industries and pumping into abandoned subterranean mines in the form of carbonated waters

How many of the above activities are often considered and discussed for carbon capture and sequestration?

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

Solution: (c)

26. NERIUM OLEANDER (NERIUM)

CONTEXT: Following the suspected deaths of a woman and two cattle after consuming **Nerium Oleander flowers and leaves**, the **Travancore Devaswom Board** has decided to exclude the flower from prasadas given to devotees.

Description of Oleander Plant:

- ◆ Oleander, known as '**Arali**' in Malayalam, is an evergreen shrub that can grow 18-20 feet tall and produces fragrant blooms.
- ◆ Despite its deadly seeds and other parts, oleander flowers are commonly used in poojas due to their significance.
- ◆ Oleander, also known as "**the desert rose**," has a rich history dating back to ancient **Mesopotamians**, who believed in its healing benefits and used it as a remedy for hangovers.

◆ Romans and Arabs also utilized oleander for various health issues.

◆ **Toxicity of Oleander:**

- ▶ All parts of the oleander plant, including **flowers, leaves, stem, and roots**, contain toxic compounds called **cardiac glycosides**.
- ▶ Ingesting oleander can lead to severe health issues such as **nausea, vomiting, abdominal pain, irregular heart rhythm**, and even death in severe cases.

◆ **Medical Uses and Potential Benefits:**

- ▶ Oleander contains **oleandrin and nerioside**, which have effects similar to **digitalis**, a medication used to treat heart conditions. Some studies suggest oleander extracts may have anti-cancer properties and be effective against asthma, epilepsy, malaria, and other ailments.

27. SPERM WHALE (PHYSETER MACROCEPHALUS)

CONTEXT: Scientists at MIT are using machine learning to study sperm whale communication. Their study focused on whale vocalizations known as **codas**, short bursts of clicks similar to Morse Code.

Discoveries:

- ◆ Past research identified about 150 codas, but recent study reveals a complex language structure.
- ◆ After analyzing nearly **9,000 codas from Eastern Caribbean whales**, researchers discovered a **"sperm whale phonetic alphabet"** where clicks form words with different meanings based on **rhythm and tempo**.

Fact Box: About Sperm Whale

- The Sperm Whale is a **large, dark-colored, toothed whale** with a massive, square-shaped head that can make up more than a third of its body length.
- It has a single blowhole located on the forehead and to the left, which produces a distinctive, angled blow.
- **Spermaceti:** Sperm whales are named after the waxy substance known as spermaceti found in their heads. Spermaceti is an oil sac that helps the whales focus sound and was historically used in oil lamps, lubricants, and candles.
- The sperm whale possesses the **largest brain of any creature known to have lived on Earth**, indicating high intelligence and complex cognitive abilities.
- **Global Distribution:** They inhabit all deep oceans, ranging from the equator to the edge of the pack ice in the Arctic and Antarctic regions.
- **Conservation Status:**
 - ▶ **IUCN:** Vulnerable
 - ▶ **CITES:** Appendix I

28. ARMoured SAILFIN CATFISH

CONTEXT: Researchers at CSIR-Centre for Cellular and Molecular Biology (CCMB) have discovered that the **invasive armoured sailfin catfish has spread to 60% of the water bodies in the Eastern Ghats**. This catfish, once introduced for its unique appearance and algae-cleaning abilities, has multiplied rapidly, damaging fishing nets and disrupting the local ecosystem.

About Armored catfish (Family: Loricariidae)

- ◆ **Origin:** The armoured sailfin catfish, known as the **Rakashi or devil fish**, come from **South America**.
- ◆ **Feeding Habits:** They mainly eat algae and are active at night. They have a distinct sucker on their underside.
- ◆ **Invasion Impact:** Once these catfish invade a new area and start reproducing, it's extremely difficult to get rid of them.
- ◆ **Negative Effects:** They harm native plants and animals by competing for resources, altering food chains, and causing water to become murky due to their burrowing. They also disrupt the feeding habits of large aquatic mammals like manatees.

Fact Box: About eDNA

- To track the spread of invasive species like the armoured sailfin catfish, scientists developed a new method called the **'eDNA-based quantitative PCR assay'**.
- This method involves collecting **eDNA (environmental DNA (Deoxyribonucleic Acid))** from water samples to specifically detect the presence of the catfish.
- Unlike traditional methods, the eDNA approach is **reliable, cost-effective, and accurate**, making it suitable for large-scale monitoring projects like the Eastern Ghats water bodies.
- Using this innovative technique, researchers can quickly and accurately assess the presence of invasive species in multiple water bodies simultaneously.

Recent Interventions to control Invasive Species

- **Legal Framework:** Biological Diversity Act of 2002, National Biodiversity Authority Act of 2002.
- **National Action Plan on Invasive Alien Species (NAPINVAS):** Prevention, early detection, control, and management of invasive species.
- **National Invasive Species Information Center (NISIC):** To provide information and resources about invasive species in India.
- **Measures taken at international level:** United Nations Convention on Biological Diversity (CBD – 1992), Kunming-Montreal Global Biodiversity Framework, Global Invasive Species Programme, International Plant Protection Convention (IPPC)

29. OVERVIEW OF INDIA'S EXPORT PERFORMANCE

CONTEXT: India's export landscape has witnessed notable developments, despite global economic uncertainties.

Export Destinations and Performance

- ◆ India exported to 115 countries out of 238 destinations in 2023-24, encompassing key markets like the **US, UAE, China, and UK**.
- ◆ **Merchandise exports** slightly declined to USD 437.1 billion, while services exports rose to USD 341.1 billion in 2023-24. India's share in world merchandise exports increased from 1.70% in 2014 to 1.82% in 2023 and rank in world merchandise exporters improved from 19th to 17th during the same period.
- ◆ **Overall exports** reached USD 778.2 billion in 2023-24, with a marginal growth of 0.23% compared to the previous year.
- ◆ **Commodity-wise Performance:** 17 items saw increased exports in 2023-24, constituting 48.4% of India's export basket. Notable decline in petroleum products (-13.66%) and gems and jewellery (-13.83%).

- ◆ **Key Export Destinations:** UAE emerged as the primary destination with a 12.71% growth, followed by Singapore, UK, and China. Significant growth rates were observed in countries like Russia, Romania, and Albania, indicating new market exploration.

Regional Export Growth

- ▶ Exports to CIS, Oceania, and Europe witnessed expansion in 2023-24.
- ▶ **Key export drivers in CIS region:** Russia, Uzbekistan, Ukraine, Armenia, and Tajikistan.
- ▶ **Major export growth in Oceania:** Australia, Timor Leste, Samoa, Vanuatu, and Solomon Island.
- ▶ **Notable export growth in Europe:** UK, Romania, Albania, Netherland, and Greece.

Import Trends

- ◆ Imports declined from 124 countries in 2023-24.
- ◆ Top 10 source countries for imports **include China, USA, Saudi Arabia, Indonesia, Russia, and Switzerland**.
- ◆ Decline in imports from countries like UAE, Qatar, Kuwait, and Oman indicates the need for bolstering trade relations.



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- CHANDIGARH
- COIMBATORE
- CUTTACK
- DEHRADUN
- DELHI
- DHARMSHALA
- DHARWAD
- GORAKHPUR
- GUWAHATI
- GWALIOR
- HYDERABAD
- INDORE
- ITANAGAR
- JABALPUR
- JAIPUR
- JAMMU
- JODHPUR
- KOCHI
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- MUMBAI
- MYSORE
- NAGPUR
- NAVI MUMBAI
- PANAJI
- PATNA
- PRAYAGRAJ
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- RAIPUR
- RAJKOT
- RANCHI
- SAMBALPUR
- SHILLONG
- SHIMLA
- SRINAGAR
- SURAT
- THIRUVANANTHAPURAM
- UDAIPUR
- VARANASI
- VIJAYAWADA
- VISAKHAPATNAM

1
MOCK
TEST

13
APRIL

2
MOCK
TEST

19
MAY

3
MOCK
TEST

02
JUNE

TEST
TIMING

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PAPER 2: 01:00 PM to 03:00 PM

TEST
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ONLINE MODE
5:30 PM on the Day of Test

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SECTION C

TERMS OF THE WEEK

S.NO.	TERM	ABOUT
1	Blue Corner Notice	◆ A Blue Corner Notice is issued to "collect additional information about a person's identity, location or activities in relation to a criminal investigation". The notice is sent to all countries via Interpol asking to identify and locate.
2	Bottom Trawling	◆ Bottom - or demersal - trawling is a fishing method that uses towed nets to catch fish and other marine species living on or close to the seabed.
3	Coronal Mass Ejections (CMEs)	◆ CMEs are large expulsions of plasma and magnetic field from the Sun's corona. They can eject billions of tons of coronal material and carry an embedded magnetic field (frozen in flux) that is stronger than the background solar wind interplanetary magnetic field (IMF) strength.
4	Carbon Capture and Storage	◆ Carbon capture and storage involves capturing carbon dioxide at emission sources, such as power stations, then transporting and storing it underground.
5	Crater	◆ A crater is a bowl-shaped depression, or hollowed-out area, produced by the impact of a meteorite, volcanic activity, or an explosion.
6	Debt distress	◆ Debt distress is a situation where a country is unable to fulfill its financial obligations and debt restructuring is required.
7	Deadbots	◆ Deadbots, also known as griefbots, are AI-enabled digital representations of departed loved ones.
8	Environmental DNA (eDNA)	◆ Environmental DNA (eDNA) is nuclear or mitochondrial DNA that is released from an organism into the environment.
9	Geomagnetic storm	◆ A geomagnetic storm is a major disturbance of Earth's magnetosphere that occurs when there is a very efficient exchange of energy from the solar wind into the space environment surrounding Earth.
10	Great Replacement Theory	◆ This theory, endorsed by French author Renaud Camus, claims that white European populations are being replaced by non-white people due to mass migration and declining birth rates.
11	Genetic disorder	◆ A genetic disorder is a disease caused in whole or in part by a change in the DNA sequence away from the normal sequence.
12	Low Earth orbit (LEO)	◆ LEO is an orbit that is relatively close to Earth's surface. It is normally at an altitude of less than 1000 km but could be as low as 160 km above Earth – which is low compared to other orbits, but still very far above Earth's surface.
13	Magnetosphere	◆ The magnetosphere is the region of space surrounding Earth where the dominant magnetic field is the magnetic field of Earth, rather than the magnetic field of interplanetary space. The magnetosphere is formed by the interaction of the solar wind with Earth's magnetic field.
14	Negativity bias	◆ The negativity bias is human's tendency not only to register negative stimuli more readily but also to dwell on these events.
15	Neglected tropical diseases (NTDs)	◆ Neglected tropical diseases (NTDs) are a group of twenty parasitic, bacterial, fungal, viral and protozoan infections, in addition to envenoming, that affect over one billion people of the world's most marginalised people. Example: HIV/AIDS, tuberculosis, and malaria
16	Rat hole mining	◆ It is a method of extracting coal from narrow, horizontal seams
17	Rocky planet	◆ Rocky planet is a planet that is composed primarily of silicate, rocks or metals. Example: Mercury, Venus, Earth and Mars.

