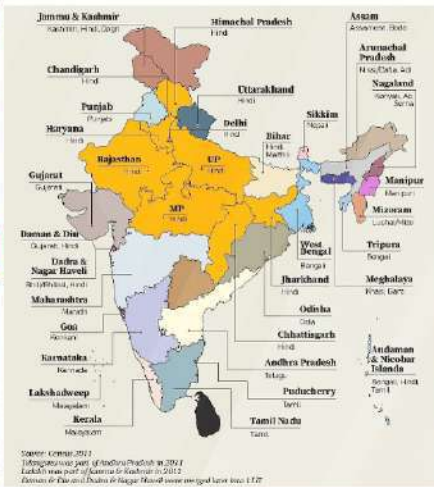
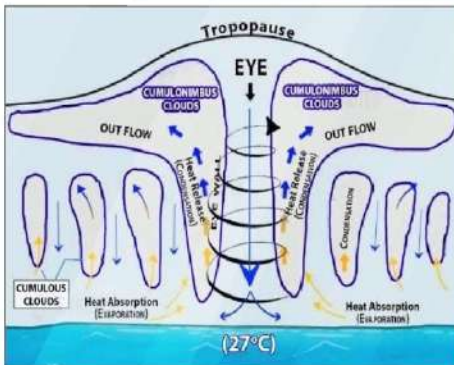


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Preface

PRAMUKH SAMEEKSHA MAGAZINE compilation attempts to encapsulate crucial analysis published in **The Hindu and The Indian Express** (Also PIB) from **June 1 to June 30, 2026**, specifically tailored for aspirants preparing for UPSC and various State PSC examinations.

Each editorial is analyzed with a clear focus on the UPSC examination pattern, highlighting significant aspects such as **political, economic, social, environmental, and ethical dimensions**. Moreover, this analysis emphasizes how editorial insights can be practically leveraged to enrich answers for both **Prelims and Mains examinations**, aiding aspirants in building a **comprehensive, nuanced perspective**.

By systematically connecting current affairs with static syllabus topics, this compilation **aims to bridge the gap between theoretical concepts and contemporary developments**. Aspirants will find these analyses instrumental in refining their critical thinking skills, enhancing their understanding of **national and global events**, and ultimately improving their performance in the examination hall.

We sincerely hope that this dedicated effort supports and empowers you on your journey towards **achieving excellence in your civil services preparation**.

Best Wishes,
BAPS Pramukh Academy

BAPS Pramukh Academy is not merely a UPSC coaching centre — it is a sacred institution born out of the divine vision of His Holiness Pramukh Swami Maharaj to create a spiritually rooted, **value-driven bureaucracy for Bharat**. Inspired by his profound belief that **“Nation-building is not about constructing structures, but about constructing character,”** the Academy prepares aspirants not only to succeed in India’s most prestigious civil services examinations, but to embody the **virtues of integrity, humility, empathy, and righteous leadership in public life**.

Nestled in **green, clean, and serene residential campuses**, the Academy offers a uniquely peaceful and disciplined environment that nurtures both academic excellence and moral growth. The residential facilities are thoughtfully designed to support focused preparation — with **well-equipped libraries, tech-enabled classrooms, guided study hours, nutritious meals, separate secure hostels for boys and girls, and dedicated spiritual spaces for reflection and meditation**. The ambience fosters deep concentration, self-discipline, and enabling aspirants to grow not just in **knowledge, but in character**.

In addition to its offline foundation, the Academy also runs the **‘Pramukh SAMPURN Programme’** — a fully online UPSC preparation initiative that brings the same **spirit of value-based learning to students across Bharat**. This programme ensures that aspirants from remote or **financially disadvantaged backgrounds can access high-quality, structured, and holistic civil services preparation from anywhere in the country**. Through live classes, recorded lectures, daily mentorship, practice tests, and value-enrichment sessions, the online initiative aims to democratize UPSC coaching while upholding the Academy’s commitment to **affordability, accessibility, and ethical guidance**.

Whether it is through **targeted offline batches for UPSC-CSE, GPSC (Class 1–2), and Class-3 Master programmes**, or through its online reach, **BAPS Pramukh Academy** remains steadfast in its mission: to produce not just officers, but officer-saints — servant-leaders who carry forward India’s administrative legacy with **wisdom, compassion, and unwavering moral strength**. True to **Pramukh Swami Maharaj’s** timeless words — **“Without character, even the most educated person is dangerous to society”** — every initiative at the Academy is a step toward building a **Viksit Bharat** through character-first leadership.

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Table of Content

1. Joy and pain	5
2. IMEC is caught between commerce and geopolitics	7
3. “Dear Gen Z, join the system. Change happens in mundane politics”	9
4. “India, Myanmar and a shifting balance”	11
5. “Funding India’s climate future, a trillion-dollar question”	14
6. “Fire and furore”	16
7. “Why did SC back curbs on online gaming?”	18
8. Equality of treatment for Persons with Disabilities	20
9. The 8th CPC — a chance to reform pay commissions	22
10. India-France Relations Latest News: Special Global Strategic Partnership	24
11. The hidden history of the Thai-Bharat connection.....	27
12. The hidden history of the Thai-Bharat connection.....	29
13. The ‘seven-point IQ opportunity’ for Indian children.....	31
14. End the Free Rein of Junk Food Advertising in India	33
15. The Lack of Accountability within the NTA.....	35
16. India doesn’t just need start-ups, but scale-ups that become global giants.....	37
17. The challenge of India’s digital sovereignty.....	39
18. PACOM: The Deeper Meaning Behind a Dropped Prefix.....	41
19. Sustaining India's Low-Fertility Future.....	44
20. India–New Zealand FTA, A Modern Trade Partnership	46
21. The Cracks Beneath the Peddled Story of India's Growth	48
22. India to Replace Wholesale Price Index (WPI).....	51
23. FRA–PESA Task Force faces criticism from tribal rights groups	53
24. Indigenous RudraM-II missile successfully completes flight trials.....	54
25. Climate Science Report warns India is losing capability to build indigenous scientific instruments.....	55
26. Central Advisory Committee reviews	56
27. North Eastern Council (NEC) to hold 73rd Plenary Session in Shillong.....	57
28. Orange-fronted Parakeets get a boost from ‘super breeder’ pair in New Zealand conservation effort....	59
29. Agricultural and Processed Food Products Export Development Authority (APEDA) – In News	60
30. National e-Vidhan Application (NeVA) – In News.....	61
31. Ministry of Coal to organize Roadshow on Coal and Lignite Gasification Projects in Hyderabad.....	63
32. Government extends Credit Guarantee Scheme for Microfinance Institutions (CGFMU) till March 2028	64

33. Gharials	65
34. Zojila Tunnel.....	66
35. Masroor Rock-Cut Temples.....	67
36. Oilseeds Kisaan Mitra.....	68
37. Network Survey Vehicle (NSV)	70
38. Coal Exchanges can help address India's energy shortages and improve market efficiency	71
39. Joint Crediting Mechanism (JCM)	76
40. GRAPES-3 Telescope	77
41. Knob-Billed Duck.....	78
42. Manas National Park.....	79
43. Sickle Cell Anaemia	80
44. Indian Coast Guard (ICG).....	81
45. International Tribunal for the Law of the Sea (ITLOS)	82
46. Brahmani River.....	83
47. Centre Tightens Norms for Foreign Contributions under FCRA	84
48. Nirbhay Chetna Initiative	85
49. Ecologically Sensitive Area (ESA) / Eco-Sensitive Zone (ESZ).....	86
50. Anthropological Survey of India (AnSI)	87
51. Vaigai River	89
52. Pradhan Mantri Rashtriya Bal Puraskar (PMRBP).....	90
53. International Maritime Organization (IMO)	91
54. BRICS Heads of Space Agencies Meeting in Bengaluru	92
55. 10th Apex-Level NCORD meeting	93
56. Prime Minister Narendra Modi chaired the 52nd PRAGATI meeting.....	94
57. The International Maritime Organization (IMO)	95
58. Russia's nuclear-powered Burevestnik (SSC-X-9 Skyfall)	96
59. Banganapalle mangoes from India	97
60. Indigenous HELINA helicopter-launched	98
61. 10th Apex-Level Narco-Coordination Centre (NCORD)	99
62. Caspian Sea	100
63. Madras High Court ruled that a person converting.....	101
64. Bandipur and Nagarhole Tiger Reserves.....	101
65. World Crocodile Day 2026	102

66. Hamataliwa mawlyngot – In News	104
67. Drop Shipping – In News.....	104
68. Himalayan Pangolin – In News.....	105
69. Leucine – In News	106
70. Norwegian Sea – In News	107
71. Performance Grading Index (PGI)	108
72. Rashtriya Gokul Mission (RGM) – In News	109
73. Specialised Investment Fund (SIF) – In News.....	110
74. Giant African Snail – In News	111
75. Partnership on Cyber, Critical Technologies and Supply Chains (PACTS) – In News	112
76. Wildlife Institute of India (WII) – In News.....	113
77. Neonatal Sepsis – In News	114
78. Nirbhay Chetna Initiative – In News	115
79. Doctrine of Constructive Res Judicata	116
80. Berijam Lake.....	118
81. Index of Services Production (ISP)	119
82. BHARATI Programme	120
83. Vikram-1 (Skyroot Aerospace)	122
84. Semicon 2.0 (India Semiconductor Mission – Phase II)	123
85. Kudankulam Nuclear Power Plant (KKNPP) Data Breach.....	125
86. India's Uranium Quest	128
87. Weak Monsoon & El Niño	130
88. Content Blocking Regime in India	132
89. Western Ghats Ecologically Sensitive Area (ESA)	133
90. Delhi Electric Vehicle (EV) Policy 2.0.....	136
91. QR Code Track-and-Trace System.....	138
92. India–Seychelles Relations.....	140
93. Drug Control in India	142
94. AI Agent Security.....	145
95. Upper Layer NBFC (NBFC-UL) Rules – In News	148
96. Supreme Court Judge Strength Increased Through Ordinance	149
97. India Expands Ethanol Blending Roadmap	152
98. Drone Warfare Reshapes Modern Conflicts	155

Joy and pain

Source: *The Hindu* Editorial

Writer: Editorial Board (*The Hindu*)

UPSC Syllabus Linkage

GS Paper II

- Health Sector Governance
- Welfare Schemes
- Public Service Delivery

GS Paper III

- Human Resource Development
- Social Sector Development
- Inclusive Growth

GS Paper I

- Population and Social Development
- Health Indicators

Essay

- Public Health and Development
- Human Capital and Economic Growth
- Nutrition and Healthcare

Introduction

Public health is a key pillar of human development. A country's economic progress depends not only on GDP growth but also on the health and nutritional status of its population. India has expanded healthcare access through schemes such as the National Health Mission (NHM), Ayushman Bharat and Poshan Abhiyaan. However, health outcomes depend on multiple factors including nutrition, sanitation, preventive healthcare, awareness, healthcare infrastructure and governance. The article analyses India's recent health achievements alongside persistent challenges.

Key Issues

1. Improvement in Health Indicators

- India has witnessed progress in life expectancy, fertility reduction and healthcare access due to sustained public health investments.
- **Example:** Total Fertility Rate (TFR) moving closer to replacement level.

2. Child Malnutrition Remains High

- Despite improvements, undernutrition continues to affect children and threatens long-term human capital formation.
- **Example:** Significant levels of stunting and underweight children reported in NFHS surveys.

3. Rising Burden of Obesity

- India now faces a dual burden of malnutrition and obesity, particularly in urban areas and among adults.
- **Example:** Increasing obesity prevalence among women and men in recent NFHS rounds.

4. Gaps in Public Health Infrastructure

- Healthcare access has improved but quality and availability of services remain uneven across regions.
- **Example:** Differences in healthcare outcomes between developed and aspirational districts.

5. Need for Behavioural Change

Prelims Related Facts

- **National Family Health Survey (NFHS):** Large-scale household survey conducted by the Ministry of Health and Family Welfare.
- **NFHS-5:** Conducted during 2019–21.
- **National Health Mission (NHM):** Launched in 2013 by subsuming NRHM and NUHM.
- **Poshan Abhiyaan:** Launched in 2018 to improve nutritional outcomes.
- **Sustainable Development Goal (SDG)-3:** Good Health and Well-being.
- **Sample Registration System (SRS):** Provides fertility and mortality indicators.
- **Ayushman Bharat:** World's largest government-funded health assurance programme.



- Health outcomes depend not only on medical services but also on citizen behaviour regarding nutrition, hygiene and lifestyle.
- **Example:** Growing incidence of lifestyle diseases linked to unhealthy diets and inactivity.

Global Practices

Finland	Strong emphasis on preventive healthcare and community-based interventions.
Japan	Focus on healthy ageing, nutrition awareness and universal healthcare coverage.
United Kingdom	National Health Service integrates preventive and curative healthcare services.
Thailand	Achieved broad healthcare access through Universal Health Coverage reforms.
Brazil	Community health worker model improves outreach in vulnerable populations.

Indian Committees / Recommendations

Bhore Committee (1946)	Recommended comprehensive public healthcare and primary health centres.
High-Level Expert Group (HLEG) on Universal Health Coverage	Suggested equitable and affordable healthcare access for all citizens.
National Health Policy, 2017	Emphasised preventive healthcare and increased public health expenditure.
NITI Aayog Health Recommendations	Advocated outcome-based monitoring and strengthening primary healthcare.
Fifteenth Finance Commission	Recommended greater investment in health infrastructure and local health systems.

Way Forward

- 1. Strengthen Primary Healthcare**
 - Invest more in Health and Wellness Centres to improve early diagnosis, preventive care and treatment accessibility in rural and urban areas.
- 2. Focus on Nutrition Security**
 - Integrate nutrition, sanitation, maternal health and food security programmes to address child stunting, wasting and micronutrient deficiencies.
- 3. Promote Healthy Lifestyles**
 - Large-scale awareness campaigns should encourage balanced diets, physical activity and reduction of tobacco and alcohol consumption.
- 4. Improve Health Data Systems**
 - Use real-time health monitoring, digital health records and evidence-based policymaking for targeted interventions and resource allocation.
- 5. Enhance State-Level Capacity**
 - States should strengthen healthcare workforce, infrastructure and service delivery mechanisms to reduce regional disparities in health outcomes.

Practice Question

Q1. Consider the following statements regarding the National Family Health Survey (NFHS):

1. NFHS is conducted under the Ministry of Health and Family Welfare.
2. NFHS collects data related to nutrition, fertility and health indicators.

3. NFHS is conducted annually across all States and Union Territories.

Which of the statements given above are correct?

- (A) 1 and 2 only
- (B) 2 and 3 only
- (C) 1 and 3 only
- (D) 1, 2 and 3

Answer: (A) 1 and 2 only

UPSC Mains Practice Question

Q2. India has made notable gains in health indicators over the past two decades, yet significant public health challenges remain. Discuss the major health concerns facing India and suggest measures to improve health outcomes. (250 words).

IMEC is caught between commerce and geopolitics

Source: *The Hindu* Opinion Article

Writer: Rajeev Agarwal

UPSC Syllabus Linkage

GS Paper II

- International Relations
- India and West Asia
- Regional and Global Groupings

GS Paper III

- Infrastructure
- Logistics and Connectivity
- Energy Security
- Economic Development

Essay

- Connectivity and Geopolitics
- Trade Corridors and Strategic Competition
- India's Emerging Global Role

Introduction

Economic corridors are large-scale connectivity projects designed to improve trade, logistics, energy transport and regional integration. In recent decades, projects such as China's Belt and Road Initiative (BRI), the International North-South Transport Corridor (INSTC), and the India-Middle East-Europe Economic Corridor (IMEC) have emerged as instruments of both economic cooperation and geopolitical influence.

The article discusses how the Iran-Israel conflict and instability in West Asia have exposed the strategic vulnerabilities of IMEC, a flagship connectivity initiative linking India, the Middle East and Europe.

Prelims Related Facts

1. **IMEC (India-Middle East-Europe Economic Corridor)** was announced during the **G20 Summit, New Delhi (2023)**.
2. IMEC aims to connect **India-UAE-Saudi Arabia-Jordan-Israel-Europe**.
3. It consists of:
 - **Eastern Corridor:** India to Gulf region.
 - **Northern Corridor:** Gulf region to Europe.
4. Includes railways, ports, digital connectivity and energy infrastructure.
5. **INSTC (International North-South Transport Corridor)** connects India with Russia and Central Asia through Iran.
6. **Suez Canal** handles nearly 12% of global trade.
7. **Strait of Hormuz** is among the world's most important oil transit chokepoints.

Key Issues

1. Geopolitical Instability Threatens Connectivity

- Regional conflicts can disrupt trade corridors and reduce investor confidence in long-term infrastructure projects.
- **Example:** Iran-Israel tensions affecting transport routes across West Asia.

2. Dependence on Strategic Chokepoints

- Global trade remains vulnerable to disruptions at critical maritime passages.
- **Example:** Red Sea attacks and disruptions near the Suez Canal impacting shipping costs.

3. IMEC's Economic Promise Faces Security Risks

- While IMEC promises faster trade and logistics integration, regional security concerns may delay implementation.
- **Example:** Uncertainty around port connectivity involving Israel-linked routes.

4. Competition Among Connectivity Corridors

- Major powers increasingly use infrastructure projects as tools of strategic influence.
- **Example:** IMEC competing with China's Belt and Road Initiative (BRI).

5. Energy Security Concerns

- West Asia remains central to global energy supplies, making stability essential for corridor success.
- **Example:** Risks to oil and LNG flows through the Strait of Hormuz.

Global Practices

European TEN-T Network	Integrated transport corridors connecting ports, railways and highways across Europe.
China's Belt and Road Initiative (BRI)	Large-scale infrastructure and connectivity programme linking Asia, Europe and Africa.
ASEAN Connectivity Master Plan	Focuses on regional transport, digital and energy integration.
Trans-European Energy Networks	Cross-border energy infrastructure ensuring diversification and resilience.
North American Trade Corridors	Integrated logistics systems supporting seamless movement of goods and services.

Indian Committees / Policy Recommendations

PM Gati Shakti National Master Plan	Promotes integrated infrastructure planning and multimodal connectivity.
National Logistics Policy (2022)	Aims to reduce logistics costs and improve supply chain efficiency.
NITI Aayog Infrastructure Recommendations	Supports multimodal transport and trade facilitation measures.
Sagarmala Programme	Focuses on port-led development and maritime connectivity.
Bharatmala Pariyojana	Strengthens economic corridors and freight transportation networks.

Way Forward

1. Diversify Trade Routes

- India should reduce dependence on a single corridor by strengthening IMEC, INSTC and alternative maritime connectivity networks simultaneously.

2. Enhance Regional Diplomacy

- Sustained engagement with West Asian countries is necessary to reduce geopolitical risks affecting trade and infrastructure projects.

3. Strengthen Maritime Security

- Cooperation in naval surveillance, intelligence sharing and maritime domain awareness can protect critical trade routes and energy supplies.

4. Build Resilient Supply Chains

- Investment in multimodal logistics, ports and digital infrastructure can reduce disruptions arising from regional conflicts.

5. Accelerate Corridor Implementation

- Timely execution of connectivity projects will improve investor confidence and enhance India's role in global trade networks.

Practice Question

Q1. Consider the following statements regarding the India-Middle East-Europe Economic Corridor (IMEC):

1. IMEC was announced during the G20 Summit held in New Delhi in 2023.
2. The corridor seeks to connect India with Europe through West Asia.
3. Iran is a formal participant in the IMEC framework.

Which of the statements given above are correct?

- (A) 1 and 2 only
(B) 2 and 3 only
(C) 1 and 3 only
(D) 1, 2 and 3

Answer:

- (A) 1 and 2 only

UPSC Mains Practice Question

Q2. The India-Middle East-Europe Economic Corridor (IMEC) is both an economic initiative and a geopolitical project. Examine the opportunities and challenges associated with IMEC in the context of emerging strategic competition and instability in West Asia. (250 words).

“Dear Gen Z, join the system. Change happens in mundane politics”

UPSC Syllabus Linkage**GS Paper II**

- Parliament and State Legislatures
- Representation of People's Act
- Pressure Groups and Civil Society
- Role of Youth in Democracy
- Democratic Accountability and Governance

GS Paper IV

- Citizen Participation
- Public Service Values
- Ethical Leadership and Civic Responsibility

Essay

- Youth and Nation Building
- Democracy and Political Participation
- Social Media and Political Behaviour

Introduction

Democracy is not limited to voting once every few years. It is a continuous process where citizens participate through elections, public discussions, local governance, civil society groups, petitions and policy engagement. Political change becomes sustainable when people work through institutions rather than relying only on protests or social media campaigns.

Key Issues

1. Growing Youth Disillusionment

- Many young people feel disconnected from institutions due to unemployment, rising living costs and limited opportunities.
- **Example:** Online campaigns expressing frustration often gain massive support among unemployed graduates.

2. Social Media as a Substitute for Political Participation

- Digital activism creates visibility but may not always produce policy outcomes unless supported by institutional engagement.
- **Example:** Trending hashtags often disappear without translating into legislative or administrative action.

3. Weak Engagement with Democratic Institutions

- Youth participation in local governance, public consultations and political processes remains limited.
- **Example:** Low attendance in ward meetings despite active online political discussions.

4. Narrative Politics Over Policy Politics

- Political communication increasingly focuses on emotions and slogans rather than detailed policy debates.
- **Example:** Viral political content often receives more attention than discussions on budgets or governance reforms.

5. Declining Trust in Traditional Political Structures

- A section of youth perceives institutions as ineffective, reducing willingness to engage constructively.
- **Example:** Growing preference for outsider movements instead of participation within democratic institutions.

Prelims Related Facts

- **Article 326:** Provides for elections based on universal adult suffrage.
- **Election Commission of India (ECI)** conducts free and fair elections.
- **73rd Constitutional Amendment (1992)** established Panchayati Raj Institutions.
- **74th Constitutional Amendment (1992)** strengthened Urban Local Bodies.
- **Right to Information Act, 2005** promotes transparency and citizen participation.
- India has one of the world's largest youth populations, making youth participation crucial for democracy.

Global Best Practices

Finland	Youth councils are formally integrated into local government decision-making.
Germany	Political education is introduced early through schools and civic training programmes.
Switzerland	Frequent referendums encourage continuous citizen participation.
New Zealand	Government departments actively consult youth before major policy decisions.
Canada	Student parliaments and youth advisory bodies help bridge governance gaps.

Important Indian Committee Recommendations

National Commission to Review the Working of the Constitution (NCRWC), 2002	Recommended strengthening citizen participation and democratic accountability.
Second Administrative Reforms Commission (ARC)	Emphasised participatory governance and citizen-centric administration.
Punchhi Commission	Suggested strengthening local institutions and decentralised governance.
Law Commission Reports on Electoral Reforms	Recommended greater transparency and political participation.
Committee on Electoral Reforms	Advocated measures to improve voter awareness and democratic engagement.

Way Forward

1. Strengthen Civic Education

- Schools and colleges should teach practical democratic participation beyond textbook knowledge.

2. Promote Youth Leadership

- Political parties should create structured pathways for young leaders at local levels.

3. Encourage Local Participation

- Youth should actively engage in Panchayats, municipalities and resident welfare associations.

4. Improve Institutional Responsiveness

- Governments must address citizen grievances quickly to rebuild public trust.

5. Combine Digital and Ground Action

Online awareness should be linked with petitions, consultations and electoral participation for meaningful outcomes.

Practice Question

Q1. Consider the following statements:

1. The Right to Information Act promotes citizen participation in governance.
2. The 73rd Constitutional Amendment relates to Panchayati Raj Institutions.
3. Universal Adult Suffrage is provided under Article 326 of the Constitution.

Which of the statements given above is/are correct?

- (A) 1 and 2 only (B) 2 and 3 only
(C) 1 and 3 only (D) 1, 2 and 3

Answer: (D) 1, 2 and 3

UPSC Mains Practice Question

Q2. "Democratic change becomes sustainable only when citizen participation moves beyond protest and enters institutional politics." Discuss the role of youth participation in strengthening India's democratic governance. (250 words)

"India, Myanmar and a shifting balance"

UPSC Syllabus Linkage

GS Paper II

- India and its Neighbourhood Relations
- Bilateral, Regional and Global Groupings
- India's Foreign Policy

Essay

- Neighbourhood First Policy
- India and Southeast Asia
- Geopolitics and National Security

- Internal Security and Border Management

GS Paper III

- Security Challenges in Border Areas
- Cross-Border Migration
- Left-Wing Extremism and Insurgency
- Role of External State and Non-State Actors

Introduction

Neighbourhood diplomacy is a core pillar of India's foreign policy. Stable and cooperative relations with neighbouring countries are essential for national security, border management, regional connectivity, trade and economic growth. India's **Neighbourhood First Policy** and **Act East Policy** place special emphasis on maintaining stability in Myanmar due to its strategic location connecting South Asia and Southeast Asia.

Key Issues**1. Political Instability in Myanmar**

- Military rule and prolonged civil conflict continue to weaken governance structures and create uncertainty.
- **Example:** The 2021 military takeover triggered widespread resistance and prolonged armed conflict.

2. Security Challenges Along India's Border

- Instability in Myanmar directly affects India's northeastern states through illegal movement, insurgent activities and security concerns.
- **Example:** Armed groups operating near the India-Myanmar border complicate border management.

3. Rising Chinese Influence

- China continues expanding economic, political and strategic influence in Myanmar amid political instability.
- **Example:** Chinese investments in infrastructure and connectivity projects have increased substantially.

4. Refugee and Humanitarian Concerns

- Conflict has displaced thousands of civilians, many seeking shelter in India's northeastern states.
- **Example:** Refugees from Myanmar have entered Mizoram following clashes between military forces and resistance groups.

5. Impact on India's Act East Policy

- Continued instability threatens regional connectivity and economic integration initiatives.
- **Example:** Delays in the Kaladan Project and Trilateral Highway reduce the effectiveness of regional connectivity goals.

Prelims Related Facts

- **India-Myanmar Border Length:** Approximately **1,643 km**.
- Border passes through **Arunachal Pradesh, Nagaland, Manipur and Mizoram**.
- Myanmar is India's only ASEAN neighbour sharing a land border.
- **Kaladan Multi-Modal Transit Transport Project** connects Kolkata to Sittwe Port in Myanmar.
- **India-Myanmar-Thailand Trilateral Highway** aims to enhance connectivity with Southeast Asia.
- Myanmar became independent from Britain in **1948**.
- ASEAN comprises **10 member countries** and Myanmar joined in **1997**.

Global Best Practices

European Union	Combines humanitarian assistance with diplomatic engagement during regional conflicts.
ASEAN	Promotes dialogue, consensus-building and peaceful conflict resolution among member states.
Norway	Uses sustained mediation and peace-building mechanisms in conflict-prone regions.
Japan	Employs development assistance alongside strategic diplomacy to build stability.
United Nations	Supports humanitarian relief, refugee protection and conflict resolution frameworks.

Important Indian Committees / Policy Recommendations

Madhav Godbole Committee on Internal Security	Emphasised better coordination in border management and internal security.
Task Force on Border Management (Madhukar Gupta Committee)	Recommended integrated border management systems and enhanced infrastructure.
Second Administrative Reforms Commission	Suggested strengthening coordination between security and development policies.
Committee on National Security System (Kargil Review Follow-up Reforms)	Recommended institutional strengthening for external and internal security challenges.
Act East Policy Framework	Focuses on connectivity, trade, cultural engagement and strategic partnerships with Southeast Asia.

Way Forward

- Maintain Balanced Engagement**
 - India should continue engagement with all stakeholders while protecting its strategic and security interests.
- Strengthen Border Infrastructure**
 - Improve roads, surveillance systems and border management mechanisms in northeastern states.
- Accelerate Connectivity Projects**
 - Complete Kaladan and Trilateral Highway projects to strengthen regional integration.
- Expand Humanitarian Cooperation**
 - Provide humanitarian assistance while ensuring effective refugee management and security screening.
- Counter Strategic Competition**
 - Deepen economic and developmental cooperation to maintain India's influence in Myanmar.

Practice Question

Q1. Consider the following statements regarding India–Myanmar relations:

1. Myanmar is the only ASEAN country sharing a land border with India.
2. The Kaladan Multi-Modal Transit Transport Project connects India with Myanmar.
3. Mizoram shares a border with Myanmar.

Which of the statements given above is/are correct?

- (A) 1 and 2 only
- (B) 2 and 3 only
- (C) 1 and 3 only
- (D) 1, 2 and 3

Answer: (D) 1, 2 and 3**UPSC Mains Practice Question**

Q2. "Political instability in Myanmar has significant implications for India's security, connectivity projects and neighbourhood diplomacy." Examine the challenges and suggest measures to safeguard India's strategic interests. (250 words)

"Funding India's climate future, a trillion-dollar question"**UPSC Syllabus Linkage****GS Paper III**

- Environment and Climate Change
- Sustainable Development
- Infrastructure and Energy
- Indian Economy and Resource Mobilisation
- Green Finance and Climate Financing

GS Paper II

- International Climate Agreements
- Global Institutions and Environmental Governance

Essay

- Climate Change and Development
- Green Growth and Sustainable Finance
- India's Net-Zero Transition

Introduction

Climate finance refers to financial resources mobilised from public, private, domestic and international sources to support climate mitigation and adaptation measures. Developing countries require large-scale climate finance to transition towards low-carbon growth while maintaining economic development. The success of climate action increasingly depends on the availability, affordability and accessibility of finance.

Key Issues**1. Massive Climate Investment Requirement**

- India requires enormous capital to achieve climate goals and energy transition targets.
- **Example:** Estimates suggest climate-related investments may require trillions of dollars over coming decades.

2. Financing Gap Remains Large

- Public finances alone cannot meet climate investment needs, making private capital essential.
- **Example:** Renewable energy projects increasingly depend on blended finance and institutional investors.

3. Lack of Clear Green Finance Framework

- Investors need clarity regarding what qualifies as a green investment.
- **Example:** Absence of a comprehensive Green Taxonomy can create uncertainty for investors.

4. Limited Flow of Private Climate Capital**Prelims Related Facts**

- **India's Net Zero Target:** 2070.
- **Panchamrit Commitments** announced at COP26.
- **Nationally Determined Contributions (NDCs)** are commitments made under the Paris Agreement.
- **Paris Agreement** was adopted in 2015 under the UNFCCC.
- **Sovereign Green Bonds (SGrBs)** were first issued by India in 2023.
- **Priority Sector Lending (PSL)** guidelines are issued by the RBI.
- **Climate Investment Funds (CIF)** support climate-related projects globally.
- **Green Taxonomy** classifies environmentally sustainable economic activities.



- Private investors often perceive climate projects as risky, especially adaptation projects.
- **Example:** Coastal resilience and flood-protection projects struggle to attract commercial investment.

5. **Adaptation Finance Receives Less Attention**

- Climate adaptation receives significantly lower funding compared to mitigation projects.
- **Example:** Drought management and flood-resilient infrastructure often face funding shortages.

Global Best Practices

European Union	Developed a detailed EU Green Taxonomy to guide sustainable investments.
United Kingdom	Promotes green bonds and climate disclosure standards for financial institutions.
Japan	Uses blended finance mechanisms to attract private investment into clean technologies.
Singapore	Established sustainable finance frameworks and green finance hubs.
World Bank	Supports climate resilience through concessional finance and risk-sharing instruments.

Important Indian Committees / Policy Recommendations

RBI Climate Risk and Sustainable Finance Framework	Recommends integrating climate risks into financial sector regulation.
Economic Survey Recommendations	Emphasise green growth, energy transition and sustainable infrastructure financing.
Finance Commission Recommendations	Support climate-resilient development and environmental sustainability.
NITI Aayog Green Growth Strategy	Advocates private-sector participation and innovative financing models.
National Action Plan on Climate Change (NAPCC)	Encourages resource mobilisation for climate adaptation and mitigation missions.

Way Forward

1. **Finalise a National Green Taxonomy**
 - A clear classification system will improve investor confidence and reduce uncertainty regarding sustainable investments.
2. **Expand Green Bond Markets**
 - Greater use of sovereign and corporate green bonds can mobilise long-term climate finance.
3. **Promote Blended Finance**
 - Public funds should be used strategically to attract larger volumes of private investment.
4. **Strengthen Climate Risk Disclosure**
 - Financial institutions should assess and disclose climate-related risks more transparently.
5. **Increase Adaptation Financing**
 - Dedicated funding mechanisms should support climate-resilient agriculture, water security and disaster-resilient infrastructure.

Practice Question

Q1. Consider the following statements:

1. Nationally Determined Contributions (NDCs) are submitted under the Paris Agreement.
2. Sovereign Green Bonds are issued to raise funds for environmentally sustainable projects.
3. Climate finance includes both mitigation and adaptation funding.

Which of the statements given above is/are correct?

(A) 1 and 2 only

(B) 2 and 3 only

(C) 1 and 3 only

(D) 1, 2 and 3

Answer: (D) 1, 2 and 3

UPSC Mains Practice Question

Q2. "Achieving India's climate commitments is increasingly a finance challenge rather than a technology challenge." Discuss the importance of climate finance in India's green transition and examine the measures required to bridge the financing gap. (250 words)

"Fire and furore"

UPSC Syllabus Linkage

GS Paper III

- Disaster Management
- Urban Governance and Planning
- Public Safety and Risk Reduction
- Infrastructure and Building Regulations

GS Paper II

- Role of Local Bodies
- Governance and Accountability
- Public Administration and Regulatory Frameworks

Essay

- Urbanisation and Public Safety
- Governance Failures and Human Tragedies
- Disaster Prevention vs Disaster Response

Introduction

Urban fire safety is an important component of disaster management. Rapid urbanisation, unauthorized constructions, weak enforcement of safety norms and poor compliance with building regulations increase the risk of fire-related disasters. Modern disaster management emphasizes prevention, preparedness, mitigation and accountability rather than merely responding after accidents occur.

Key Issues

1. Poor Enforcement of Fire Safety Norms

- Safety regulations often exist on paper but enforcement remains weak, increasing disaster risks.
- **Example:** Commercial establishments operating without adequate fire exits or emergency evacuation systems.

2. Unauthorized Construction and Land-Use Violations

- Illegal modifications frequently compromise safety standards in urban buildings.

Prelims Related Facts

- **Disaster Management Act, 2005** provides the legal framework for disaster management in India.
- **National Disaster Management Authority (NDMA)** is chaired by the Prime Minister.
- **State Disaster Management Authority (SDMA)** is headed by the Chief Minister.
- **National Building Code (NBC)** lays down fire and life safety standards for buildings.
- Fire services are primarily a **State Subject**.
- Urban Local Bodies (ULBs) are responsible for enforcing many building and safety regulations.
- **Article 243W** empowers municipalities regarding urban planning and public health functions.

- **Example:** Conversion of approved spaces into commercial rooms without obtaining regulatory clearance.

3. Accountability Deficit Among Authorities

- Multiple agencies share responsibility, resulting in weak enforcement and limited accountability.
- **Example:** Municipal authorities, fire departments and licensing bodies often fail to coordinate effectively.

4. Rapid Urbanisation and High-Risk Infrastructure

- Growing urban density places greater pressure on safety systems and emergency preparedness.
- **Example:** Congested commercial areas hinder evacuation and emergency response during fires.

5. Reactive Rather Than Preventive Governance

- Administrative action often intensifies only after major accidents occur.
- **Example:** Safety inspections becoming stricter immediately following fatal fire incidents.

Global Best Practices

Japan	Regular fire drills, strict building safety audits and community preparedness programmes.
Singapore	Technology-based fire monitoring systems and rigorous compliance inspections.
United Kingdom	Periodic independent fire safety certification for commercial buildings.
United States	Mandatory emergency exits, occupancy limits and strict penalties for violations.
Australia	Risk-based fire safety assessments integrated into urban planning regulations.

Important Indian Committees / Policy Recommendations

National Disaster Management Authority (NDMA) Guidelines	Recommend periodic fire audits, evacuation plans and emergency preparedness.
Second Administrative Reforms Commission (ARC)	Emphasised accountability and coordination among regulatory agencies.
High Powered Committee on Disaster Management	Recommended stronger disaster mitigation and risk-reduction measures.
National Building Code (NBC) Provisions	Mandate fire safety standards for different categories of buildings.
Standing Committee Recommendations on Urban Development	Advocated stronger monitoring of building permissions and land-use compliance.

Way Forward

1. Strengthen Fire Safety Audits

- Regular independent inspections should be mandatory for commercial and public buildings.

2. Ensure Strict Accountability

- Officials responsible for approving unsafe structures must face administrative and legal consequences.

3. Use Technology for Monitoring

- Digital compliance systems can identify violations before they become major safety hazards.

4. Improve Urban Planning Standards

- Building permissions should align with fire safety, evacuation and emergency response requirements.

5. Promote Public Awareness

- Occupants and businesses should receive periodic training on fire prevention and evacuation procedures.

Practice Question

Q1. Consider the following statements:

1. The National Disaster Management Authority is chaired by the Prime Minister.
2. Fire services are included in the Union List of the Constitution.
3. The National Building Code contains provisions related to fire safety.

Which of the statements given above is/are correct?

- (A) 1 only (B) 1 and 3 only
(C) 2 and 3 only (D) 1, 2 and 3

Answer: (B) 1 and 3 only

(Statement 2 is incorrect because fire services primarily fall under the State domain.)

UPSC Mains Practice Question

Q2. "Urban fire disasters in India are often the result of governance failures rather than accidental events alone." Examine the structural causes behind recurring fire incidents and suggest measures to strengthen urban fire safety management. (250 words)

"Why did SC back curbs on online gaming?"

UPSC Syllabus Linkage (Brief)

GS Paper II

- Judiciary and Judicial Review
- Centre–State Legislative Relations
- Constitutional Provisions
- Regulation of Emerging Technologies

GS Paper III

- Digital Economy
- Cyber Security and Emerging Technologies
- Taxation and Economic Policies
- Gaming and Digital Industry Regulation

Essay

- Technology and Governance
- Balancing Innovation and Regulation
- Digital Economy in India

Introduction

Online gaming has emerged as one of India's fastest-growing digital industries. It includes games of skill and games of chance, raising legal and regulatory challenges regarding taxation, consumer protection, betting, addiction, and public order. The Constitution distributes legislative powers between the Union and States, making the regulation of online gaming a complex legal issue.

Key Issues

1. Distinction Between Games of Skill and Chance

- Indian courts have traditionally differentiated skill-based games from gambling activities.
- **Example:** Horse racing and fantasy sports have received judicial recognition as skill-based activities in certain cases.

2. Centre-State Legislative Conflict

- Regulating online gaming involves overlapping constitutional powers of the Union and States.

- **Example:** States regulate betting while digital platforms operate across state boundaries.

3. Taxation Challenges

- Determining the taxable value of online gaming transactions remains a contentious issue.
- **Example:** GST on online gaming has led to disputes regarding valuation and revenue implications.

4. Consumer Protection Concerns

- Online gaming raises concerns regarding addiction, financial losses and protection of vulnerable users.

- **Example:** Young users may engage in excessive spending through gaming applications.

5. Need for Balanced Regulation

- Excessive restrictions may affect innovation, while weak regulation may encourage illegal betting activities.
- **Example:** Several countries regulate gaming through licensing rather than outright prohibitions.

Prelims Related Facts

- **Article 246** distributes legislative powers between the Union and States.
- **Seventh Schedule** contains the Union, State and Concurrent Lists.
- **Entry 34, State List:** Betting and gambling.
- **Entry 31, Union List:** Telecommunications and related communication services.
- **GST Council** is constituted under **Article 279A**.
- **Goods and Services Tax (GST)** was introduced through the **101st Constitutional Amendment Act, 2016**.
- The **Information Technology Act, 2000** provides a framework for digital governance.
- Online gaming industry in India has witnessed rapid growth through mobile internet penetration.

Global Best Practices

United Kingdom	A licensing framework regulates online gaming while ensuring consumer protection.
Singapore	Strict controls distinguish legal gaming activities from illegal gambling operations.
United States	Gaming regulations differ across states with licensing and taxation mechanisms.
Australia	Consumer safeguards include identity verification and responsible gaming measures.
European Union	Several countries regulate online gaming through transparent licensing systems.

Important Indian Committees / Policy Recommendations

Law Commission of India (276th Report)	Recommended a regulated framework for betting and gambling activities.
GST Council	Works towards a uniform taxation framework for online gaming activities.
MeitY Advisory Framework	Encourages responsible online gaming and user protection measures.
NITI Aayog Discussion Paper	Suggested a balanced regulatory approach for fantasy sports and online gaming.
Parliamentary Standing Committee Recommendations	Highlighted the need for consumer protection and transparent digital regulations.

Way Forward

1. Develop a Uniform Regulatory Framework

- Clear national standards should distinguish skill-based gaming from gambling activities.

2. Strengthen Consumer Protection

- Age verification, spending limits and grievance mechanisms should be mandatory.

3. Clarify Taxation Rules

- A predictable GST structure will reduce litigation and improve compliance.

4. Improve Centre-State Coordination

- Regulatory policies should balance constitutional responsibilities and digital realities.

5. Promote Responsible Gaming

- Awareness campaigns and self-regulatory mechanisms can reduce social harms associated with excessive gaming.

Practice Question

Q1. Consider the following statements:

1. Entry 34 of the State List deals with betting and gambling.
2. The GST Council is constituted under Article 279A of the Constitution.
3. The 101st Constitutional Amendment introduced the Goods and Services Tax (GST).

Which of the statements given above is/are correct?

- (A) 1 and 2 only (B) 2 and 3 only
(C) 1 and 3 only (D) 1, 2 and 3

Answer: (D) 1, 2 and 3

UPSC Mains Practice Question

Q2. "The rapid growth of online gaming in India has created new legal, economic and social challenges. Discuss the constitutional issues involved in regulating online gaming and suggest a balanced regulatory framework for the sector." (250 words)

Equality of treatment for Persons with Disabilities

Source: *The Hindu Editorial*

Writer: **Sushil Kumar** (Former Secretary, Government of India, and Advocate in the Supreme Court and High Court)

UPSC Syllabus Linkage

GS Paper II

- Welfare schemes for vulnerable sections.
- Rights of Persons with Disabilities (RPwD Act, 2016).
- Social justice and inclusive governance.
- Issues relating to poverty and human development.

GS Paper III

- Inclusive growth and social sector development.
- Human resource development.

Essay

- Inclusive development.
- Social justice and dignity.

Introduction

Disability rights have evolved from a charity-based approach to a rights-based approach. The Constitution guarantees equality, dignity and social justice for all citizens.

India enacted the **Rights of Persons with Disabilities (RPwD) Act, 2016**, aligning domestic law with the **UN Convention on the Rights of Persons with Disabilities (UNCPRD)**. However, disability pensions and welfare benefits remain fragmented across States, creating unequal treatment.

Key Issues

1. Unequal Disability Pension Across States

- Different States provide different pension amounts, leading to inequality.
- **Example:** Some States provide less than ₹500 monthly while others offer significantly higher assistance.

2. Fragmented Welfare Architecture

- Various ministries administer disability schemes without proper coordination.
- **Example:** Pension, education support and employment benefits often operate independently.

3. Economic Exclusion of PwDs

- Lack of social security reduces labour participation and increases poverty risks.
- **Example:** Families often withdraw disabled members from education or employment.

4. Constitutional Promise Remains Incomplete

- Equality and dignity require minimum social protection, but current arrangements vary widely.
- **Example:** Access to benefits depends more on residence than disability status.

5. Need for National Uniform Standards

- A minimum national disability pension can reduce interstate disparities.
- **Example:** Similar nationwide frameworks exist for food security and MGNREGS.

Prelims Related Facts

- **Census 2011:** 2.68 crore Persons with Disabilities (PwDs).
- **RPwD Act, 2016:** Recognises 21 categories of disabilities.
- **Article 41:** Public assistance in cases of disability.
- **Article 14:** Equality before law.
- **Article 21:** Right to life with dignity.
- **Article 46:** Protection of weaker sections.
- India ratified the **UNCPRD in 2007**.
- SDGs Goal 10 focuses on reducing inequalities.

Global Best Practices

South Africa	Provides disability grants through a nationally administered social security system.
Australia	National Disability Insurance Scheme (NDIS) offers personalised support services.
Brazil	Benefício de Prestação Continuada guarantees minimum income support.
New Zealand	Integrated disability support with healthcare and social welfare.
Ireland	Combines disability income support with employment assistance programmes.

Indian Committee/Policy Recommendations

National Policy for Persons with Disabilities	Calls for equal opportunities and social security expansion.
RPwD Act, 2016	Promotes equality, accessibility and independent living.
Accessible India Campaign	Improves accessibility in public infrastructure and services.
Unique Disability ID (UDID)	Creates a national database for better policy targeting.
National Action Plan under UNCPRD	Encourages inclusive education, employment and social protection.

Way Forward

1. National Minimum Pension

- Introduce a uniform disability pension floor across India ensuring basic social security.

2. Single National Authority



- Coordinate disability welfare programmes through one integrated institutional mechanism.
- 3. **Portable Benefits**
 - Allow beneficiaries to receive welfare support across States without administrative barriers.
- 4. **Digital Integration**
 - Link UDID with pension, healthcare and employment schemes for seamless delivery.
- 5. **Promote Economic Inclusion**
 - Expand skill development, entrepreneurship and reservation-based employment opportunities.

UPSC Prelims Practice Question

Q1. Consider the following statements regarding disability rights in India:

1. The RPWD Act, 2016 recognises 21 categories of disabilities.
2. India is a signatory to the UN Convention on the Rights of Persons with Disabilities.
3. Article 41 directs the State to provide public assistance in cases of disability.

Which of the above statements is/are correct?

- A. 1 and 2 only
- B. 2 and 3 only
- C. 1 and 3 only
- D. 1, 2 and 3

Answer:

- D. 1, 2 and 3

UPSC GS-II Mains Practice Question

Q2. "India's commitment to inclusive growth requires moving from a charity-based approach to a rights-based framework for persons with disabilities. Discuss the need for a uniform social security architecture for Persons with Disabilities in India." (250 words, 15 Marks)

The 8th CPC — a chance to reform pay commissions

Source: *The Hindu Editorial*

Writer: Prem Kumar Nair (Retired Indian Army officer, with an interest in governance architecture and systems)

UPSC Syllabus Linkage

GS Paper II

- Governance and public administration.
- Civil services and public institutions.
- Transparency and accountability.
- Centre-State fiscal relations.

GS Paper III

- Government budgeting.
- Fiscal sustainability.
- Public finance and resource mobilisation.

Essay

- Good Governance and Public Service.
- Fiscal Responsibility and Welfare.
- Reforming Public Institutions.

Introduction

A **Pay Commission** is a government-appointed body that reviews and recommends changes in the salary, pension, allowances and service conditions of Central Government employees and pensioners.

Since Independence, India has constituted seven Central Pay Commissions. The proposed **8th Central Pay Commission (CPC)** provides an opportunity to move beyond periodic salary revision towards a transparent, equitable and fiscally sustainable compensation framework.

Key Issues

1. Pay Commissions Need Structural Reform

- Pay Commissions should assess responsibility, skills and risks rather than merely revise salaries.
- **Example:** Different services often receive comparable benefits despite differing career structures.

2. Lack of Common Evaluation Standards

- There is no uniform framework for comparing technical complexity, accountability and hardship across services.
- **Example:** Civil and defence services follow different career progression models.

3. Non-Functional Upgradation (NFU) Debate

- Automatic financial progression without matching responsibilities raises questions about equity and efficiency.
- **Example:** Higher pay may not always reflect increased administrative accountability.

4. Pension Sustainability Challenge

- Multiple pension systems increase fiscal pressure and create inter-generational equity concerns.
- **Example:** Legacy pensions and newer contributory schemes coexist.

5. Need for Transparent Compensation Architecture

- Public trust depends on objective and clearly explained compensation policies.
- **Example:** Independent review mechanisms can improve fairness and credibility.

Prelims Related Facts

- First Central Pay Commission: **1946**.
- Seven CPCs have been constituted so far.
- The **7th CPC** was implemented from **1 January 2016**.
- Pay Commissions are executive bodies, not constitutional bodies.
- Recommendations cover:
 - Salaries
 - Pensions
 - Allowances
 - Defence personnel
 - Civil servants
- Pension expenditure forms a significant component of government revenue spending.
- Finance Commission and Pay Commission are distinct institutions.

Global Best Practices

United Kingdom	Independent Pay Review Bodies periodically recommend public sector salaries.
Australia	Remuneration Tribunals determine compensation for public officials.
Singapore	Public salaries are benchmarked with market indicators while maintaining accountability.
Canada	Regular compensation reviews balance fiscal prudence with public service efficiency.
New Zealand	Independent authorities periodically assess public sector remuneration structures.

Indian Committee/Policy Recommendations

7th Central Pay Commission	Recommended rationalisation of pay structure and allowances.
National Pension System (NPS)	Introduced contributory pension architecture for fiscal sustainability.
Non-Functional Upgradation (NFU)	Introduced career progression benefits for certain services.
Fiscal Responsibility Framework	Emphasises balancing employee welfare with fiscal discipline.

Administrative Initiatives	Reforms	Promote performance orientation, transparency and institutional accountability.
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Way Forward

- Create Permanent Compensation Authority**
 - A specialised institution should periodically review salaries instead of relying solely on decade-long commissions.
- Develop Objective Evaluation Metrics**
 - Compensation should reflect responsibility, expertise, hardship and institutional accountability.
- Ensure Fiscal Sustainability**
 - Salary and pension reforms should balance employee welfare with long-term public finances.
- Improve Transparency**
 - Clear criteria for salary, allowances and promotions should strengthen public confidence.
- Harmonise Service Structures**
 - Maintain flexibility for different services while ensuring fairness and institutional coherence.

UPSC Prelims Practice Question

Q1. Consider the following statements regarding the Central Pay Commission:

- The Central Pay Commission is a constitutional body.
- The 7th Central Pay Commission came into effect from 1 January 2016.
- The Central Pay Commission makes recommendations regarding salaries, pensions and allowances of Central Government employees.

Which of the statements given above is/are correct?

- A. 2 only B. 2 and 3 only
C. 1 and 3 only D. 1, 2 and 3

Answer: B. 2 and 3 only

Explanation:

Statement 1 is incorrect because the Central Pay Commission is an executive body constituted by the Government of India.

UPSC GS-II Mains Practice Question

Q2. "The proposed 8th Central Pay Commission should move beyond periodic wage revision and establish a transparent, equitable and fiscally sustainable public compensation framework." Discuss. (15 Marks, 250 Words)

India-France Relations Latest News: Special Global Strategic Partnership

Source: India-France Summit at Nice, France (2026)

Key Leaders: Prime Minister of India and French President Emmanuel Macron

UPSC Syllabus Linkage

GS Paper II

- India and its bilateral relations.
- International treaties and agreements.
- Groupings involving India and global governance.

GS Paper III

- Defence technology.

Essay

- India's strategic autonomy.
- Technology diplomacy.
- Multi-alignment in foreign policy.

- Space technology.
- Critical minerals and energy security.
- Artificial Intelligence and emerging technologies.

Prelims

- India-France military exercises.
- ISRO-CNES cooperation.
- International Solar Alliance.
- India-EU relations.
- UPI internationalisation.

Introduction

India and France share one of India's strongest strategic partnerships. Diplomatic relations began in **1947** and were elevated to a **Strategic Partnership in 1998**, the first such partnership between India and a Western country.

The recent elevation to a **Special Global Strategic Partnership** reflects expanding cooperation beyond defence into trade, technology, AI, space, climate action, education and Indo-Pacific security.

Key Issues**1. Partnership Moving Beyond Defence**

- India-France ties now cover technology, AI, trade and energy alongside traditional defence cooperation.
- **Example:** Innovation Roadmap 2030 and Joint AI Working Group.

2. Building Strategic Economic Security

- Supply chain resilience and critical mineral partnerships reduce dependence on vulnerable global networks.
- **Example:** Economic Security Dialogue focusing on aviation and rare minerals.

3. Defence Co-development Model

- The relationship is shifting from simple procurement to joint manufacturing.
- **Example:** H125 Helicopter Final Assembly Line in Karnataka.

4. Cooperation in Future Technologies

- Emerging technologies are becoming the new pillar of bilateral engagement.
- **Example:** Collaboration in semiconductors, deep-tech, space and ethical AI.

5. Supporting India's Global Role

- France consistently supports India's greater participation in international governance.
- **Example:** Support for India's G7 engagement and UNSC reform aspirations.

Prelims Related Facts

- Diplomatic relations: **1947**
- Strategic Partnership: **1998**
- Horizon 2047 Roadmap launched in 2023.
- France is India's **3rd largest EU trading partner**.
- Bilateral trade: Around **\$16 billion (2025-26)**.
- Target trade: **\$32 billion in five years**.
- Major exercises:
 - SHAKTI (Army)
 - GARUDA (Air Force)
 - VARUNA (Navy)
- Space agencies:
 - ISRO
 - CNES
- France is a founding member of:
 - International Solar Alliance (ISA)
- India-France Year of Innovation: 2026.

Global Best Practices

Technology Alliances	Countries increasingly collaborate on AI, semiconductors and strategic technologies.
Defence Industrial Partnerships	Joint production reduces import dependence and strengthens domestic industries.
Supply Chain Diversification	Trusted partners cooperate to secure critical minerals and strategic goods.
Space Collaboration	Government agencies increasingly involve private industries in space missions.
Innovation Ecosystems	Universities, startups and industries jointly promote research and commercialisation.

Indian Policies and Institutional Initiatives

Horizon 2047 Roadmap	Long-term strategic framework for India-France relations.
Atmanirbhar Bharat in Defence	Encourages co-development and indigenous manufacturing.
National Education Policy 2020	Facilitates foreign university campuses and academic exchanges.
India Semiconductor Mission	Supports technology partnerships and supply-chain resilience.
National AI Mission	Promotes responsible AI and international collaboration.

Way Forward

- Deepen Trade Integration**
 - Fast-track India-EU FTA negotiations to achieve ambitious trade targets.
- Expand Technology Partnerships**
 - Strengthen cooperation in AI, semiconductors, quantum technologies and cybersecurity.
- Increase Defence Manufacturing**
 - Promote joint design and production under Make in India initiatives.
- Enhance People-to-People Ties**
 - Expand educational exchanges, research partnerships and skilled mobility programmes.
- Strengthen Indo-Pacific Cooperation**
 - Coordinate maritime security, supply chains and regional stability initiatives.

UPSC Prelims Practice Question

Q1. Consider the following statements regarding India-France relations:

1. France was India's first Strategic Partner among Western nations.
2. Exercise VARUNA is a bilateral naval exercise between India and France.
3. ISRO and CNES cooperate in the field of space technology.

Which of the statements given above is/are correct?

- A. 1 and 2 only B. 2 and 3 only
C. 1 and 3 only D. 1, 2 and 3

Answer: D. 1, 2 and 3

UPSC GS-II Mains Practice Question

Q2. "The India-France Special Global Strategic Partnership reflects India's evolving approach of strategic autonomy and multi-alignment in global affairs." Examine the significance of the partnership in the context of defence, technology, economic security and Indo-Pacific geopolitics. (15 Marks, 250 Words)

The hidden history of the Thai-Bharat connection

Source: *The Hindu Editorial*

Writer: **Shashi Tharoor** (Fourth-term Member of Parliament, former Union Minister of State for External Affairs)

UPSC Syllabus Linkage

GS Paper II

- India and its neighbourhood relations.
- Bilateral and regional groupings.
- India's cultural diplomacy and Act East Policy.

GS Paper I

- Modern Indian History.
- Indian National Movement.
- Role of overseas Indians in the freedom struggle.

GS Paper III

- Soft power diplomacy.
- Connectivity and strategic partnerships.

Essay

- Civilisational links in diplomacy.
- India's cultural heritage and foreign policy.

Introduction

India and Thailand share centuries-old civilisational ties rooted in Buddhism, trade, maritime contacts and cultural exchanges. Beyond these traditional connections, Thailand also played an important role during India's freedom struggle by providing support to the **Indian Independence League (IIL)** and the **Azad Hind Fauj (INA)**.

The article highlights this lesser-known historical partnership and its relevance for present-day India-Thailand relations under India's Act East Policy.

Key Issues

1. Thailand's Role in India's Freedom Movement

- Thailand became an important centre for overseas Indian nationalism during World War II.
- **Example:** Bangkok hosted activities of the Indian Independence League.

2. Overseas Indians Strengthened Nationalism

- The Indian diaspora contributed significantly to India's struggle for independence.
- **Example:** Merchants and workers in Southeast Asia supported INA mobilisation.

3. Indian Independence League Created Organisation

- The IIL provided political coordination among Indian communities across Asia.
- **Example:** Bangkok Conference helped institutionalise the movement.

4. Netaji's Leadership Unified the Movement

- Subhas Chandra Bose transformed scattered efforts into an organised liberation campaign.
- **Example:** The INA worked alongside the IIL for independence.

Prelims Related Facts

- Diplomatic relations: **1947**.
- Thailand is an important partner in India's **Act East Policy**.
- Founder of Azad Hind Fauj:
 - Initially Captain Mohan Singh.
 - Later reorganised by Netaji Subhas Chandra Bose.
- Indian Independence League (IIL):
 - Formed among overseas Indians in Southeast Asia.
- Bangkok Conference:
 - Important milestone for organising the Indian freedom movement abroad.
- Thailand is a member of:
 - BIMSTEC.
 - ASEAN.
 - Mekong-Ganga Cooperation.
- India and Thailand conduct:
 - Exercise MAITREE (Army).
 - Coordinated Patrols (CORPAT).



5. Shared History Strengthens Modern Diplomacy

- Historical connections create strong foundations for contemporary strategic partnerships.
- **Example:** India-Thailand cooperation today extends to trade, security and connectivity.

Global Best Practices

Cultural Diplomacy	Countries preserve historical ties to strengthen modern diplomatic relations.
Diaspora Engagement	Overseas communities contribute to economic and strategic partnerships.
Historical Preservation	Museums and archives protect shared heritage for future generations.
Regional Connectivity	Neighbouring countries develop infrastructure based on historical links.
Educational Exchanges	Academic collaborations deepen mutual understanding between societies.

Indian Policies and Institutional Initiatives

Act East Policy	Strengthens India's engagement with Southeast Asia.
BIMSTEC	Promotes regional cooperation in the Bay of Bengal.
Mekong-Ganga Cooperation	Enhances cultural and economic ties.
India-Thailand Defence Cooperation	Includes Exercise MAITREE and maritime cooperation.
Project MAUSAM	Promotes India's ancient maritime and cultural connections.

Way Forward

1. **Preserve Shared Heritage**
 - Promote research and documentation of India's freedom movement in Southeast Asia.
2. **Expand Cultural Exchanges**
 - Increase academic, tourism and museum collaborations between the two countries.
3. **Strengthen Connectivity**
 - Improve physical and digital connectivity under the Act East Policy.
4. **Enhance Strategic Cooperation**
 - Deepen maritime security and defence partnerships in the Indo-Pacific.
5. **Engage the Diaspora**
 - Leverage Indian communities abroad for economic and cultural cooperation.

UPSC Prelims Practice Question

Q1. Consider the following statements:

1. The Indian Independence League played an important role in mobilising overseas Indians for India's freedom struggle.
2. Netaji Subhas Chandra Bose later assumed leadership of the Indian National Army.
3. Thailand is a member of BIMSTEC.

Which of the statements given above is/are correct?

- A. 1 and 2 only
- B. 2 and 3 only
- C. 1 and 3 only
- D. 1, 2 and 3

Answer: D. 1, 2 and 3

UPSC GS-II Mains Practice Question

Q2. "Historical and civilisational ties often provide a durable foundation for modern diplomatic relations." Discuss the significance of the India-Thailand relationship in the context of shared history, the Indian freedom struggle and India's Act East Policy. (15 Marks, 250 Words)

The hidden history of the Thai-Bharat connection

Source: *The Hindu Editorial/Opinion*

Writer: Shashi Tharoor (MP, author and former diplomat)

UPSC Syllabus Linkage

GS Paper-II

- India and neighbourhood relations
- India's Act East Policy
- Cultural diplomacy
- Bilateral and regional cooperation

GS Paper-I

- Modern Indian History
- Freedom struggle
- Role of overseas Indians

GS Paper-IV

- Patriotism, leadership and sacrifice in nation-building.

Introduction

India and Thailand share civilisational ties extending over two thousand years through Buddhism, Hindu culture, trade and maritime links. During World War II, Thailand also became an important centre for India's independence movement through the activities of the Indian National Army (INA) and the Thai-Bharat Cultural Lodge (TBCL). These historical connections continue to influence India's Act East Policy and cultural diplomacy.

Key Issues

1. Cultural ties became political strength

- Ancient religious and cultural links evolved into support for India's freedom struggle. Example: TBCL connected Thai society with Indian nationalists.

2. Overseas Indians contributed to independence

- Indian communities across Thailand, Burma and Malaya mobilised resources and volunteers for the INA and IIL.

3. Organised diaspora created unity

- The Bangkok Conference of 1942 brought together Indian organisations under one framework for coordinated action.

4. Leadership shaped the movement

- Rash Behari Bose and later Netaji Subhas Chandra Bose transformed scattered efforts into a structured liberation movement.

5. Historical institutions preserve diplomacy

- TBCL continues as a living symbol of India-Thailand friendship, strengthening modern cultural and strategic relations.

Prelims Related Facts

- Thai-Bharat Cultural Lodge (TBCL) established in Bangkok.
- Founder inspiration: Swami Satyananda Puri.
- INA was formally established in 1942.
- Indian Independence League (IIL) worked alongside INA.
- Rash Behari Bose played a key role before Subhas Chandra Bose.
- Bangkok Conference (1942) united Indian communities across Southeast Asia.
- Japan recognised the IIL as representative of Indians outside India.

Global Practices

Jewish diaspora and Israel

Global Jewish communities helped preserve identity and support nation-building.



Irish diaspora	Irish communities abroad significantly contributed to Ireland's independence movement.
Chinese cultural diplomacy	Confucius Institutes promote language and historical ties worldwide.
Japan's cultural outreach	Japan uses heritage and education exchanges to strengthen regional partnerships.
South Korea's soft power	K-pop, cinema and cultural institutions build long-term diplomatic goodwill.

Important Indian Initiatives

Act East Policy	Strengthens engagement with ASEAN and Southeast Asia.
Mekong-Ganga Cooperation	Promotes tourism, education and cultural exchanges.
ASEAN-India Partnership	Enhances connectivity and strategic cooperation.
Indian Council for Cultural Relations (ICCR)	Supports cultural diplomacy and educational exchanges.
BIMSTEC Cooperation	Builds regional collaboration across the Bay of Bengal.

Way Forward

- Document shared history**
 - Promote joint research projects and archives to preserve India-Thailand freedom movement connections.
- Strengthen educational exchanges**
 - Include shared historical narratives in academic collaborations and university partnerships.
- Expand cultural diplomacy**
 - Support museums, festivals and heritage circuits celebrating common civilisational traditions.
- Deepen people-to-people contacts**
 - Increase tourism, youth exchanges and diaspora engagement between both countries.
- Link history with strategy**
 - Use historical goodwill to strengthen trade, connectivity and Indo-Pacific cooperation.

Practice Question (Prelims)

Q1. Consider the following statements:

1. The Thai-Bharat Cultural Lodge was associated with India's freedom movement.
2. Rash Behari Bose played a significant role in the Indian Independence League.
3. Thailand had no connection with the Indian National Army.

Which of the above statements is/are correct?

- A. 1 and 2 only
- B. 2 and 3 only
- C. 1 and 3 only
- D. 1, 2 and 3

Answer: A

UPSC Mains Practice Question

Q2. "India's relations with Southeast Asia are rooted not only in strategic interests but also in deep historical and cultural linkages." Discuss with special reference to the India-Thailand connection and its relevance for India's Act East Policy. (15 Marks, 250 Words)

The 'seven-point IQ opportunity' for Indian children

Source: *The Hindu Editorial/Opinion*

Writer: Dr. Beena Koshy & Riday Chokshi

UPSC Syllabus Linkage

Prelims

- Integrated Child Development Services (ICDS)
- Anganwadi Services
- POSHAN Abhiyaan
- Saksham Anganwadi and POSHAN 2.0
- Mission Vatsalya
- National Education Policy (NEP) 2020
- UNICEF indicators on child development

GS Paper-II

- Health and Education
- Welfare schemes for vulnerable sections
- Human resource development
- Government policies for children

GS Paper-III

- Human capital formation
- Inclusive growth
- Demographic dividend
- Social sector development

Introduction

Early Childhood Development (ECD) refers to the physical, cognitive, emotional and social development of children from birth to eight years. Scientific evidence suggests that nearly 90% of brain development occurs before the age of five. Nutrition, health care, responsive caregiving, early learning and a safe environment together shape a child's future educational outcomes, productivity and overall well-being.

Key Issues

1. Early childhood determines future IQ

- The article argues that proper interventions can improve children's cognitive abilities significantly during the first six years of life.
- **Example:** Nutrition and responsive caregiving improve brain development.

2. Nutrition alone is not enough

- Child development depends on nutrition, health, emotional care and early learning working together rather than isolated interventions.
- **Example:** Iron supplements combined with stimulation improve outcomes.

3. Anganwadi model offers holistic care

- Anganwadis integrate nutrition, preschool education, growth monitoring and parental counselling under one platform.
- **Example:** ICDS service package.

Prelims Related Facts

- UNICEF estimates nearly 90% brain development occurs before age five.
- ICDS launched in 1975.
- Anganwadi Centres are the grassroots institutions under ICDS.
- POSHAN Abhiyaan launched in 2018.
- Saksham Anganwadi and POSHAN 2.0 launched in 2021.
- Mission Vatsalya focuses on child protection.
- NEP 2020 emphasises Early Childhood Care and Education (ECCE).
- National Education Policy proposes a 5+3+3+4 structure.
- UNICEF and World Bank reported a major decline in child mortality since 2000.
- The first six years are considered critical for cognitive development.

4. Preschool education improves learning outcomes

- Structured early education enhances language, memory and social skills, especially among disadvantaged children.
- **Example:** Children attending quality preschool perform better academically.

5. Community participation is essential

- Parents and communities play a major role in reducing screen exposure and creating supportive learning environments.
- **Example:** Home-based reading and play activities.

Global Best Practices

Finland	Universal early childhood education with play-based learning.
Jamaica	Early childhood stimulation programmes combining nutrition and parenting support.
Chile	Integrated child development services under Chile Crece Contigo.
United Kingdom	Sure Start Centres provide health, education and family support.
Singapore	Strong preschool ecosystem with government-supported quality standards.

Important Indian Committees/Recommendations

National Education Policy (NEP) 2020+Universal Early Childhood Care and Education.

NITI Aayog Strategy for New India+Focus on nutrition and early learning.

National Nutrition Strategy+Multi-sectoral approach to child development.

POSHAN 2.0 Framework+Convergence of nutrition and child welfare schemes.

Economic Survey Recommendations+Investment in human capital from early childhood.

Way Forward

1. Strengthen Anganwadis

- Upgrade infrastructure and improve training to deliver integrated nutrition, health and preschool education services.

2. Promote parental awareness

- Encourage responsive caregiving, reading habits and positive home environments for children's cognitive development.

3. Improve nutrition convergence

- Link health, sanitation and nutrition programmes to reduce childhood deficiencies affecting learning outcomes.

4. Expand quality preschool education

- Ensure universal access to affordable, play-based and inclusive early childhood education.

5. Encourage community participation

- Mobilise local institutions and volunteers to support child development and reduce harmful screen exposure.

Practice Question

Q1. Consider the following statements:

1. ICDS provides supplementary nutrition and preschool education through Anganwadi Centres.
2. NEP 2020 recognises Early Childhood Care and Education as an important policy priority.
3. POSHAN Abhiyaan focuses exclusively on food distribution.

Which of the above statements are correct?

- A. 1 and 2 only B. 2 and 3 only
C. 1 and 3 only D. 1, 2 and 3

Answer: A

UPSC Mains Practice Question

Q2. "Early childhood development is the foundation of human capital formation. Discuss the role of Anganwadi services and integrated child development programmes in realising India's demographic dividend." (15 Marks, 250 Words)

End the Free Rein of Junk Food Advertising in India

Source: The Hindu (Editorial/Opinion)

GS Paper Relevance:

GS-II: Health, Government Policies & Interventions

GS-III: Human Resource Development, Social Sector, Public Health, Nutrition

Introduction

Marketing, Nutrition and Public Health

India is witnessing a rapid rise in obesity, diabetes, hypertension, and other lifestyle diseases. A significant contributor is the increasing consumption of **Ultra-Processed Foods (UPFs)** and **HFSS (High Fat, Sugar and Salt) foods**, especially among children and adolescents. The debate is no longer merely about consumer choice but about creating a healthier food environment through appropriate regulation and public awareness.

Key Issues

1. Misleading Health Claims

- Advertisements selectively highlight terms such as "baked", "multigrain", or "healthy choice".
- Nutritional risks such as high sugar, salt, and fat content often remain underemphasised.

2. Targeting Children and Adolescents

- Celebrity endorsements, cartoon characters, influencers, and emotional messaging influence young consumers.
- Children lack the capacity to critically evaluate marketing claims.

3. Rising Burden of Lifestyle Diseases

- Increasing UPF consumption is linked with obesity, diabetes, hypertension, and cardiovascular diseases.
- India is already witnessing a significant rise in NCD-related healthcare expenditure.

4. Regulatory Gaps

Key Facts for Prelims

- **HFSS Foods:** Foods high in fat, sugar, and sodium, associated with obesity and non-communicable diseases (NCDs).
- **UPFs (Ultra-Processed Foods):** Industrial formulations containing additives, preservatives, flavour enhancers, emulsifiers, and sweeteners.
- **National Multisectoral Action Plan (NMAP) for Prevention and Control of Common NCDs (2017-2022)** recommended restrictions on HFSS food advertising.
- **Front-of-Pack Labelling (FOPL):** Warning labels on packaged foods indicating high sugar, salt, or fat content.
- **WHO** recommends limiting marketing of unhealthy foods targeted at children.
- India faces a growing burden of **NCDs**, including diabetes, obesity, cardiovascular diseases, and hypertension.

- Existing advertising regulations remain fragmented and weakly enforced.
- Front-of-pack warning labels are yet to become universal and effective.

5. Information Asymmetry

- Consumers often lack complete information regarding ingredients and health impacts.
- Marketing expenditure significantly outweighs public nutrition awareness campaigns.

Global Practices

Country	Practice
Chile	Mandatory front-of-pack warning labels; restrictions on child-targeted advertising
Mexico	Strong warning labels and school-level restrictions on unhealthy foods
United Kingdom	Restrictions on advertising unhealthy foods during children's viewing hours
Brazil	School-based nutrition guidelines and stronger regulatory advisories
WHO Guidelines	Recommend limiting marketing of unhealthy foods to children
Learning for India	Successful countries combine warning labels, advertising restrictions, school regulations, and consumer awareness.

Indian Policies / Committees

Government Initiatives	1. National Multisectoral Action Plan (NMAP) on NCDs 2. Eat Right India Campaign 3. Poshan Abhiyaan 4. Food Safety and Standards Authority of India (FSSAI) nutrition initiatives
Judicial Developments	1. Supreme Court observations have highlighted the need for better food labelling and consumer awareness regarding unhealthy foods.
Regulatory Institutions	1. FSSAI 2. Ministry of Health and Family Welfare 3. Consumer Protection Authorities 4. Advertising Standards Council of India (ASCI)

Way Forward

1. **Implement Mandatory Front-of-Pack Warning Labels**
 - Simple, visible, and science-based warnings for high sugar, salt, and fat content.
2. **Restrict Child-Targeted Advertising**
 - Limit celebrity endorsements, cartoon characters, and influencer marketing aimed at children.
3. **Strengthen School Food Ecosystems**
 - Promote healthy food choices in and around schools and educational institutions.
4. **Improve Nutrition Literacy**
 - Launch sustained public awareness campaigns on healthy eating habits.
5. **Strengthen Regulatory Oversight**
 - Establish clear accountability mechanisms and stronger enforcement against misleading advertisements.

Conclusion

The challenge of unhealthy food consumption is fundamentally a public health issue rather than merely a consumer preference issue. A balanced approach that combines consumer awareness, industry responsibility,

and effective regulation can help India reduce the growing burden of lifestyle diseases while ensuring informed food choices. Creating a healthier food environment today will yield long-term social and economic benefits.

Prelims MCQ

Q1. Consider the following statements regarding Ultra-Processed Foods (UPFs):

1. UPFs generally contain additives such as emulsifiers, flavour enhancers, and preservatives.
2. UPFs are associated with an increased risk of obesity and non-communicable diseases.
3. The World Health Organization recommends unrestricted marketing of UPFs to children.

Which of the statements given above is/are correct?

- A. 1 and 2 only B. 2 and 3 only
C. 1 and 3 only D. 1, 2 and 3

Answer: A

Mains Question

Q2. "The rising consumption of Ultra-Processed Foods (UPFs) poses a significant public health challenge in India." Discuss the need for stronger regulation of food advertising and improved nutrition governance to address this challenge. (250 words)

The Lack of Accountability within the NTA

Source: The Hindu (Editorial/Opinion)

GS Paper Relevance:

GS Paper II – Governance, Accountability, Education, Public Institutions

GS Paper IV – Ethics in Public Administration, Institutional Responsibility

Introduction**Institutional Accountability in High-Stakes Examinations**

The cancellation and re-examination of NEET-UG following allegations of a paper leak has once again highlighted concerns regarding accountability in India's examination ecosystem. While punitive measures against offenders are important, the larger governance question concerns whether institutions conducting national-level examinations are adequately accountable to the millions of candidates whose careers depend on them.

Key Issues

1. **Accountability Deficit in Examination Governance**
 - NTA's responsibility largely ends with conducting examinations and refunding fees in case of cancellation.
 - Institutional failures impose significant costs on students without corresponding accountability.
2. **High Dependence on a Single Examination**

Key Facts for Prelims (Static + Factual)

- **National Testing Agency (NTA)** was established in **2017** as a registered society under the **Societies Registration Act, 1860**.
- **NEET-UG** is the national entrance examination for undergraduate medical admissions.
- The **Public Examinations (Prevention of Unfair Means) Act, 2024** seeks to curb examination malpractices and paper leaks.
- The **National Medical Commission (NMC)** regulates medical education in India.
- **Computer-Based Testing (CBT)** is increasingly being adopted for competitive examinations.

- NEET is conducted as a single nationwide examination.
- Any disruption affects lakhs of aspirants simultaneously and delays admissions.
- 3. Economic and Social Burden on Candidates**
 - Students spend substantial resources on coaching, accommodation, travel, and preparation.
 - Fee refunds do not compensate for the broader financial and emotional costs.
- 4. Limited Candidate-Centric Provisions**
 - The Public Examinations Act focuses on punishment of offenders.
 - It lacks provisions for compensation, grievance redressal, or candidate protection.
- 5. Structural Vulnerability of Examination Design**
 - Even with a shift to CBT, a centralised examination model can remain vulnerable if institutional safeguards are inadequate.
 - Single points of failure continue to pose risks.

Global Practices

Country	Practice
United States	Multiple testing windows for standardised examinations (SAT, GRE)
United Kingdom	Strong examination regulator oversight and grievance mechanisms
Australia	Multiple assessment pathways alongside entrance examinations
Singapore	Robust digital examination security and audit systems
Key Learning	Diversification of assessment opportunities reduces systemic risk and candidate vulnerability.

Indian Policies / Committees (Simplified)

Relevant Constitutional Provisions	Article 14: Equality before law. Article 21: Right to life includes fair and reasonable administrative action. Directive Principles (Articles 41 & 46): Promote educational opportunity and protection of weaker sections.
Institutional Framework	- National Testing Agency (NTA) - National Medical Commission (NMC) - Ministry of Education - Public Examinations (Prevention of Unfair Means) Act, 2024

Way Forward

- Provide Statutory Backing to NTA**
 - Establish NTA through a dedicated parliamentary law with clearly defined responsibilities and accountability standards.
- Create Candidate Compensation Mechanisms**
 - Automatic compensation for examination cancellations arising from institutional failures.
- Introduce Multiple Examination Windows**
 - Conduct entrance examinations multiple times a year to reduce systemic risk.
- Strengthen Digital Security Architecture**
 - Independent audits, AI-based monitoring, and robust cybersecurity measures.
- Establish Transparent Grievance Redressal**
 - Dedicated ombudsman and time-bound resolution systems for examination-related disputes.

Conclusion

India's examination system must balance integrity, efficiency, and fairness. Punishing wrongdoers is necessary, but true accountability requires institutions to share responsibility for failures that affect candidates. A more resilient, transparent, and candidate-centric examination framework will strengthen public trust and improve educational governance.

Prelims MCQ

Q1. Consider the following statements regarding the National Testing Agency (NTA):

1. It was established in 2017 as a registered society.
2. It was created through a constitutional amendment.
3. It conducts several national-level entrance examinations.

Which of the statements given above is/are correct?

- A. 1 and 3 only
- B. 2 and 3 only
- C. 1 and 2 only
- D. 1, 2 and 3

Answer: A

Mains Question

Q2. "The credibility of public examinations depends not only on preventing malpractice but also on ensuring institutional accountability." Discuss in the context of recent examination-related controversies in India. (250 words)

India doesn't just need start-ups, but scale-ups that become global giants

Source: *The Hindu Editorial/Opinion*

Writer: Sachchidanand Shukla

UPSC Syllabus Linkage (Brief)

GS Paper-III

- Indian Economy and Growth
- Industrial Policy
- Entrepreneurship
- Employment Generation
- Innovation Ecosystem
- Global Value Chains (GVCs)
- Manufacturing and Competitiveness

Introduction

A **startup** is a young company focused on innovation and rapid growth, while a **scale-up** is a business that has successfully expanded operations, revenues, employment and market reach. Globally, economic transformation has often been driven not merely by startups but by firms that evolve into large multinational enterprises capable of dominating global value chains, innovation networks and international markets.

Key Issues from the Article

1. **India has many startups but few global giants**

- India has created a vibrant startup ecosystem but has produced relatively few firms that dominate global markets.
- **Example:** India has many unicorns but few companies comparable to Samsung or Toyota.
- 2. **Scale drives productivity and competitiveness**
 - Large firms spread innovation, compliance and infrastructure costs over greater output, improving efficiency and global competitiveness.
 - **Example:** Global manufacturing leaders achieve lower production costs through scale.
- 3. **Domestic success does not guarantee global leadership**
 - Many Indian firms dominate domestic markets but remain absent from high-value global segments.
 - **Example:** Strong domestic consumer companies often lack international brand presence.
- 4. **Limited participation in high-value sectors**
 - India remains underrepresented in advanced manufacturing, semiconductor ecosystems and intellectual property-intensive industries.
 - **Example:** Global technology patents remain concentrated in developed economies.
- 5. **Regulatory and financial barriers constrain growth**
 - Complex regulations, fragmented markets and limited access to long-term risk capital slow firm expansion.
 - **Example:** Deep-tech startups often struggle to secure growth-stage funding.

Prelims Related Facts

- India is the world's third-largest startup ecosystem.
- Startup India was launched in 2016.
- India has more than 100 unicorns.
- DPI includes Aadhaar, UPI and DigiLocker.
- MSMEs contribute nearly 30% of India's GDP.
- Manufacturing is targeted to reach 25% of GDP under Make in India.
- India aims to become a developed economy by 2047.
- Large firms play a major role in exports and R&D spending.
- Global Value Chains (GVCs) account for a significant share of global trade.
- Ease of Doing Business reforms seek to improve business competitiveness.

Global Best Practices

South Korea	Government-industry coordination helped firms like Samsung and Hyundai become global champions.
Japan	Long-term industrial policy supported Toyota, Sony and advanced manufacturing ecosystems.
Germany	The Mittelstand model promotes innovation, exports and industrial competitiveness.
United States	Strong venture capital markets support startup-to-scale-up transitions.
China	State support, infrastructure and supply-chain integration created globally competitive firms.

Important Indian Committees/Recommendations

Economic Survey	Emphasises entrepreneurship and productivity-led growth.
NITI Aayog	Advocates innovation-driven economic transformation.
Startup India Action Plan	Supports entrepreneurship through incentives and simplification.
National Logistics Policy	Reduces logistics costs to improve competitiveness.
PLI Scheme Framework	Encourages manufacturing scale and integration into global supply chains.

Way Forward

1. **Strengthen scale-up financing**
 - Expand access to long-term domestic capital and growth-stage funding for promising firms.
2. **Simplify regulatory environment**
 - Reduce compliance burdens and improve ease of expansion across states and sectors.
3. **Promote innovation-intensive industries**
 - Support deep-tech, semiconductors, advanced manufacturing and research-driven enterprises.
4. **Integrate with global value chains**
 - Encourage exports, international partnerships and participation in high-value production networks.
5. **Develop global business champions**
 - Create policies that reward productivity, innovation and international competitiveness rather than only firm creation.

Practice Question (Prelims)**Q1. Consider the following statements:**

1. Startup India was launched in 2016.
2. Large firms generally contribute significantly to exports and R&D expenditure.
3. A unicorn is a startup valued at less than \$100 million.

Which of the above statements is/are correct?

- A. 1 and 2 only B. 2 and 3 only
C. 1 and 3 only D. 1, 2 and 3

Answer: A**UPSC Mains Practice Question**

Q2. Q. India's economic transformation requires not only a vibrant startup ecosystem but also globally competitive scale-ups. Examine the challenges in scaling Indian firms and suggest measures to build global business champions. (15 Marks, 250 Words)

The challenge of India's digital sovereignty

Source: *The Hindu Editorial/Opinion***Writers:** Manish Verma & T.R. Nair**UPSC Syllabus Linkage****GS Paper-II**

- Government policies and interventions
- Digital governance
- Data protection and privacy
- India-EU relations
- Self-Reliance in Critical Technologies

Introduction

Digital sovereignty refers to a nation's ability to control and secure its digital infrastructure, data, technology platforms and critical cyber systems without excessive dependence on foreign entities. In an increasingly digital world, economic growth, governance, defence preparedness and national security are deeply linked to technological autonomy. Countries today view digital sovereignty as a strategic necessity similar to energy security or defence preparedness.

Key Issues from the Article

1. Foreign control over digital infrastructure

- Dependence on foreign cloud services, software platforms and communication systems exposes India to external vulnerabilities.
- **Example:** Restrictions on technology access can disrupt government and business operations.

2. National security risks from technological dependence

- Critical sectors increasingly rely on imported technologies that may be vulnerable to sanctions or geopolitical disputes.
- **Example:** Defence and communication systems dependent on foreign suppliers.

3. Data sovereignty concerns

- Large amounts of Indian citizen and government data are stored on foreign-controlled digital platforms.
- **Example:** Overseas cloud infrastructure handling sensitive information.

4. Limited domestic technological capabilities

- India remains dependent on imports in advanced technologies such as semiconductors, cloud infrastructure and high-end electronics.
- **Example:** Semiconductor manufacturing ecosystem is still developing.

5. Need for indigenous innovation ecosystem

- Long-term digital sovereignty requires domestic R&D, private sector participation and advanced manufacturing capabilities.
- **Example:** Semiconductor fabrication and AI infrastructure development.

Prelims Related Facts

- Digital India Mission was launched in 2015.
- India has one of the world's largest digital public infrastructures (DPI).
- UPI processes billions of transactions annually.
- Aadhaar is the world's largest biometric identity programme.
- CERT-In is India's national cyber incident response agency.
- India Semiconductor Mission was launched in 2021.
- Data Protection Act enacted in 2023.
- Cloud computing forms the backbone of modern digital services.
- Semiconductors are critical for AI, defence and communication technologies.
- GPS is controlled by the United States, while India operates NavIC.

Global Best Practices

United States	Strong domestic technology ecosystem led by private innovation and strategic government support.
European Union	Promotes digital sovereignty through data governance and technology regulations.
China	Built indigenous digital platforms and semiconductor capabilities to reduce external dependence.
South Korea	Invested heavily in semiconductor manufacturing and technology innovation.
Japan	Supports strategic technology industries through long-term industrial policy.

Important Indian Committees/Recommendations

National Cyber Security Strategy	Strengthening critical digital infrastructure protection.
India Semiconductor Mission	Building domestic semiconductor manufacturing capacity.

National Digital Communications Policy	Enhancing digital infrastructure and connectivity.
Data Governance Framework Recommendations	Promoting secure and responsible data management.
NITI Aayog AI Strategy	Developing responsible and indigenous AI capabilities.

Way Forward

- Develop indigenous technology ecosystems**
 - Promote domestic innovation in semiconductors, cloud services, cybersecurity and advanced computing technologies.
- Strengthen semiconductor manufacturing**
 - Accelerate investments and partnerships to build resilient domestic semiconductor production capacity.
- Enhance public-private collaboration**
 - Leverage industry expertise and government support for strategic technology development.
- Invest in research and development**
 - Increase R&D spending to create globally competitive technological capabilities and intellectual property.
- Secure critical digital infrastructure**
 - Adopt robust cybersecurity measures and data protection frameworks for national resilience.

Practice Question

Q1. Consider the following statements:

- Digital sovereignty refers to a country's ability to control critical digital infrastructure and data.
- India Semiconductor Mission aims to strengthen domestic semiconductor manufacturing.
- NavIC is a satellite navigation system operated by the European Union.

Which of the above statements is/are correct?

- A. 1 and 2 only B. 2 and 3 only
C. 1 and 3 only D. 1, 2 and 3

Answer: A

UPSC Mains Practice Question

Q2. Q. Digital sovereignty has emerged as a key pillar of national security and economic resilience. Examine the challenges faced by India in achieving digital sovereignty and suggest measures to strengthen technological self-reliance. (15 Marks, 250 Words)

PACOM: The Deeper Meaning Behind a Dropped Prefix

Source: The Hindu (Editorial/Opinion)

GS Paper Relevance:

GS Paper II – India and its Neighbourhood, International Relations

GS Paper III – Security, Maritime Strategy

Introduction

Changing U.S. Strategic Priorities in the Indo-Pacific

The United States' decision to rename its **Indo-Pacific Command (INDOPACOM)** back to **U.S. Pacific Command (PACOM)** is more than a symbolic change. It reflects evolving U.S. strategic priorities amid changing



geopolitical realities involving China, West Asia, and South Asia. The development has implications for India's Indo-Pacific strategy, regional partnerships, and maritime security.

Key Issues

1. Changing U.S. Strategic Focus

- Renaming PACOM indicates a possible shift in U.S. regional priorities.
- Greater emphasis may be placed on broader Pacific and global security concerns.

2. Uncertainty over the Quad

- Reduced political emphasis on the Quad raises questions about its future strategic role.
- India may need to strengthen other regional partnerships.

3. West Asia's Growing Importance

- Developments involving Iran, Israel and Gulf countries increasingly influence Indo-Pacific security.
- Energy security and maritime trade remain critical concerns for India.

4. Strategic Competition in South Asia

- The U.S. and China are expanding diplomatic engagement in South Asia.
- India must carefully manage regional influence while maintaining strategic autonomy.

5. Maritime Security Challenges

- Attacks on commercial shipping and instability around key sea lanes highlight the need for stronger maritime cooperation.

Key Facts for Prelims

- **U.S. Indo-Pacific Command (INDOPACOM):** Unified combatant command responsible for the Indo-Pacific region.
- **Quad:** Strategic grouping comprising **India, USA, Japan and Australia**.
- **Shangri-La Dialogue:** Asia's premier security summit held annually in **Singapore**.
- **Strait of Hormuz:** Connects the Persian Gulf with the Gulf of Oman; a major global oil transit chokepoint.
- **BIMSTEC:** Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation.
- **SCO:** Shanghai Cooperation Organisation.

Global Practices

Region/Country	Practice
United States	Flexible regional command structure aligned with strategic priorities
Japan & Australia	Deep defence cooperation and maritime interoperability
ASEAN	Dialogue-based regional security architecture
European Union	Strategic partnerships balancing economic and security interests

Learning for India: Diversified partnerships and issue-based coalitions enhance strategic resilience.

Indian Policies / Committees

1. Act East Policy
2. SAGAR (Security and Growth for All in the Region)
3. Indo-Pacific Oceans Initiative (IPOI)
4. Participation in Quad, BIMSTEC, IORA, and SCO
5. Maritime security cooperation through the Indian Navy

Way Forward

1. Strengthen Strategic Autonomy



- Continue balanced engagement with all major powers.
- 2. **Revitalise Regional Partnerships**
 - Deepen cooperation through Quad, BIMSTEC, IORA and ASEAN.
- 3. **Enhance Maritime Security**
 - Improve surveillance, naval cooperation and protection of Sea Lines of Communication (SLOCs).
- 4. **Expand West Asia Engagement**
 - Maintain balanced relations with Gulf countries, Iran and Israel while safeguarding energy interests.
- 5. **Promote India's Regional Leadership**
 - Use diplomacy, connectivity and economic partnerships to strengthen India's role in the Indo-Pacific.

Conclusion

The change from INDOPACOM to PACOM reflects broader geopolitical adjustments rather than a mere administrative decision. For India, the key lesson is to remain adaptable, strengthen strategic partnerships, and continue pursuing an independent foreign policy that protects national interests in an evolving regional order.

Prelims MCQ

Q1. Consider the following statements:

1. The Quad comprises India, the United States, Japan and Australia.
2. The Strait of Hormuz connects the Persian Gulf with the Gulf of Oman.
3. BIMSTEC includes Pakistan as a member.

Which of the statements given above are correct?

- A. 1 and 2 only
- B. 2 and 3 only
- C. 1 and 3 only
- D. 1, 2 and 3

Answer: A

Mains Question

Q2. "Changing geopolitical priorities of major powers require India to continuously recalibrate its Indo-Pacific strategy while preserving strategic autonomy." Discuss. (250 words)

Student Notes 📝

Sustaining India's Low-Fertility Future

Source: The Hindu (Editorial/Opinion)

GS Paper Relevance:

GS Paper II – Population, Social Justice, Welfare Policies

GS Paper III – Inclusive Growth, Human Resource Development

Introduction

India's New Demographic Transition

India has entered a new demographic phase, with the **Total Fertility Rate (TFR) declining to 1.9**, below the replacement level of **2.1**. While lower fertility reflects progress in education, healthcare, and women's empowerment, it also presents long-term challenges related to ageing, labour supply, pensions, healthcare, and social security. The focus must now shift from population control to managing demographic transition.

Key Issues

1. Rapid Population Ageing

- Declining fertility will increase the proportion of elderly citizens.
- Greater demand for pensions, healthcare, and long-term care services.

2. Regional Demographic Imbalances

- Southern and western States have much lower fertility than several northern States.
- This may influence labour markets, migration, and fiscal planning.

3. Weak Old-Age Social Security

- A large share of India's workforce is informal and lacks pension coverage.
- Existing pension schemes provide limited income security.

4. Pressure on Healthcare Systems

- Ageing populations require greater investment in geriatric care, chronic disease management, and primary healthcare.

5. Migration and Labour Mobility

- Ageing States will increasingly depend on migrants from younger States.
- Welfare portability and labour integration become essential.

Key Facts for Prelims

- **Total Fertility Rate (TFR):** Average number of children a woman is expected to have during her reproductive years.
- **Replacement-Level Fertility:** Approximately **2.1 children per woman**, required to maintain a stable population.
- **Sample Registration System (SRS):** India's primary source of annual fertility and mortality statistics, released by the Registrar General of India.
- **National Social Assistance Programme (NSAP):** Provides social pensions to vulnerable elderly, widows, and persons with disabilities.
- **Atal Pension Yojana (APY):** A contributory pension scheme aimed primarily at workers in the unorganised sector.

Global Practices

Country	Practice
Japan	Long-term care insurance and active ageing policies
Germany	Strong pension and elderly social security systems
Sweden	Family-friendly policies supporting work-life balance and childcare
Singapore	Active ageing programmes and retirement planning initiatives

Learning for India: Demographic transition requires integrated policies on pensions, healthcare, labour markets, and family support.

Indian Policies / Committees

1. **National Population Policy, 2000**
2. **Atal Pension Yojana (APY)**
3. **National Social Assistance Programme (NSAP)**
4. **Ayushman Bharat – PM-JAY**
5. **National Programme for Health Care of the Elderly (NPHCE)**
6. **One Nation One Ration Card (ONORC)** for portability of welfare benefits

Way Forward

1. **Strengthen Universal Social Security**
 - Expand pension coverage and ensure adequate old-age income support.
2. **Invest in Geriatric Healthcare**
 - Improve elderly healthcare services through primary care and district hospitals.
3. **Enhance Labour Productivity**
 - Invest in education, skill development, and technology to offset a shrinking workforce.
4. **Ensure Welfare Portability**
 - Strengthen portability of social protection for interstate migrant workers.
5. **Promote Healthy and Active Ageing**
 - Encourage preventive healthcare, financial planning, and community-based elderly care.

Conclusion

India's demographic transition marks a new stage of development. Declining fertility should be viewed as an opportunity to improve human capital rather than a challenge alone. A forward-looking policy framework that combines social security, healthcare, labour reforms, and inclusive growth will enable India to harness the benefits of an ageing yet productive society.

Prelims MCQ

Q1. Consider the following statements:

1. Replacement-level fertility is generally considered to be about 2.1 children per woman.
2. The Sample Registration System (SRS) provides fertility and mortality statistics in India.
3. Atal Pension Yojana is a non-contributory pension scheme.

Which of the statements given above is/are correct?

- A. 1 and 2 only
- B. 2 and 3 only
- C. 1 and 3 only
- D. 1, 2 and 3

Answer: A

Mains Question

Q2. "India's declining fertility marks the beginning of a new demographic transition. Discuss the challenges and policy measures required to ensure that an ageing population does not hinder inclusive and sustainable development." (250 words)

India–New Zealand FTA, A Modern Trade Partnership

Source: *The Hindu* (Editorial)

GS Paper Relevance:

GS Paper II: India and its bilateral relations

GS Paper III: International Trade, Economic Development, External Sector, FTAs

Introduction

Reviving India–New Zealand Economic Engagement

India and New Zealand have resumed negotiations for a **Free Trade Agreement (FTA)** after a long gap. As global supply chains diversify and countries seek resilient trade partnerships, the proposed agreement reflects India's evolving trade strategy that balances market access with protection of domestic interests while strengthening ties in the Indo-Pacific.

Key Issues

1. Expanding Bilateral Trade

- The FTA can improve market access for goods and services.
- **Example:** Greater opportunities for Indian pharmaceuticals, textiles, IT services and engineering goods.

2. Services Sector Opportunities

- India seeks improved mobility for professionals and recognition of qualifications.
- **Example:** Easier access for IT professionals, educators and healthcare workers.

3. Agricultural Sensitivities

- New Zealand has strong dairy exports, while India seeks to protect its domestic dairy farmers.
- **Example:** Dairy remains one of the most sensitive sectors in negotiations.

4. Investment and Supply Chains

5. The agreement could encourage greater investment and integration into Indo-Pacific value chains.

- **Example:** Collaboration in food processing, renewable energy and logistics.

6. Reducing Non-Tariff Barriers

- Trade facilitation measures can lower transaction costs and improve export competitiveness.
- **Example:** Faster customs procedures and harmonised standards.

Key Facts for Prelims

- **Free Trade Agreement (FTA):** Agreement between countries to reduce or eliminate tariffs and non-tariff barriers.
- **New Zealand:** A founding member of the **Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP)**.
- **India's FTA Policy:** India has recently concluded trade agreements with **UAE, Australia (ECTA), EFTA**, and continues negotiations with the **EU** and **UK**.
- **Tariff:** Tax imposed on imported goods.
- **Non-Tariff Barriers (NTBs):** Standards, regulations, quotas, SPS and TBT measures affecting trade.

Global Practices

Country/Region	Best Practice
European Union	Deep integration through comprehensive FTAs covering goods, services and investment.
Australia	Modern FTAs with digital trade and services provisions.
Singapore	Trade facilitation through efficient customs and digital systems.
CPTPP Members	High-standard trade rules on investment, labour and digital commerce.

ASEAN	Regional integration through tariff reduction and supply-chain connectivity.
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Indian Policies / Committees

Foreign Trade Policy (FTP) 2023	Promote exports and improve ease of doing business.
Make in India	Strengthen domestic manufacturing competitiveness.
National Logistics Policy	Reduce logistics costs and improve export efficiency.
PM Gati Shakti	Integrated infrastructure for trade connectivity.
Production Linked Incentive (PLI) Scheme	Promote manufacturing and exports.

Way Forward

1. Conclude a balanced FTA protecting sensitive sectors while expanding market access.
2. Improve mobility of skilled professionals and mutual recognition of qualifications.
3. Address non-tariff barriers through regulatory cooperation.
4. Promote investments in high-value manufacturing and innovation.
5. Strengthen supply-chain resilience through deeper Indo-Pacific partnerships.

Conclusion

The India–New Zealand FTA represents more than a tariff-reduction agreement; it reflects India's broader strategy of building resilient trade partnerships in a changing global economy. A balanced, mutually beneficial agreement can enhance trade, investment, and strategic cooperation while safeguarding domestic interests.

Prelims MCQ

Q1. With reference to Free Trade Agreements (FTAs), consider the following statements:

1. FTAs generally aim to reduce or eliminate tariffs between participating countries.
2. FTAs may also include provisions relating to services, investment and intellectual property.
3. New Zealand is a member of the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP).

Which of the statements given above are correct?

- A. 1, 2 and 3
- B. 1 and 2 only
- C. 2 and 3 only
- D. 1 and 3 only

Answer: A

Mains Question

Q2. "Free Trade Agreements are increasingly becoming strategic instruments beyond tariff reduction." Discuss in the context of India's evolving trade policy and the proposed India–New Zealand FTA. (250 words)

Student Notes

The Cracks Beneath the Peddled Story of India's Growth

Source: The Hindu (Editorial/Opinion)

GS Paper Relevance:

GS Paper III – Indian Economy, Growth & Development, Employment, External Sector, Agriculture, Science & Technology

Introduction

Economic Growth Beyond Headline Numbers

India has emerged as one of the world's fastest-growing major economies. However, sustainable economic development depends not only on GDP growth but also on employment generation, technological capability, external sector resilience, agricultural stability, and social protection. The editorial argues that structural vulnerabilities continue to challenge India's long-term growth prospects despite impressive macroeconomic indicators.

Key Issues

1. High External Dependence on Energy

- India imports nearly **85–90% of crude oil** and around half of its natural gas requirements.
- **Example:** Global oil price shocks and geopolitical conflicts increase imported inflation and widen the trade deficit.

2. Weak Rural Economy and Agricultural Vulnerability

- Agriculture remains highly dependent on monsoon performance and imported fertiliser inputs.
- **Example:** Weak monsoons reduce rural incomes, depress demand, and increase food inflation.

3. Inadequate Employment and Social Protection

- Growth has not generated sufficient quality employment, while informal workers remain vulnerable.
- **Example:** Weakening of rural safety nets increases economic insecurity during downturns.

4. Technological Dependence

- India continues to rely heavily on imported semiconductors, advanced electronics and capital equipment.
- **Example:** Despite a vibrant startup ecosystem, India remains dependent on foreign technology in critical sectors.

5. Slow Manufacturing Transformation

- Manufacturing's contribution to employment and exports has not expanded sufficiently.
- **Example:** Young workers continue to face underemployment despite economic growth.

Key Facts for Prelims

- **Current Account Deficit (CAD):** Occurs when imports of goods, services and transfers exceed exports.
- **Foreign Exchange Reserves:** Maintained by the Reserve Bank of India (RBI) to ensure external sector stability.
- **MNREGA:** A rights-based employment guarantee programme providing 100 days of wage employment to rural households.
- **Remittances:** India is the world's largest recipient of inward remittances.
- **Production Linked Incentive (PLI) Scheme:** Encourages domestic manufacturing in strategic sectors.

Global Practices

Country	Best Practice

South Korea	Strong industrial policy and semiconductor leadership through innovation.
Taiwan	Global leadership in semiconductor manufacturing via sustained R&D investment.
Germany	High-value manufacturing supported by skilled workforce and MSMEs.
China	Large-scale manufacturing ecosystem integrated with global supply chains.
Japan	Energy efficiency and technological innovation reduce external vulnerabilities.

Learning for India: Long-term growth requires technology leadership, manufacturing competitiveness, skilled labour, and resilient supply chains.

Indian Policies / Committees

Make in India	Promote domestic manufacturing.
Production Linked Incentive (PLI) Scheme	Incentivises strategic manufacturing sectors.
National Green Hydrogen Mission	Reduce dependence on imported fossil fuels.
PM Gati Shakti National Master Plan	Integrated infrastructure development.
MNREGA	Rural employment and livelihood security.
Atmanirbhar Bharat Initiative	Enhance domestic production and self-reliance.

Way Forward

- 1. Reduce Import Dependence**
 - Accelerate renewable energy, domestic semiconductor production, and critical mineral supply chains.
- 2. Strengthen Manufacturing**
 - Improve ease of doing business, logistics, industrial clusters, and export competitiveness.
- 3. Boost Employment Generation**
 - Encourage labour-intensive industries, MSMEs, skilling, and formal job creation.
- 4. Strengthen Rural Economy**
 - Enhance agricultural productivity, irrigation, crop diversification, and social safety nets.
- 5. Invest in Innovation**
 - Increase public and private investment in R&D, frontier technologies, AI, and advanced manufacturing.

Conclusion

India's long-term economic strength will depend on addressing structural weaknesses alongside maintaining high growth. Greater investment in manufacturing, technology, employment generation, energy security, and social protection will help transform rapid economic growth into inclusive and sustainable development.

Prelims MCQ

Q1. Consider the following statements:

1. The Current Account Deficit (CAD) widens when imports exceed exports of goods, services, and transfers.
2. MNREGA guarantees 100 days of wage employment to every rural household willing to undertake unskilled manual work.
3. The Production Linked Incentive (PLI) Scheme primarily aims to promote domestic manufacturing.

Which of the statements given above is/are correct?

- A. 1, 2 and 3
- B. 1 and 2 only
- C. 2 and 3 only

D. 1 and 3 only

Answer: A

Mains Question

Q2. "India's high GDP growth must be supported by structural reforms in manufacturing, employment, technology, and external sector resilience to achieve sustainable development." Discuss. (250 words)

Student Notes 

PRELIMS

India to Replace Wholesale Price Index (WPI) with Producer Price Index (PPI): New Statistical Series from June 15

Source: Press Trust of India (PTI)

Key News

The Government of India has decided to replace the existing **Wholesale Price Index (WPI)** series (**Base Year: 2011–12**) with a more comprehensive **Producer Price Index (PPI)** framework. DPIIT will release a new statistical series comprising **Output PPI, Input PPI, and Services PPI** from **15 June 2026**.

1. The move aims to align India's inflation measurement system with international best practices recommended by institutions such as the **International Monetary Fund (IMF)**.
2. Unlike WPI, the new index will capture price movements at the producer level, including services and production inputs.
3. The reform is expected to improve inflation analysis, policy formulation, and economic decision-making.

Major Key Data / Facts

New Price Indices to be Released

1. Output Producer Price Index (Output PPI)
2. Input Producer Price Index (Input PPI)
3. Services Producer Price Index (SPPI)

Current Inflation Indices in India

1. **Consumer Price Index (CPI)** – Released by NSO
2. **Wholesale Price Index (WPI)** – Released by DPIIT

Existing WPI Base Year

1. **2011–12**

Proposed New Base Year

1. **2022–23**

What is Producer Price Index (PPI)?

The **Producer Price Index (PPI)** measures the average change in prices received by producers for their goods and services over time.

It captures price changes at the **producer or factory gate level**, before products reach consumers.

PPI is widely used across developed and emerging economies as a leading indicator of inflationary trends.

Difference Between WPI and PPI

Feature	WPI	PPI
Measures	Wholesale prices	Producer prices
Coverage	Mostly goods	Goods + Services
Input Cost Capture	Limited	Included
International Acceptance	Lower	Widely accepted
Supply Chain Analysis	Limited	Comprehensive

Types of Producer Price Indices

Output Producer Price Index (Output PPI)

Measures

Prices received by producers for goods and services sold.

Importance

1. Indicates revenue-side inflation.
2. Reflects producer earnings trends.

Input Producer Price Index (Input PPI)

Measures

Prices paid by producers for:

1. Raw materials
2. Intermediate goods
3. Energy
4. Components

Importance

1. Captures production cost pressures.
2. Acts as an early inflation signal.

Services Producer Price Index (SPPI)

Measures

Price changes in service sectors such as:

1. Banking
2. Insurance
3. Transport
4. Telecommunications
5. Professional services

Significance

Addresses a major limitation of WPI, which largely excluded services.

Why is India Moving from WPI to PPI?

1. **Better Inflation Measurement**
 - PPI captures the entire production chain rather than only wholesale transactions.
2. **Growing Importance of Services**
 - Services contribute more than half of India's GDP but are inadequately represented in WPI.
3. **International Best Practices**
 - Most advanced economies rely on PPI frameworks.
4. **Improved Policy Formulation**
 - Provides policymakers with deeper insights into cost pressures across sectors.

What is Wholesale Price Index (WPI)?

Definition

WPI measures changes in prices of goods traded in wholesale markets.

Released By

Office of Economic Adviser (OEA)

under:

Department for Promotion of Industry and Internal Trade (DPIIT)

Current Composition of WPI

Major Group	Weight (%)
Primary Articles	22.62
Fuel & Power	13.15
Manufactured Products	64.23

Consumer Price Index (CPI) vs PPI

Parameter	CPI	PPI
Focus	Consumer prices	Producer prices

Includes Taxes	Yes	Generally No
Includes Retail Margin	Yes	No
Used for RBI Inflation Targeting	Yes	No

Why PPI is Important?

Economic Importance

1. Early warning indicator of inflation.
2. Tracks supply-side pressures.
3. Helps industrial planning.
4. Supports monetary and fiscal policymaking.

Business Importance

1. Contract escalation clauses.
2. Procurement planning.
3. Cost forecasting.

International Practice

Countries Using PPI

1. United States
2. United Kingdom
3. Canada
4. Australia
5. Japan
6. European Union members

International Standard Setter

International Monetary Fund (IMF)

PPI methodology is aligned with IMF's **Producer Price Index Manual**.

Challenges in Implementing PPI

Data Collection Challenges

1. Large producer base.
2. Service-sector coverage.
3. Informal sector representation.

Methodological Challenges

1. Frequent product changes.
2. Digital economy measurement.
3. Sectoral weight revisions.

UPSC Value Addition

Inflation Indicators in India

Indicator	Released By
CPI	National Statistical Office (NSO)
WPI	DPIIT
IIP	NSO
GDP Deflator	NSO

UPSC Prelims Practice

Q1. Consider the following statements regarding the Producer Price Index (PPI):

1. PPI measures changes in prices received by producers for goods and services.
2. Services Producer Price Index (SPPI) is designed to capture price movements in service sectors.
3. PPI generally captures production-stage price changes before products reach final consumers.
4. Consumer Price Index (CPI) and Producer Price Index (PPI) measure exactly the same stage of inflation.

Which of the statements given above are correct?

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

Answer:

- (a) 1, 2 and 3 only

Mains Enrichment (GS Paper III – Indian Economy)

Q2. "The proposed transition from Wholesale Price Index (WPI) to Producer Price Index (PPI) marks a significant reform in India's statistical architecture." Discuss its rationale, benefits, and implementation challenges. (250 words)

FRA–PESA Task Force faces criticism from tribal rights groups

What is in News?

Tribal rights activists and opposition leaders have criticized the formation of a **FRA–PESA Task Force** in Madhya Pradesh. Critics argue that the task

force may undermine the role of statutory bodies established under the **Forest Rights Act (FRA), 2006** and **Panchayats (Extension to Scheduled Areas) Act (PESA), 1996**.



1. The task force has been constituted to monitor implementation of FRA and PESA in tribal-dominated regions.
2. Concerns have been raised regarding overlapping authority with Gram Sabhas and other legally mandated institutions.

Importance

Tribal Self-Governance

1. FRA and PESA are landmark legislations protecting the rights of tribal communities over land, forests, and local governance.

Role of Gram Sabha

1. Both laws empower Gram Sabhas to make decisions regarding community resources and local development.

Forest Rights

1. FRA recognizes individual and community forest rights of Scheduled Tribes and traditional forest dwellers.

Decentralized Governance

1. PESA extends Panchayati Raj provisions to Scheduled Areas under the Fifth Schedule.

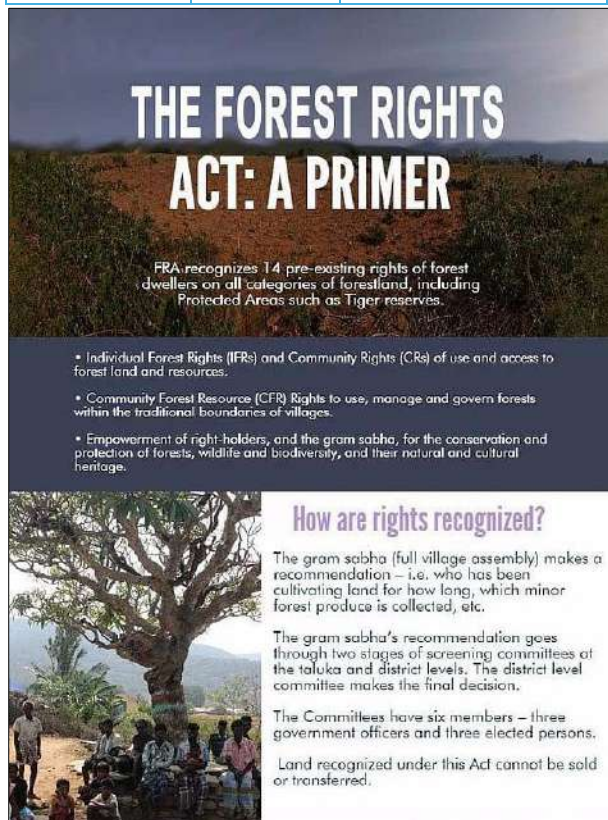
Governance Debate

1. Raises questions regarding institutional autonomy, decentralization, and implementation mechanisms.

About FRA & PESA

Feature	FRA, 2006	PESA, 1996
Full Form	Forest Rights Act	Panchayats (Extension to

		Scheduled Areas) Act
Objective	Recognize forest rights	Strengthen self-governance in Scheduled Areas
Beneficiaries	Forest dwellers & STs	Tribal communities in Scheduled Areas
Key Institution	Gram Sabha	Gram Sabha



THE FOREST RIGHTS ACT: A PRIMER

FRA recognizes 14 pre-existing rights of forest dwellers on all categories of forestland, including Protected Areas such as Tiger reserves.

- Individual Forest Rights (IFRs) and Community Rights (CRs) of use and access to forest land and resources.
- Community Forest Resource (CFR) Rights to use, manage and govern forests within the traditional boundaries of villages.
- Empowerment of right-holders, and the gram sabha, for the conservation and protection of forests, wildlife and biodiversity, and their natural and cultural heritage.

How are rights recognized?

The gram sabha (full village assembly) makes a recommendation – i.e. who has been cultivating land for how long, which minor forest produce is collected, etc.

The gram sabha's recommendation goes through two stages of screening committees at the taluka and district levels. The district level committee makes the final decision.

The Committees have six members – three government officers and three elected persons.

Land recognized under this Act cannot be sold or transferred.

Additional UPSC Facts

Forest Rights Act (FRA), 2006

1. Official name: **Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006**
2. Recognizes:
 - Individual Forest Rights (IFR)
 - Community Forest Rights (CFR)
 - Rights over minor forest produce

PESA Act, 1996

1. Applicable to **Fifth Schedule Areas**
2. Empowers Gram Sabhas in:
 - Land acquisition consultation

- Management of minor forest produce
- Traditional resource governance

MCQ

Q3. The Panchayats (Extension to Scheduled Areas) Act (PESA), 1996 primarily applies to:

- (a) Sixth Schedule Areas
- (b) Urban local bodies
- (c) Fifth Schedule Areas
- (d) Union Territories

Correct Answer: (c) Fifth Schedule Areas

Indigenous RudraM-II missile successfully completes flight trials



What is in News?

1. Defence Research and Development Organisation successfully conducted flight trials of the **RudraM-II** missile from an airborne platform.
2. RudraM-II is an **indigenously developed air-to-surface missile** designed for precision strikes against enemy assets.
3. The trial validated all critical subsystems and demonstrated the missile's operational capabilities.
4. Tracking and monitoring of the test were carried out through an extensive network of instrumentation deployed by the Integrated Test Range (ITR), Chandipur.

Importance

Defence Indigenisation

1. Strengthens India's self-reliance in advanced missile technology under the **Atmanirbhar Bharat** initiative.

Precision Strike Capability

1. Enhances the Indian Armed Forces' ability to neutralize high-value enemy targets with accuracy.

Air-to-Surface Warfare

1. Improves stand-off attack capabilities, allowing aircraft to strike targets from safer distances.

Strategic Defence Preparedness

1. Contributes to modernization of India's missile arsenal and overall deterrence capability.

DRDO Achievement

1. Demonstrates India's growing expertise in indigenous defence research and development.

About RudraM-II Missile

Feature	Details
Name	RudraM-II
Type	Air-to-Surface Missile
Developed By	DRDO
Launch Platform	Fighter Aircraft
Role	Precision strike against enemy targets

Key Features

1. Indigenous technology
2. High precision strike capability
3. Advanced guidance system
4. Suitable for engaging strategic targets
5. Enhances stand-off attack operations

Additional UPSC Facts

1. **DRDO Headquarters:** New Delhi
2. **Integrated Test Range (ITR):** Chandipur, Odisha
3. India has developed several indigenous missile systems including:
 - Agni Series
 - Prithvi Series
 - Akash

- BrahMos
- Astra
- RudraM Series

MCQ

Q4. RudraM-II, recently seen in news, is a:

- (a) Surface-to-Air Missile
- (b) Air-to-Air Missile
- (c) Air-to-Surface Missile
- (d) Anti-Ballistic Missile

Answer: (c) Air-to-Surface Missile

Climate Science Report warns India is losing capability to build indigenous scientific instruments

What is in News?

1. A group of Indian climate scientists has warned that India is gradually losing its capability to develop **indigenous scientific instruments** for climate and environmental monitoring.
2. The report highlights that dependence on imported equipment often results in calibration issues, affecting the accuracy and credibility of scientific data.
3. It also raises concerns about the long-term environmental impact of uncontrolled extraction of natural resources for renewable energy infrastructure.
4. The findings were released as part of the **Mega Science Vision (MSV) 2035** report.

Importance

Scientific Self-Reliance

1. Emphasizes the need for indigenous research instruments under the spirit of **Atmanirbhar Bharat**.
2. Dependence on foreign technology may affect data quality and strategic autonomy.

Climate Research

1. Accurate climate observations are essential for weather forecasting, disaster management, and climate change assessments.

Renewable Energy Transition

1. Highlights the environmental costs associated with mining and extraction of critical minerals needed for solar panels, batteries, and wind turbines.

Data Credibility

1. Uncalibrated scientific equipment can lead to inaccurate environmental and climate datasets.

Science & Technology Policy

1. Calls for strengthening domestic R&D, instrumentation manufacturing, and scientific infrastructure.

About Mega Science Vision (MSV) 2035

Feature	Details
Report	Mega Science Vision (MSV) 2035
Focus	Future scientific infrastructure and research priorities
Areas Covered	Climate science, astronomy, high-energy physics, Earth sciences
Key Concern	Indigenous instrument development and scientific capacity

Additional UPSC Facts

Challenges Highlighted

1. Dependence on imported scientific equipment
2. Calibration and maintenance issues
3. Limited domestic manufacturing ecosystem
4. Environmental impact of critical mineral extraction

Suggested Measures

1. Develop indigenous scientific instruments
2. Strengthen R&D funding
3. Promote domestic manufacturing of sensors and monitoring devices
4. Improve scientific infrastructure and technical manpower

MCQ

Q5. The Mega Science Vision (MSV) 2035 report is primarily related to:

- (a) Agricultural subsidy reforms
- (b) Future scientific research and infrastructure planning

- (c) Defence procurement policy
- (d) Urban housing development

Correct Answer: (b) Future scientific research and infrastructure planning

Central Advisory Committee reviews PM-AJAY Scheme and charts roadmap for Scheduled Caste upliftment

What is in News?

1. The **Central Advisory Committee (CAC)** under the Pradhan Mantri Anusuchit Jaati Abhyuday Yojana held a high-level review meeting in New Delhi.
2. The meeting was chaired by Virendra Kumar.
3. The committee reviewed implementation of PM-AJAY and discussed future strategies for the socio-economic development of **Scheduled Castes (SCs)**.
4. Emphasis was laid on improving livelihood opportunities, infrastructure, skill development, and monitoring mechanisms.

Importance

Scheduled Caste Empowerment

1. PM-AJAY is a flagship scheme aimed at the socio-economic upliftment of Scheduled Castes.

Inclusive Development

1. Supports livelihood generation, village development, and educational infrastructure for marginalized communities.

Monitoring & Governance

1. The review focused on improving transparency, accountability, and outcome-based implementation.

Rural Development

- Promotes development of SC-majority villages through targeted interventions.

Social Justice

- Contributes to constitutional goals of equality, social justice, and inclusive growth.

About PM-AJAY Scheme

Initiatives for the Welfare of Scheduled Caste

- Pre-Matric and Post-Matric Scholarship
- Scholarships for Higher Education for Young Achievers Scheme (SHREYAS)
- Scheme for Residential Education for Students in High Schools in Targeted Areas (SRESHTA)
- Pradhan Mantri Anusuchit Jaati Abhyuday Yojana (PM-AJAY)
- Protection of Civil Rights Act, 1955 and the Scheduled Castes and the Scheduled Tribes (Prevention of Atrocities) Act, 1989
- National Scheduled Castes Finance and Development Corporation (NSFDC)
- National Commission For Scheduled Castes (NCSC)
- Venture Capital Fund for Scheduled Castes (VCF-SC)
- Ambedkar Social Innovation and Incubation Mission (ASIIM)

Other Skill Development Schemes

Rural Self Employment and Training Institutes (RSETIs)

Provides free, residential skill training with credit linkage. Bank-led centres boost rural entrepreneurship and skill development.



PM Vishwakarma Yojana

Supports artisans and craftspeople with skill upgradation and credit. Provides marketing aid and incentives for digital payments.

Deen Dayal Upadhyaya Gramineen Kaushalya Yojana (DDU-GKY)

Enhances rural youth employability with a high placement rate. Trains and places lakhs of individuals in various sectors.

Feature	Details
Full Form	Pradhan Mantri Anusuchit Jaati Abhyuday Yojana
Ministry	Ministry of Social Justice & Empowerment
Target Group	Scheduled Castes (SCs)

Objective	Socio-economic upliftment and livelihood enhancement
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Major Components

- Adarsh Gram**
 - Development of SC-majority villages.
- Grant-in-Aid (GIA)**
 - Support for income-generating and livelihood activities.
- Hostel Component**
 - Educational support through hostel infrastructure for SC students.

Additional UPSC Facts

- PM-AJAY was formed by restructuring earlier SC welfare schemes.
- It aims to reduce poverty and improve socio-economic indicators among Scheduled Castes.
- The scheme promotes:
 - Skill development
 - Entrepreneurship
 - Infrastructure creation
 - Educational opportunities

MCQ

Q1. PM-AJAY Scheme is implemented by which Ministry?

- Ministry of Rural Development
- Ministry of Tribal Affairs
- Ministry of Social Justice and Empowerment
- Ministry of Minority Affairs

Answer: (c) Ministry of Social Justice and Empowerment

North Eastern Council (NEC) to hold 73rd Plenary Session in Shillong

What is in News?

- The North Eastern Council will convene its **73rd Plenary Session** in Shillong.
- The meeting will be chaired by Amit Shah, who is also the Chairman of NEC.

- Chief Ministers, Governors, and senior officials from all eight Northeastern states are expected to participate.
- The session will review regional development projects, connectivity initiatives, infrastructure growth, and socio-economic progress in Northeast India.

Importance

Regional Development

- NEC serves as the apex regional planning body for the socio-economic development of Northeast India.

Infrastructure & Connectivity

- Focuses on roads, railways, air connectivity, digital infrastructure, and power projects in the region.

Act East Policy

- Northeast India is the gateway to Southeast Asia and plays a key role in India's Act East Policy.

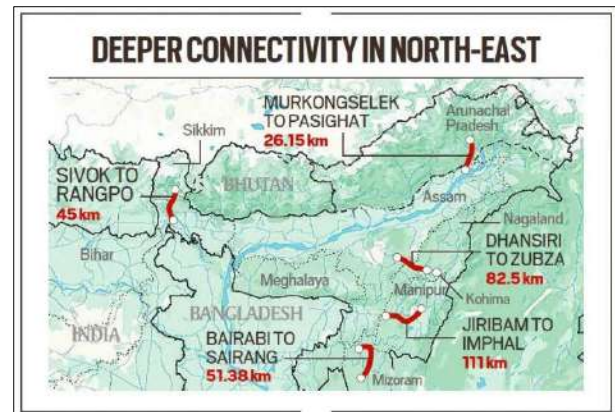
Cooperative Federalism

- Provides a platform for coordination between the Centre and Northeastern states.

Strategic Importance

- The region shares international borders with China, Myanmar, Bangladesh, Bhutan, and Nepal, making it strategically significant.

About North Eastern Council (NEC)



Feature	Details
Established	1971
Constitutional Status	Statutory Body
Headquarters	Shillong, Meghalaya
Governing Ministry	Ministry of Development of North Eastern Region (DoNER)
Chairman	Union Home Minister
Members	Governors & Chief Ministers of 8 Northeastern States

Additional UPSC Facts

Eight Northeastern States

- Assam
- Arunachal Pradesh
- Manipur
- Meghalaya
- Mizoram
- Nagaland
- Tripura
- Sikkim (*joined NEC in 2002*)

Major Functions of NEC

- Regional planning and coordination
- Infrastructure development
- Human resource development
- Tourism promotion
- Connectivity enhancement
- Economic growth initiatives

MCQ

Q2. The headquarters of the North Eastern Council (NEC) is located at:

- (a) Guwahati
(b) Itanagar
(c) Shillong
(d) Agartala
Answer: (c) Shillong

Orange-fronted Parakeets get a boost from 'super breeder' pair in New Zealand conservation effort

What is in News?

- Two critically endangered **Orange-fronted Parakeets (Kākāriki Karaka)** named **Nacho** and **Trixie** have significantly boosted the species' population in New Zealand.
- The pair produced **55 chicks in two years**, increasing the global population by over **10%**.
- Only about **450 individuals** remain worldwide, making it one of the world's rarest parrots.
- Conservationists are using captive breeding and predator control programs to prevent the species from going extinct.

Importance

Conservation Success Story

- Demonstrates how captive breeding can help recover critically endangered species.

Biodiversity Conservation

- Highlights the importance of species recovery programmes in preventing extinctions.

Threatened Island Ecosystems

- New Zealand is home to many endemic bird species vulnerable to invasive predators.

Genetic Management

- Controlled breeding helps maintain viable populations and genetic diversity.

Wildlife Conservation Models

- Useful example of ex-situ conservation under IUCN species recovery strategies.

About Orange-fronted Parakeet (Kākāriki Karaka)



Feature	Details
Common Name	Orange-fronted Parakeet
Local Name	Kākāriki Karaka
Distribution	New Zealand
Status	Critically Endangered
Estimated Population	~450 individuals
Major Threats	Predators, habitat loss, disease, climate change

Additional UPSC Facts

Conservation Measures

- Captive breeding programmes
- Predator-free sanctuaries
- Habitat restoration
- Release of captive-bred birds into the wild

New Zealand Biodiversity

- Home to unique endemic birds such as:
 - Kiwi
 - Kakapo
 - Orange-fronted Parakeet

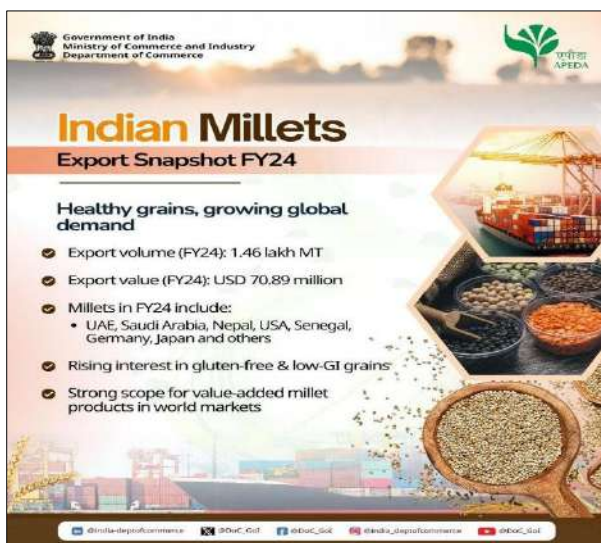
MCQ

Q3. The Orange-fronted Parakeet (Kākāriki Karaka), recently seen in news, is native to:

- (a) Australia
(b) Madagascar
(c) New Zealand
(d) Papua New Guinea

Answer: (c) New Zealand

Agricultural and Processed Food Products Export Development Authority (APEDA) – In News



Recently, the Agricultural and Processed Food Products Export Development Authority facilitated the **first-ever sea shipment of botanical-infused ready-to-cook millet functional foods** from Karnataka to **New Zealand**, marking a significant step in promoting India's value-added agri-food exports.

About APEDA

Agricultural and Processed Food Products Export Development Authority (APEDA) is a **statutory body** established by the Government of India under the:

Agricultural and Processed Food Products Export Development Authority Act, 1985

Nodal Ministry

APEDA functions under the:
Ministry of Commerce and Industry

Objectives

1. Promote the export of scheduled agricultural products.
2. Enhance India's share in global agri-food markets.
3. Improve quality standards and export competitiveness.
4. Support value-added agricultural exports.

Headquarters & Regional Presence

Headquarters

New Delhi

Functions of APEDA

Standard Setting

1. Prescribes standards and specifications for scheduled products.

Registration of Exporters

1. Registers exporters dealing in scheduled agricultural products.

Quality Inspection

1. Conducts inspections and quality assurance activities for export products.

Capacity Building

1. Provides training and skill development related to export-oriented industries.

Research & Development

1. Undertakes:
 - Market surveys
 - Feasibility studies
 - Product development initiatives

Financial Assistance

1. Supports exporters through:
 - Financial aid
 - Technical guidance
 - Market promotion assistance

APEDA and Organic Exports

APEDA serves as the Secretariat for:

National Accreditation Board
under the:

National Programme for Organic Production (NPOP)

1. Oversees organic certification systems.
2. Facilitates export of certified organic products.
3. Enhances global credibility of Indian organic produce.

Significance of Recent Millet Export

The shipment to New Zealand highlights:

1. Growing global demand for:
 - Millets
 - Functional foods
 - Healthy dietary products
2. Supports:
 - International Year of Millets legacy
 - Farmer income enhancement
 - Diversification of agricultural exports

Importance of APEDA

1. Promotes India's agricultural exports worldwide.
2. Supports:
 - Food processing sector
 - Organic farming
 - Farmer-producer organizations (FPOs)
3. Contributes to:
 - Foreign exchange earnings
 - Rural development
 - Agricultural value addition

UPSC Prelims Practice MCQ

Q1. Consider the following statements regarding APEDA:

1. APEDA is a statutory body established under an Act of Parliament.
2. It functions under the Ministry of Agriculture and Farmers Welfare.
3. APEDA acts as the Secretariat for the implementation of the National Programme for Organic Production (NPOP).

Which of the statements given above are correct?

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

Answer: (a) 1 and 3 only

Explanation:

1. **Statement 1:** Correct. APEDA was established under the APEDA Act, 1985.
2. **Statement 2:** Incorrect. It functions under the **Ministry of Commerce and Industry**.
3. **Statement 3:** Correct. APEDA is the implementing authority for NPOP and serves as its Secretariat.

UPSC Quick Facts

Feature	Details
Established	1986
Legal Basis	APEDA Act, 1985
Ministry	Ministry of Commerce & Industry
Headquarters	New Delhi
Key Role	Promotion of agricultural and processed food exports
Organic Exports	Implements NPOP
Recent News	First sea shipment of millet-based functional foods to New Zealand

Source: PIB.

National e-Vidhan Application (NeVA) – In News

Recently, the **West Bengal Legislative Assembly** signed a Memorandum of Understanding (MoU) for the implementation of the **National e-Vidhan Application (NeVA)**, a major step towards creating a **paperless and digitally empowered legislature**.



About National e-Vidhan Application (NeVA)

National e-Vidhan Application is a **digital platform designed to modernize and digitize the legislative functioning of State Legislatures and Union Territory Assemblies across India.**

Key Features

Paperless Legislature

1. Aims to transform all State Legislatures into **paperless institutions.**
2. Integrates legislative business through the concept of **"One Nation, One Application."**

Digital Access

Provides real-time access to:

1. Bills
2. Agendas
3. Questions
4. Notices
5. Reports
6. Bulletins
7. Legislative documents

Multilingual Support

1. Supports multiple languages.
2. Enhances accessibility across diverse states and regions.

Device Agnostic Platform

1. Accessible through:

- Smartphones
- Tablets
- Laptops
- Desktop computers

Objectives of NeVA

1. Improve efficiency of legislative proceedings.
2. Enhance transparency and accountability.
3. Facilitate smooth conduct of House business.
4. Enable legislators to access information anytime and anywhere.

Technical Infrastructure

MeghRaj Cloud

NeVA is hosted on:

MeghRaj

India's national cloud infrastructure that provides:

1. Scalability
2. Data security
3. Reliability
4. Robust storage and processing capabilities

IN NeVA and Digital India

NeVA is one of the **Mission Mode Projects (MMPs)** under:

Digital India Programme
and contributes to:

1. E-Governance
2. Digital Legislature
3. Paperless Administration
4. Citizen-centric governance

Benefits of NeVA

For Legislators

1. Quick access to legislative documents.
2. Improved participation in debates and discussions.
3. Better management of legislative business.

For Legislatures

1. Reduced paper consumption.
2. Faster document processing.
3. Improved record management.

For Citizens

1. Greater transparency in legislative functioning.
2. Easier access to public legislative information.

Significance

1. Promotes **Digital Governance** at the legislative level.
2. Supports environmental sustainability through reduced paper usage.
3. Strengthens democratic institutions through technology-enabled governance.

UPSC Prelims Practice MCQ

Q2. Consider the following statements regarding the National e-Vidhan Application (NeVA):

1. NeVA aims to digitize the functioning of State Legislatures and Union Territory Assemblies.
2. It is one of the Mission Mode Projects under the Digital India Programme.
3. NeVA is hosted on India's MeghRaj cloud infrastructure.

Which of the statements given above are correct?

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

Correct Answer: (a) 1, 2 and 3

Explanation:

1. **Statement 1:** Correct.
2. **Statement 2:** Correct.
3. **Statement 3:** Correct.

UPSC Quick Facts

Feature	Details
Full Form	National e-Vidhan Application
Objective	Paperless Legislatures
Programme	Digital India
Platform	One Nation, One Application
Cloud Infrastructure	MeghRaj
Coverage	State Legislatures & UT Assemblies

Key Benefit

Digital, transparent and efficient legislative functioning

Source: PIB.

Ministry of Coal to organize Roadshow on Coal and Lignite Gasification Projects in Hyderabad

What is in News?

The Ministry of Coal is organizing a **Roadshow on Coal and Lignite Gasification Projects** in Hyderabad. The event aims to promote investment, technology partnerships, and stakeholder participation in coal gasification projects.

1. It is part of the government's strategy to utilize domestic coal resources in a cleaner and more efficient manner.
2. The initiative supports India's efforts toward energy security and reducing dependence on imported fuels.

Importance

Clean Coal Technology

1. Coal gasification converts coal into **syngas (synthetic gas)**, enabling cleaner utilization of coal resources.

Energy Security

1. Helps reduce dependence on imported natural gas, methanol, ammonia, and other fuels.

Atmanirbhar Bharat

1. Promotes indigenous utilization of India's vast coal reserves.

Industrial Applications

1. Syngas can be used for:
 - Fertilizer production
 - Methanol manufacturing
 - Hydrogen production
 - Power generation
 - Petrochemicals

Carbon Emission Reduction

1. Gasification is considered relatively cleaner than direct coal combustion.

About Coal Gasification

Feature	Details
Process	Conversion of coal into syngas
Main Product	Syngas (CO + H ₂)
Feedstock	Coal or lignite
Uses	Fertilizers, chemicals, hydrogen, fuels
Benefit	Cleaner utilization of coal

How Coal Gasification Works

1. Coal reacts with oxygen, steam, and controlled heat.
2. Produces **Carbon Monoxide (CO)** and **Hydrogen (H₂)**.
3. Syngas can be converted into various value-added products.

Additional UPSC Facts

National Coal Gasification Mission

1. India aims to achieve **100 million tonnes of coal gasification by 2030**.
2. Supported through financial incentives and policy reforms.

Lignite

1. A low-grade brown coal with relatively lower carbon content.
2. Found extensively in:
 - Tamil Nadu (Neyveli)
 - Rajasthan
 - Gujarat

MCQ

Q1. Coal gasification primarily converts coal into:

- (a) Coke only
- (b) Syngas (CO + H₂)
- (c) Charcoal
- (d) Liquid petroleum

Answer: (b) Syngas (CO + H₂)

Government extends Credit Guarantee Scheme for Microfinance Institutions (CGFMU) till March 2028

What is in News?

1. The Government of India has extended the **Credit Guarantee Scheme for Microfinance Institutions (CGFMU)** till **31 March 2028**.
2. The scheme aims to strengthen the microfinance sector by providing credit guarantees to eligible lending institutions.
3. It supports increased flow of credit to **Micro Finance Institutions (MFIs)** and promotes financial inclusion.
4. The extension is expected to benefit low-income households and underserved sections of society.

Importance

Financial Inclusion

1. Enhances access to formal credit for low-income and vulnerable households.

Support to Microfinance Sector

1. Encourages banks and financial institutions to lend more confidently to MFIs.

Women Empowerment

1. A large share of microfinance borrowers are women entrepreneurs and Self-Help Group (SHG) members.

Rural Economic Development

1. Improves access to credit for small businesses, livelihood activities, and self-employment ventures.

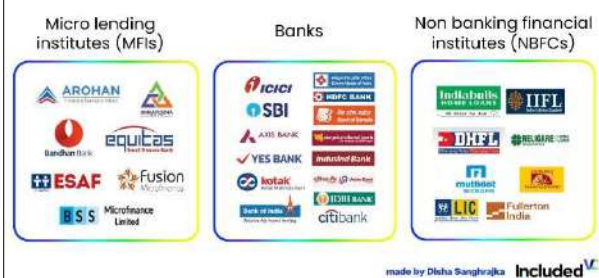
Inclusive Growth

1. Supports poverty reduction and economic empowerment through affordable finance.

About CGFMU (Credit Guarantee Fund for Micro Units)



Leading micro lending incumbents in India



Feature	Details
Scheme	Credit Guarantee Scheme for Microfinance Institutions (CGFMU)
Objective	Provide credit guarantee support to lenders
Target Beneficiaries	Low-income households and microfinance borrowers
Validity Extended Till	31 March 2028
Focus	Financial inclusion and credit access

Additional UPSC Facts

Microfinance

- Provides small loans and financial services to individuals who lack access to traditional banking.
- Common beneficiaries include:
 - Women entrepreneurs
 - SHGs
 - Small traders
 - Rural households

Benefits of Credit Guarantee Schemes

- Reduce lending risk for banks.
- Improve credit flow to priority sectors.

- Encourage lending to underserved populations.

Financial Inclusion Initiatives in India

- Pradhan Mantri Jan Dhan Yojana
- MUDRA Yojana
- SHG–Bank Linkage Programme
- Digital financial inclusion initiatives

MCQ

Q2. The primary objective of the Credit Guarantee Scheme for Microfinance Institutions (CGFMU) is to:

- Subsidize agricultural exports
- Provide guarantees to encourage lending through MFIs
- Finance large industries
- Support foreign direct investment

Correct Answer: (b) Provide guarantees to encourage lending through MFIs

Gharials

Why in News?

Recently, **31 gharial hatchlings** were released into the **Bagaha region** along the **Gandak River** in **Bihar** as part of conservation efforts aimed at strengthening the population of this critically endangered crocodilian.

About Gharials

- The **Gharial** is a freshwater crocodilian belonging to the family **Crocodylidae**.
- The name "gharial" is derived from the Hindi word '**ghara**', referring to the pot-shaped bulb present on the snout of adult males.
- It is primarily found in **deep, fast-flowing freshwater rivers** with sandy banks used for nesting.
- Gharials are among the most specialized crocodilians and are highly adapted for aquatic life.

Distribution

- Historically found across the river systems of the Indian subcontinent.

2. Present distribution includes parts of:

- India
- Nepal
- Bangladesh
- Bhutan
- Pakistan
- Myanmar

3. In India, major populations survive in:

- Chambal River
- Girwa River
- Gandak River

Key Features of Gharials

1. One of the **largest crocodilian species** in the world.
2. Possesses a **long, narrow, and elongated snout**, ideal for catching fish.
3. Covered with smooth, non-overlapping scales.
4. Adult males develop a distinctive bulb-like structure called a '**ghara**' at the tip of the snout.
5. They are predominantly **piscivorous (fish-eating)**.
6. Unlike many crocodilians, gharials spend most of their time in water and rarely move far onto land except for basking and nesting.

Reproduction

1. Breeding season generally occurs between **November and January**.
2. Females lay eggs during **March–May** on sandy riverbanks.

Ecological Importance

1. As top aquatic predators, gharials help maintain the ecological balance of river ecosystems.
2. They regulate fish populations and serve as indicators of healthy freshwater habitats.

Conservation Status

1. **IUCN Red List: Critically Endangered (CR)**
2. **CITES: Appendix I**
3. **Wild Life (Protection) Act, 1972: Schedule I**

UPSC Prelims Practice MCQ

Q3. With reference to the Gharial (*Gavialis gangeticus*), consider the following statements:

1. It is primarily a fish-eating crocodilian.
2. Adult male gharials possess a bulb-like structure called a '**ghara**' on their snout.
3. The species is listed as Vulnerable in the IUCN Red List.

Which of the statements given above is/are correct?

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

Answer: (a) 1 and 2 only

Explanation:

1. **Statement 1 is correct:** Gharials are predominantly piscivorous.
2. **Statement 2 is correct:** Adult males develop a characteristic bulb-like '**ghara**' on the snout.
3. **Statement 3 is incorrect:** The gharial is classified as **Critically Endangered**, not Vulnerable, on the IUCN Red List.

Zojila Tunnel

Why in News?

Recently, the **Zojila Tunnel** achieved its final breakthrough with the blasting of the last remaining section, marking a major milestone in India's infrastructure development and enhancing all-weather connectivity between Jammu & Kashmir and Ladakh.

About Zojila Tunnel

1. The **Zojila Tunnel** is a strategic road tunnel under construction in the Himalayan region.
2. It will connect **Sonamarg** with **Drass**.
3. The tunnel is being built beneath the **Zoji La Pass** on **NH-1**.
4. It will provide year-round connectivity between **Jammu and Kashmir** and **Ladakh**.

which are often cut off during winter due to heavy snowfall.

Key Features

1. Located at an altitude of approximately **11,578 feet** above sea level.
2. Horseshoe-shaped, single-tube tunnel.
3. Length: **13 km**
4. Width: **9.5 metres**
5. Height: **7.57 metres**
6. It will be the **world's longest single-tube bi-directional road tunnel at such a high altitude.**
7. Travel time across the Zoji La region is expected to reduce from about **90 minutes to nearly 15 minutes.**

Construction Technology

1. The tunnel is being constructed using the **New Austrian Tunnelling Method.**
2. NATM is particularly suitable for:
 - Fragile Himalayan geology
 - Variable rock conditions
 - Complex mountainous terrain

Significance

1. Ensures all-weather connectivity to Ladakh.
2. Strengthens strategic and border infrastructure.
3. Boosts tourism, trade, and economic development.
4. Improves mobility for civilians and armed forces.
5. Enhances disaster response and emergency access in the region.

UPSC Prelims Practice MCQ

Q4. Consider the following statements regarding the Zojila Tunnel:

1. It is being constructed beneath the Zoji La Pass on the Srinagar–Leh Highway.
2. It will provide all-weather connectivity between Jammu & Kashmir and Ladakh.
3. It is being constructed using the New Austrian Tunnelling Method (NATM).

Which of the statements given above is/are correct?

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

Answer: (d) 1, 2 and 3

Explanation:

1. **Statement 1 is correct:** The tunnel is being built beneath Zoji La Pass on NH-1.
2. **Statement 2 is correct:** It will provide year-round connectivity between Jammu & Kashmir and Ladakh.
3. **Statement 3 is correct:** The project is being executed using the **New Austrian Tunnelling Method (NATM)**, suitable for Himalayan terrain.

Masroor Rock-Cut Temples

Why in News?

Recently, the **Masroor Rock-Cut Temples** in Himachal Pradesh gained attention as one of India's most remarkable yet lesser-known heritage sites, noted for their unique monolithic architecture and historical significance.

About Masroor Rock-Cut Temples

1. The **Masroor Rock-Cut Temples** are an early **8th-century rock-cut temple complex** located in the **Kangra Valley** near the Beas River in **Himachal Pradesh.**
2. They are often referred to as the "**Ellora of Himachal**" and the "**Himalayan Pyramid**" due to their distinctive architecture.
3. The temple complex is carved out of a single rock and represents one of the finest examples of monolithic rock-cut architecture in North India.

Historical Background



1. Archaeological studies suggest that the temples were constructed around the **8th century CE**, approximately 1,200 years ago.
2. Their architectural style shows similarities with the **Gupta-era Nagara tradition**.
3. The site was first brought to wider scholarly attention by **Henry Shuttleworth** in 1913.
4. It was subsequently surveyed by the **Archaeological Survey of India** in 1915.

Architectural Features

1. The complex consists of **15 monolithic rock-cut temples**.
2. Built in the **Nagara style** of North Indian temple architecture.
3. Dedicated primarily to:
 - Lord Shiva
 - Lord Rama
 - Goddess Sita
 - Lord Lakshmana
4. Unlike most Hindu temples that face east, the Masroor temples face **northeast towards the Dhauladhar Range**.
5. The complex follows a **symmetrical square-grid layout**.
6. The main shrine is surrounded by smaller shrines arranged in a **mandala pattern**.
7. The temples feature:
 - Elaborate carvings
 - Vedic and Puranic depictions
 - Decorative friezes narrating episodes from Hindu mythology
8. A sacred water tank is located in front of the temple complex.

Damage and Conservation

1. Significant portions of the sculptures and carvings have been damaged, largely due to earthquakes and natural weathering over centuries.
2. The site remains an important archaeological and cultural heritage monument of India.

Significance

1. One of the few surviving monolithic rock-cut temple complexes in North India.
2. Reflects the evolution of Nagara temple architecture.
3. Important for understanding early medieval Indian art, religion, and architecture.

UPSC Prelims Practice MCQ

Q1. With reference to the Masroor Rock-Cut Temples, consider the following statements:

1. They are located in the Kangra Valley of Himachal Pradesh.
2. The temple complex is built in the Nagara style of architecture.
3. The temples were constructed as freestanding structures using granite blocks.

Which of the statements given above is/are correct?

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

Answer: (a) 1 and 2 only

Explanation:

1. **Statement 1 is correct:** The Masroor Rock-Cut Temples are situated in Kangra Valley, Himachal Pradesh.
2. **Statement 2 is correct:** The complex represents the **Nagara style** of North Indian temple architecture.
3. **Statement 3 is incorrect:** The temples are **monolithic rock-cut structures**, carved from a single rock mass rather than built using separate granite blocks.

Oilseeds Kisaan Mitra

Why in News?

Recently, the **Indian Council of Agricultural Research** launched **Oilseeds Kisaan Mitra**, an AI-powered digital advisory platform designed to

provide scientific guidance to oilseed farmers across India through WhatsApp.

About Oilseeds Kisaan Mitra

1. **Oilseeds Kisaan Mitra** is a **WhatsApp-based Artificial Intelligence (AI) advisory service** for farmers.
2. It has been developed by the **ICAR-Indian Institute of Oilseeds Research**, Hyderabad.
3. The initiative aims to strengthen the cultivation of major oilseed crops such as:
 - Groundnut
 - Mustard
 - Sesame
 - Sunflower
 - Soybean
 - Niger
 - Other oilseed crops
4. It seeks to improve farmers' access to scientific and research-based agricultural information.

Key Features

1. Provides **24x7 research-based advisory support** in multiple Indian languages.
2. AI-powered chatbot delivers instant guidance on:
 - Variety selection
 - Crop management
 - Pest and disease control
 - Irrigation practices
 - Post-harvest management
3. The service is available **free of cost**.
4. Farmers can access the platform directly through **WhatsApp**, without requiring any special application.

How It Works

1. Uses advanced Artificial Intelligence integrated with a scientific knowledge base developed from the expertise of various ICAR institutes.
2. Understands queries submitted in regional languages and provides crop-specific responses.
3. Covers the entire crop cycle, including:
 - Seed and variety selection

- Agronomic practices
- Pest and disease management
- Irrigation scheduling
- Harvesting and post-harvest guidance

Participating ICAR Institutes

The knowledge platform has been developed collaboratively with:

1. **ICAR-National Soybean Research Institute**
2. **ICAR-Indian Institute of Groundnut Research**
3. **ICAR-Indian Institute of Rapeseed and Mustard Research**
4. **ICAR-PC Unit (Sesame & Niger)**

Significance

1. Promotes scientific farming practices.
2. Enhances productivity of oilseed crops.
3. Supports India's efforts toward **self-reliance in edible oils**.
4. Bridges the gap between agricultural research and farmers.

UPSC Prelims Practice MCQ

Q2. Consider the following statements regarding Oilseeds Kisaan Mitra:

1. It is a WhatsApp-based AI-powered advisory service for farmers.
2. It has been developed by ICAR-Indian Institute of Oilseeds Research (ICAR-IIOR), Hyderabad.
3. The platform provides guidance only on post-harvest management.

Which of the statements given above is/are correct?

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

Answer: (a) 1 and 2 only

Explanation:

1. **Statement 1 is correct:** Oilseeds Kisaan Mitra is a WhatsApp-based AI advisory platform.

2. **Statement 2 is correct:** It was developed by ICAR-IIOR, Hyderabad.
3. **Statement 3 is incorrect:** The platform covers the **entire crop cycle**, including variety selection, crop management, pest control, irrigation, and post-harvest practices.

Network Survey Vehicle (NSV)

Why in News?

Recently, the **Ministry of Road Transport and Highways** announced the nationwide deployment of advanced **Network Survey Vehicles (NSVs)** to improve monitoring, maintenance, and management of India's National Highway network.

About Network Survey Vehicle (NSV)

1. A **Network Survey Vehicle (NSV)** is a specialized infrastructure assessment and management vehicle equipped with advanced sensors and data acquisition systems.
2. It is designed to systematically collect information on the condition and inventory of National Highways.
3. The technology enables data-driven planning and maintenance of road infrastructure.

Key Features

1. Equipped with:
 - Laser profilers
 - **Global Positioning System (GPS)**
 - High-resolution cameras
 - Video image processing systems
 - **Inertial Measurement Units (IMU)**
 - **Distance Measuring Indicator (DMI)**
2. Uses advanced **3D laser-based surveying technology**.
3. Can survey up to **300 km of road per day**.
4. Usually deployed as a specially designed van or SUV fitted with multiple sensors and instruments.

Working of NSV

1. Captures detailed information on road conditions and infrastructure.
2. Identifies **13 categories of road defects**, including:
 - Cracks
 - Ravelling
 - Potholes
 - Patchwork
 - Rutting
 - Lane marking deficiencies
3. Collects data on:
 - Carriageway type
 - Road type
 - Pavement condition
 - Shoulder width
 - Topography
 - Median details
 - Right of Way (RoW)
 - Utilities and land use
4. Survey data is uploaded to **National Highways Authority of India's** AI-enabled **Data Lake** platform for analysis and decision-making.
5. Raw data is encrypted and transmitted to centralized processing centres within 48 hours.
6. Findings are converted into actionable insights, significantly reducing the time required for highway condition assessment.

Significance

1. Improves highway maintenance and safety.
2. Enables predictive and evidence-based infrastructure management.
3. Supports efficient allocation of maintenance resources.
4. Enhances quality monitoring of National Highway projects.
5. Contributes to the development of smart and resilient transport infrastructure.

UPSC Prelims Practice MCQ

Q3. Consider the following statements regarding Network Survey Vehicles (NSVs):

1. They are equipped with GPS, laser profilers, and high-resolution cameras.

2. They are used to collect data on the condition of National Highways.
3. Data collected by NSVs is analyzed through NHAI's AI-based Data Lake platform.

Which of the statements given above is/are correct?

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

Answer: (d) 1, 2 and 3

Explanation:

1. **Statement 1 is correct:** NSVs use advanced equipment such as GPS, laser profilers, IMUs, and high-resolution cameras.
2. **Statement 2 is correct:** Their primary purpose is to assess road inventory and highway conditions.
3. **Statement 3 is correct:** The collected data is uploaded to NHAI's AI-enabled Data Lake platform for analysis and infrastructure planning.

Coal Exchanges can help address India's energy shortages and improve market efficiency

What is in News?

1. Experts have argued that **coal exchanges** can play a significant role in balancing energy shortages and improving transparency in India's coal market.
2. With record domestic coal production, a market-based coal exchange mechanism could facilitate efficient trading of coal among producers, consumers, and intermediaries.
3. Such exchanges can aid in price discovery, improve market liquidity, and reduce dependence on bilateral contracts.
4. The proposal gains importance as India seeks to ensure reliable fuel supply for its growing power sector.

Importance

Energy Security

1. Coal remains India's primary source of electricity generation, contributing around 70% of power production.

Market-Based Reforms

1. Coal exchanges can introduce transparency, competition, and efficient allocation of resources.

Price Discovery

1. Real-time trading helps determine fair market prices based on demand and supply.

Reducing Supply Bottlenecks

1. Facilitates movement of coal from surplus regions to deficit areas.

Power Sector Efficiency

1. Ensures better fuel availability for thermal power plants and industrial consumers.

About Coal Exchanges

Feature	Details
Purpose	Trading of coal through market platforms
Benefits	Transparency, liquidity, price discovery
Participants	Coal producers, power companies, industries, traders
Outcome	Efficient allocation of coal resources

Functions of Coal Exchanges

1. Spot market trading
2. Price discovery
3. Inventory management
4. Supply-demand balancing
5. Market transparency

Additional UPSC Facts

Coal Sector in India

1. India is the world's **second-largest producer and consumer of coal**.
2. Major coal-producing states:
 - Odisha
 - Chhattisgarh
 - Jharkhand

- Madhya Pradesh
- Telangana

Coal Types

Type	Carbon Content
Anthracite	Highest
Bituminous	High
Lignite	Low
Peat	Lowest

Major Institutions

1. Coal India Limited – world's largest coal-producing company.
2. Coal Controller Organisation – responsible for coal quality monitoring and regulation.

MCQ

Q4. The primary objective of a coal exchange is to:

- (a) Regulate coal mine ownership
- (b) Facilitate transparent market-based coal trading and price discovery
- (c) Increase coal imports exclusively
- (d) Levy taxes on coal production

Answer: (b) Facilitate transparent market-based coal trading and price discovery

Giant's Causeway

Why in News?

Recently, geochronologists studying the **Giant's Causeway** discovered that the site was formed over **5.5 million years**, around **8 million years less** than earlier estimates, providing new insights into its geological evolution.

About Giant's Causeway

1. The **Giant's Causeway** is located on the northeastern coast of **Antrim Plateau**.
2. It consists of approximately **40,000 interlocking basalt columns** that extend from the coastline into the sea.
3. The formation stretches for nearly **6 kilometres** along the coast.

4. Most columns are **hexagonal**, though some have four, five, seven, or eight sides.
5. The columns vary in height and create a distinctive stepping-stone appearance.
6. This unique landscape gave rise to the legend that it was built by a giant, hence the name **"Giant's Causeway."**
7. It was designated a **UNESCO World Heritage Site** in **1986**.

Formation of Giant's Causeway

1. The formation originated during the **Paleogene Period**, around **50–60 million years ago**.
2. It was created by extensive **volcanic activity** in the region.
3. Molten basaltic lava erupted through layers of chalk, forming a volcanic plateau.
4. As the lava cooled, it contracted and developed fractures.
5. Continued cooling caused the rock to split into polygonal columns, predominantly hexagonal in shape.
6. Differential cooling and contraction produced the spectacular columnar basalt structures visible today.

Geological Significance

1. One of the world's finest examples of **columnar basalt formation**.
2. Provides valuable evidence of ancient volcanic processes.
3. Serves as an important site for geological and geomorphological studies.

UPSC Prelims Practice MCQ

Q1. With reference to the Giant's Causeway, consider the following statements:

1. It is located in Northern Ireland.
2. The formation mainly consists of interlocking basalt columns.
3. It was formed primarily due to volcanic activity and cooling of lava.

Which of the statements given above is/are correct?

(a) 1 and 2 only

(b) 2 and 3 only

(c) 1 and 3 only

(d) 1, 2 and 3

Answer: (d) 1, 2 and 3

Explanation:

1. **Statement 1 is correct:** Giant's Causeway is situated on the coast of Northern Ireland.
2. **Statement 2 is correct:** The site contains about 40,000 basalt columns.
3. **Statement 3 is correct:** The columns were formed through volcanic activity followed by cooling and contraction of basaltic lava.

Tetanus

Why in News?

Recently, health authorities reported a resurgence of **Tetanus** cases in the United States, highlighting the continued importance of vaccination and public awareness against this potentially life-threatening disease.

About Tetanus

1. **Tetanus**, commonly known as **Lockjaw**, is a serious bacterial disease that affects the **nervous system**.
2. It is caused by a toxin produced by the bacterium **Clostridium tetani**.
3. The bacteria usually enter the body through **cuts, puncture wounds, or open injuries**.
4. *Clostridium tetani* spores are commonly found in:
 - Soil
 - Dust
 - Animal and human waste
5. Tetanus is **not a contagious disease** and does **not spread from person to person**.
6. It is more common in warmer climates and in areas with inadequate immunization coverage.

Symptoms of Tetanus

1. Symptoms generally appear **3 to 21 days** after infection.

2. The characteristic symptom is **lockjaw**, where the jaw muscles become stiff and difficult to move.
3. Other symptoms include:
 - Painful muscle stiffness
 - Severe muscle spasms
 - Difficulty swallowing
 - Headache
 - Fever and sweating
 - Increased blood pressure and heart rate
 - Seizures in severe cases

Complications

Tetanus can lead to serious health problems such as:

1. **Laryngospasm** (spasm of vocal cords)
2. Breathing difficulties
3. **Aspiration pneumonia**
4. Bone fractures due to severe muscle contractions
5. Pulmonary complications
6. Death in untreated severe cases

Treatment

1. There is **no definitive cure** for tetanus.
2. Treatment focuses on:
 - Neutralizing the toxin
 - Managing muscle spasms
 - Treating wounds
 - Providing supportive care
3. Recovery may take several weeks or months.

Prevention

1. Tetanus is **completely preventable through vaccination**.
2. Protection is provided by **tetanus-containing vaccines** such as DPT/Tdap.
3. Booster doses are recommended approximately every **10 years**.
4. Vaccination during pregnancy helps protect newborns from neonatal tetanus.

Significance

1. Tetanus remains a major public health concern in areas with low immunization coverage.

2. Maintaining high vaccination rates is crucial to preventing outbreaks and reducing mortality.

UPSC Prelims Practice MCQ

Q2. Consider the following statements regarding Tetanus:

1. It is caused by the bacterium *Clostridium tetani*.
2. Tetanus spreads from person to person through respiratory droplets.
3. Vaccination is an effective method of preventing tetanus.

Which of the statements given above is/are correct?

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

Answer: (c) 1 and 3 only

Explanation:

1. **Statement 1 is correct:** Tetanus is caused by *Clostridium tetani*.
2. **Statement 2 is incorrect:** Tetanus is **not contagious** and does not spread from person to person.
3. **Statement 3 is correct:** Vaccination is the most effective way to prevent tetanus.

Arbitrage Funds**Why in News?**

Recently, **Arbitrage Funds** have gained attention as investors seek to benefit from pricing differences in futures and cash markets amid changing market conditions.

About Arbitrage Funds

1. Arbitrage Funds are **equity-oriented hybrid mutual funds** that aim to generate returns by exploiting price differences of the same asset in different markets.
2. The strategy involves simultaneously **buying and selling** the same security in different markets to earn risk-adjusted returns.

3. These funds primarily benefit from temporary price mismatches between:
 - Spot (cash) market and futures market
 - Different stock exchanges
4. The objective is to capture the **price spread** rather than rely on long-term appreciation of a stock.

How Arbitrage Funds Work

1. Fund managers purchase a stock in the cash market and simultaneously sell it in the futures market.
2. The difference between the buying and selling prices becomes the profit opportunity.
3. When arbitrage opportunities are limited, the fund may invest in:
 - Short-term debt instruments
 - Money market securities
4. According to **Securities and Exchange Board of India** regulations, at least **65% of the fund's assets** must be invested in equities and equity-related instruments to qualify as an equity-oriented fund.

Benefits of Arbitrage Funds**Low Risk**

1. Since the buy and sell positions are hedged, market risk is relatively low.

Tax Efficiency

1. Gains from units held for more than one year are treated as **Long-Term Capital Gains (LTCG)** under applicable tax provisions.

High Liquidity

1. Investors can redeem their investments relatively easily.

Diversification

1. Investments are spread across various sectors and instruments, reducing concentration risk.

Limitations**Market Dependency**

1. Returns depend on the availability of arbitrage opportunities.
2. Lower market volatility often reduces profit potential.

Limited Long-Term Wealth Creation

1. Returns are generally moderate compared to pure equity funds.

Interest Rate Impact

1. Debt and money market investments may be affected by changes in interest rates.

Significance

1. Suitable for conservative investors seeking better returns than traditional savings instruments with relatively lower risk.
2. Often used as a short-term parking avenue during periods of market uncertainty.

UPSC Prelims Practice MCQ

Q3. Consider the following statements regarding Arbitrage Funds:

1. They seek to profit from price differences of the same asset in different markets.
2. Arbitrage Funds are classified as equity-oriented hybrid mutual funds.
3. Their returns depend entirely on long-term appreciation of stocks.

Which of the statements given above is/are correct?

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

Answer: (a) 1 and 2 only

Explanation:

1. **Statement 1 is correct:** Arbitrage Funds earn returns by exploiting temporary price differences between markets.
2. **Statement 2 is correct:** They are categorized as equity-oriented hybrid mutual funds under SEBI norms.
3. **Statement 3 is incorrect:** Returns are generated primarily through **arbitrage opportunities**, not long-term stock appreciation.

Atal Innovation Mission (AIM)**Why in News?**

Recently, the **Atal Innovation Mission** and **La Fondation Dassault Systèmes** launched the **Indo-France ATL Bridge** to strengthen innovation-driven collaboration between India and France.

About Atal Innovation Mission (AIM)

1. **Atal Innovation Mission (AIM)** is the Government of India's flagship initiative to promote innovation and entrepreneurship.
2. It was launched in **2016** under **NITI Aayog**.
3. AIM seeks to create and promote a culture of innovation across schools, universities, startups, industries, and research institutions.

Objectives of AIM

1. Foster creativity and problem-solving among young minds.
2. Promote entrepreneurship and startup development.
3. Encourage collaboration among academia, industry, and government.
4. Build a robust innovation ecosystem across the country.
5. Support technological advancement and research-driven growth.

Key Initiatives Under AIM**Atal Tinkering Laboratories (ATL)**

1. Established in schools to nurture innovation among students.
2. Targeted primarily at students aged **12 years and above**.
3. Provides access to modern tools and technologies.
4. Focuses on **STEM (Science, Technology, Engineering, and Mathematics)** education.
5. Encourages hands-on learning, design thinking, and problem-solving.

Atal Incubation Centres (AIC)

1. Supports startups and entrepreneurs through incubation facilities.
2. Provides:
 - Infrastructure
 - Mentorship

- Networking opportunities
- Access to funding
- 3. Helps startups scale innovative ideas into sustainable businesses.

Atal Research and Innovation for Small Enterprises (ARISE)

1. Designed to strengthen innovation in **MSMEs and startups**.
2. Encourages industry-oriented research and product development.
3. Supports the creation of innovative solutions for national challenges.
4. Central Government ministries and departments often act as initial clients for developed solutions.

Significance

1. Promotes innovation-led economic growth.
2. Encourages entrepreneurship among youth.
3. Strengthens India's startup ecosystem.
4. Supports the vision of **Atmanirbhar Bharat** through indigenous innovation.
5. Enhances global collaboration in science, technology, and innovation.

UPSC Prelims Practice MCQ

Q4. Consider the following statements regarding the Atal Innovation Mission (AIM):

1. It was launched under NITI Aayog in 2016.
2. Atal Tinkering Laboratories (ATLs) promote STEM-based learning among school students.
3. Atal Incubation Centres (AICs) are established exclusively for large industries.

Which of the statements given above is/are correct?

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

Answer: (a) 1 and 2 only

Explanation:

1. **Statement 1 is correct:** AIM was launched in 2016 under NITI Aayog.
2. **Statement 2 is correct:** ATLs promote STEM education, innovation, and hands-on learning among students.
3. **Statement 3 is incorrect:** AICs support **startups and entrepreneurs**, not exclusively large industries.

Joint Crediting Mechanism (JCM)

Why in News?

Recently, **India** and **Japan** adopted the Rules of Implementation for the **Joint Crediting Mechanism (JCM)** under **Article 6.2 of the Paris Agreement**, marking a significant step in bilateral climate cooperation.

About Joint Crediting Mechanism (JCM)

1. The **Joint Crediting Mechanism (JCM)** is a bilateral carbon-crediting framework proposed by Japan and officially launched in **2013**.
2. It aims to promote the deployment of **advanced decarbonization technologies and infrastructure** in partner countries through Japanese investment and technical cooperation.
3. The mechanism supports sustainable development while contributing to greenhouse gas emission reductions.

Objectives

1. Facilitate transfer of low-carbon and climate-friendly technologies.
2. Support achievement of climate goals and **Nationally Determined Contributions (NDCs)**.
3. Quantify emission reductions and allocate carbon credits between participating countries.
4. Promote sustainable economic development in partner nations.

Key Features



1. Operates as a **bilateral mechanism** aligned with **Article 6 of the Paris Agreement**.
2. Functions under the framework of the **United Nations Framework Convention on Climate Change**.
3. Complements existing market-based climate mechanisms such as:
 - Clean Development Mechanism (CDM)
 - Joint Implementation (JI)
4. India is among the **31 partner countries** participating in the JCM.

Priority Areas

The mechanism focuses on sectors such as:

1. Renewable energy with storage
2. Sustainable Aviation Fuel (SAF)
3. Compressed Biogas (CBG)
4. Green Hydrogen
5. Green Ammonia
6. Other hard-to-abate industrial sectors

Significance

1. Strengthens India–Japan climate partnership.
2. Encourages investment in clean technologies.
3. Supports India's transition toward a low-carbon economy.
4. Helps achieve global climate mitigation targets under the Paris Agreement.

UPSC Prelims Practice MCQ

Q1. Consider the following statements regarding the Joint Crediting Mechanism (JCM):

1. It was proposed by Japan and officially launched in 2013.
2. It is a bilateral mechanism aligned with Article 6 of the Paris Agreement.
3. India is one of the partner countries participating in the JCM.

Which of the statements given above is/are correct?

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

(d) 1, 2 and 3

Answer: (d) 1, 2 and 3

Explanation:

1. **Statement 1 is correct:** JCM was proposed by Japan and launched in 2013.
2. **Statement 2 is correct:** It operates as a bilateral mechanism under the framework of Article 6 of the Paris Agreement.
3. **Statement 3 is correct:** India is one of the 31 partner countries participating in the Joint Crediting Mechanism.

GRAPES-3 Telescope

Why in News?

Recently, researchers from Mumbai, Kochi, and Japan used the **GRAPES-3 Telescope** to study how variations in the Earth's upper atmosphere and the Sun's magnetic field influence **muons**, a type of subatomic particle produced by cosmic rays.

About GRAPES-3 Telescope

1. **GRAPES-3 (Gamma Ray Astronomy PeV Energies Phase-3)** is an advanced cosmic ray observatory designed to study the **origin, acceleration, and propagation of cosmic rays**.
2. It detects extensive air showers produced when high-energy **cosmic rays** and gamma rays interact with Earth's atmosphere.
3. The observatory also studies:
 - Solar phenomena
 - Geomagnetic effects
 - Thunderstorm-related atmospheric events
 - Cosmic ray muons
4. It uses:
 - An array of plastic scintillator detectors
 - A large-area muon detector based on proportional counters

Location and Management

1. Located at **Ooty**.
2. Operated by the **Tata Institute of Fundamental Research**.

About Cosmic Rays

1. Cosmic rays are highly energetic charged particles originating from outer space.
2. They were discovered over a century ago and are among the **most energetic particles in the universe**.
3. Earth is continuously bombarded by cosmic rays from all directions.
4. When these rays enter Earth's atmosphere, they collide with atmospheric particles and create **particle showers**.
5. These showers contain:
 - Electrons
 - Photons
 - Muons
 - Protons
 - Neutrons
6. Cosmic rays have been observed over an extremely wide energy range, from about **10^8 eV to 10^{20} eV**.

Significance

1. Helps scientists understand the origin and behavior of cosmic rays.
2. Provides insights into solar activity and space weather.
3. Contributes to research on atmospheric physics and high-energy astrophysics.
4. Enhances understanding of interactions between Earth's atmosphere and cosmic particles.

UPSC Prelims Practice MCQ

Q2. Consider the following statements regarding the GRAPES-3 Telescope:

1. It is located in Ooty, Tamil Nadu.
2. It is operated by the Tata Institute of Fundamental Research (TIFR).
3. It is designed to study cosmic rays and associated atmospheric phenomena.

Which of the statements given above is/are correct?

- (a) 1 and 2 only

(b) 2 and 3 only

(c) 1 and 3 only

(d) 1, 2 and 3

Answer: (d) 1, 2 and 3

Explanation:

1. **Statement 1 is correct:** GRAPES-3 is located in Ooty, Tamil Nadu.
2. **Statement 2 is correct:** It is operated by TIFR.
3. **Statement 3 is correct:** The observatory studies cosmic rays, muons, solar activity, and atmospheric phenomena through extensive air shower measurements.

Knob-Billed Duck

Why in News?

Recently, the **Knob-Billed Duck** was recorded for the first time at the **Pong Lake Wildlife Sanctuary**, marking a significant sighting of this rare waterbird outside its commonly reported wetland habitats in western and central India.



About Knob-Billed Duck

1. The **Knob-Billed Duck**, also known as the **African Comb Duck**, is a large species of duck.
2. It is named after the prominent **leaf-shaped knob (comb)** present on the bill of adult males.
3. **Scientific Name:** *Sarkidiornis melanotos*

Habitat and Distribution

1. Found in **tropical wetlands**, freshwater lakes, marshes, and floodplains.

2. Distributed across:
 - **Sub-Saharan Africa**
 - **Madagascar**
 - Parts of the **Indian subcontinent**
 - Southeast Asia extending to Laos and southern China
3. In India, it is primarily associated with freshwater wetlands and seasonal water bodies.
4. The species is largely resident, though local movements occur during the wet season.

Key Features

1. One of the **largest duck species** in the world.
2. Length ranges from **56–76 cm**.
3. Wingspan ranges between **116–145 cm**.
4. Weight varies from **1.03–2.9 kg**.

Appearance

1. Adults possess:
 - White head with dark speckles
 - Pure white neck and underparts
 - Glossy blue-black upperparts with greenish and bluish iridescence
2. Males are significantly larger than females.
3. Juveniles have dull brown upperparts and buff-coloured face and neck.

Conservation Status

1. **IUCN Red List: Least Concern (LC)**

Significance

1. Acts as an indicator of healthy wetland ecosystems.
2. The recent sighting at Pong Lake highlights the importance of protected wetlands for migratory and resident waterbirds.
3. Reinforces the ecological significance of wetlands in conserving avian biodiversity.

UPSC Prelims Practice MCQ

Q3. Consider the following statements regarding the Knob-Billed Duck:

1. Its scientific name is *Sarkidiornis melanotos*.

2. Adult males possess a prominent knob-like structure on the bill.
3. It is classified as Endangered under the IUCN Red List.

Which of the statements given above is/are correct?

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

Answer: (a) 1 and 2 only

Explanation:

1. **Statement 1 is correct:** The scientific name of the Knob-Billed Duck is *Sarkidiornis melanotos*.
2. **Statement 2 is correct:** Adult males have a distinctive knob-like comb on the bill.
3. **Statement 3 is incorrect:** The species is listed as **Least Concern (LC)** on the IUCN Red List.

Manas National Park

Why in News?

Recently, the Chief Minister of **Assam** announced that **Manas National Park** has recorded **zero rhino and tiger poaching cases for three consecutive years**, highlighting the success of conservation efforts in the park.



About Manas National Park

1. Located in the foothills of the **Himalayas** in Assam.

2. Shares an international boundary with **Royal Manas National Park** in **Bhutan**.
3. Named after the **Manas River**, which flows through the western part of the park.
4. Elevation ranges from **60 metres to 1,500 metres**, supporting diverse habitats and rich biodiversity.

Special Recognitions

Manas enjoys multiple conservation designations:

1. **UNESCO World Heritage Site**
2. Tiger Reserve
3. Elephant Reserve
4. Biosphere Reserve
5. Important Bird Area (IBA)
6. It was among the **first reserves included under Project Tiger in 1973**.

Landscape and Vegetation

1. Forms part of a larger transboundary conservation landscape connecting protected areas in India and Bhutan.
2. Vegetation includes:
 - Semi-evergreen forests
 - Mixed deciduous forests
 - Grasslands
 - Riparian ecosystems

Important Flora

1. Hoolong
2. Amari
3. Dewa Sam
4. Himolu
5. Garjan

Faunal Diversity

Manas National Park is home to several rare and endangered species, including:

1. **Indian Rhinoceros**
2. **Bengal Tiger**
3. **Asian Elephant**
4. **Golden Langur**
5. **Pygmy Hog**
6. **Hispid Hare**
7. **Wild Water Buffalo**

Significance

1. One of India's most biodiverse protected areas.
2. Important habitat for several endangered and endemic species.
3. A key component of the transboundary conservation landscape between India and Bhutan.
4. Plays a crucial role in tiger, rhino, elephant, and grassland ecosystem conservation.

UPSC Prelims Practice MCQ

Q4. Consider the following statements regarding Manas National Park:

1. It shares a border with Bhutan's Royal Manas National Park.
2. It is a UNESCO World Heritage Site and a Tiger Reserve.
3. The Manas River, a tributary of the Brahmaputra, flows through the park.

Which of the statements given above is/are correct?

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

Answer: (d) 1, 2 and 3

Explanation:

1. **Statement 1 is correct:** Manas National Park shares its northern boundary with Royal Manas National Park in Bhutan.
2. **Statement 2 is correct:** It is both a UNESCO World Heritage Site and a Tiger Reserve.
3. **Statement 3 is correct:** The Manas River, a major tributary of the Brahmaputra, flows through the park and gives it its name.

Sickle Cell Anaemia

Recently, the President of India expressed confidence that the country will eliminate **Sickle Cell Anaemia** before the national target year of **2047**.

About Sickle Cell Disease

1. Sickle Cell Anaemia is a group of **inherited blood disorders** that affect haemoglobin, the oxygen-carrying protein present in red blood cells (RBCs).
2. It is caused by abnormal haemoglobin known as **Haemoglobin S (HbS)**.

How Does It Affect the Body?

1. Normal RBCs are round, flexible, and move easily through blood vessels.
2. In affected individuals, RBCs become **sickle- or crescent-shaped**.
3. These abnormal cells can block blood vessels and reduce oxygen supply to tissues.
4. They may also stick to vessel walls, causing painful blockages and impaired blood flow.

Causes

1. It is a **genetic disorder** caused by mutations in the haemoglobin gene.
2. A person develops the disease when the defective gene is inherited from **both parents**.
3. Individuals inheriting only one defective gene are known as **carriers (sickle cell trait)** and are usually healthy but can pass the gene to their children.

Symptoms

Early Symptoms

1. Severe fatigue due to anaemia.
2. Painful swelling of hands and feet.
3. Jaundice.

Advanced Symptoms

1. Recurrent episodes of severe pain (sickle cell crises).
2. Chronic anaemia.
3. Organ damage.
4. Increased susceptibility to infections.

Treatment

1. **Bone marrow (stem cell) transplantation** is currently the only established curative treatment.

2. Other treatments help manage symptoms, prevent complications, and improve quality of life.
3. **Gene therapy** is emerging as a promising future treatment option.

Significance

1. Sickle Cell Disease is particularly prevalent among tribal populations in India.
2. Early screening, genetic counselling, and timely treatment are crucial for reducing disease burden.

Source: The Hindu

Statement-Based MCQ

Q1. With reference to Sickle Cell Anaemia, consider the following statements:

1. It is an inherited disorder caused by abnormal haemoglobin.
2. The disease develops only when a person inherits the defective gene from both parents.
3. Individuals with sickle cell trait always develop severe symptoms of the disease.

Which of the statements given above are correct?

- A. 1 and 2 only
B. 2 and 3 only
C. 1 and 3 only
D. 1, 2 and 3

Answer: A. 1 and 2 only

(Statement 3 is incorrect because individuals with sickle cell trait are generally healthy carriers and usually do not develop severe disease symptoms.)

Indian Coast Guard (ICG)

The **Indian Coast Guard (ICG)** celebrated the **12th International Day of Yoga (IDY) 2026** with nationwide participation under its flagship initiative **"Yoga Sangam 2026."**

About Indian Coast Guard

1. It is a **maritime armed force** functioning under the **Ministry of Defence, Government of India**.
2. It is a **multi-mission maritime organization** responsible for safeguarding India's maritime interests.
3. Established as an independent armed force through the **Coast Guard Act, 1978**.

Headquarters

1. Located in **New Delhi**.
2. Headed by the **Director General, Indian Coast Guard**.

Motto

"Vayam Rakshamah" — We Protect.

Mission and Functions

Maritime Security

1. Enforces maritime laws and regulations.
2. Prevents smuggling, poaching, piracy, and narcotics trafficking.

Search and Rescue

1. Assists mariners in distress.
2. Protects life and property at sea.

Environmental Protection

1. Preserves marine ecology and biodiversity.
2. Responds to marine pollution incidents.

Resource Protection

1. Safeguards offshore assets and resources, including oil, fish, and minerals.

Defence Support

1. Assists the Indian Navy during wartime operations.
2. Collects scientific and oceanographic data.

Significance

1. Acts as the first line of maritime safety and security.
2. Protects India's vast coastline and Exclusive Economic Zone (EEZ).
3. Plays a crucial role in disaster response and coastal surveillance.

Source: PIB

Statement-Based MCQ

Q2. With reference to the Indian Coast Guard (ICG), consider the following statements:

1. It functions under the Ministry of Defence.
2. It was established through the Coast Guard Act, 1978.
3. Its primary role is limited to wartime naval operations.

Which of the statements given above are correct?

- A. 1 and 2 only
B. 2 and 3 only
C. 1 and 3 only
D. 1, 2 and 3

Answer: A. 1 and 2 only

(Statement 3 is incorrect because the Indian Coast Guard performs a wide range of peacetime functions including maritime law enforcement, search and rescue, environmental protection, and coastal security.)

International Tribunal for the Law of the Sea (ITLOS)

India's candidate, **Professor Bimal N. Patel**, has been elected as a Judge of the **International Tribunal for the Law of the Sea (ITLOS)** for the **2026–2035 term**.

About International Tribunal for the Law of the Sea

1. An **independent judicial body** established under the **1982 United Nations Convention on the Law of the Sea (UNCLOS)**.
2. Headquarters: Hamburg.
3. Functions as a specialized international court for resolving disputes related to the law of the sea.

Composition

1. Comprises **21 independent judges**.
2. Judges are elected by secret ballot by States Parties to UNCLOS.

3. Each State Party may nominate up to **two candidates**.
4. Members are elected for a **nine-year term** and are eligible for re-election.
5. One-third of the members retire every three years.
6. Judges must possess high integrity, impartiality, and recognized expertise in the law of the sea.

Jurisdiction of ITLOS

ITLOS has jurisdiction over disputes concerning the **interpretation and application of UNCLOS**, including:

1. Delimitation of maritime boundaries.
2. Navigation and maritime rights.
3. Conservation and management of marine living resources.
4. Protection and preservation of the marine environment.
5. Marine scientific research.

Who Can Approach ITLOS?

1. States Parties to UNCLOS.
2. International organizations that are parties to the Convention.
3. In specific cases, non-state entities, state enterprises, and private organizations may also have access as provided under the Convention.

Significance

1. Promotes peaceful settlement of maritime disputes.
2. Strengthens international maritime governance.
3. Supports the rules-based global ocean order under UNCLOS.

Source: NOAA

Statement-Based MCQ

Q3. With reference to the International Tribunal for the Law of the Sea (ITLOS), consider the following statements:

1. It was established under the United Nations Convention on the Law of the Sea (UNCLOS).
2. Its headquarters is located in Hamburg, Germany.
3. It consists of 15 judges elected for a six-year term.

Which of the statements given above are correct?

- A. 1 and 2 only
- B. 2 and 3 only
- C. 1 and 3 only
- D. 1, 2 and 3

Answer: A. 1 and 2 only

(Statement 3 is incorrect because ITLOS consists of 21 judges elected for a nine-year term.)

Brahmani River

A recent study has revealed that **microplastic pollution** is reaching the ecologically sensitive habitats of **Bhitarkanika Wildlife Sanctuary**, carrying toxic heavy metals into the **Brahmani River system**.



About Brahmani River

1. One of the major rivers of **eastern India**, flowing primarily through **Odisha**.
2. Formed by the confluence of the **Sankh River** and **South Koel River** near **Rourkela** in Odisha.
3. Both source rivers originate from the **Chota Nagpur Plateau**.

River Basin

1. The basin extends across **Jharkhand, Chhattisgarh, and Odisha**.

2. Ultimately drains into the **Bay of Bengal**.

Boundaries of the Basin

1. **North:** Chota Nagpur Plateau
2. **West & South:** Mahanadi Basin
3. **East:** Bay of Bengal

Major Tributaries

1. Sankh
2. Tikra
3. Karo

Geographical Significance

1. The **Brahmani Delta** hosts the famous Bhitarkanika Wildlife Sanctuary, renowned for its estuarine crocodiles and mangrove ecosystem.
2. One of the few rivers that cut across the **Eastern Ghats**.
3. Forms a minor gorge at **Rengali**, where the Rengali Dam has been constructed.

Importance

1. Supports irrigation, fisheries, industry, and biodiversity in eastern India.
2. Plays a crucial role in sustaining the Bhitarkanika wetland ecosystem.
3. Recent concerns over microplastic contamination highlight the need for improved river conservation measures.

Source: Research Matters (RM)

Statement-Based MCQ

Q4. With reference to the Brahmani River, consider the following statements:

1. It is formed by the confluence of the Sankh and South Koel rivers.
2. It drains directly into the Arabian Sea.
3. The Bhitarkanika Wildlife Sanctuary is located in its delta region.

Which of the statements given above are correct?

- A. 1 and 3 only
- B. 2 and 3 only
- C. 1 and 2 only

D. 1, 2 and 3

Answer: A. 1 and 3 only

(Statement 2 is incorrect because the Brahmani River drains into the Bay of Bengal.)

Centre Tightens Norms for Foreign Contributions under FCRA

Source: The Hindu

Key News

- The Central Government has amended the **Foreign Contribution (Regulation) Rules, 2011** under the **FCRA, 2010**.
- NGOs receiving foreign funds must now operate strictly within the **activities and geographical areas** specified during registration.
- Disclosure of **websites, social media accounts, publications, books, and newspapers** has been made mandatory.
- NGOs must register under one of five specified categories and maintain compliance with updated reporting requirements.

Major Key Data / Facts

1. Five categories for FCRA registration:
 - Educational
 - Economic
 - Religious
 - Social
 - Cultural
2. NGOs must:
 - Declare geographical scope of operations.
 - Provide website and social media details.
 - Submit details of publications issued during the year.
3. Separate registration fee applicable for each category and State/UT expansion.
4. Definition of NGO expanded to include:
 - Trustees
 - Partners
 - Directors
 - Key office bearers

- Governing body members
- 5. Violation may attract:
 - Financial penalties
 - Suspension or cancellation of FCRA registration.

Static Information

Foreign Contribution (Regulation) Act (FCRA), 2010

1. Enacted to regulate acceptance and utilization of foreign contributions.
2. Administered by the **Ministry of Home Affairs (MHA)**.
3. Objective:

Ensure foreign funds do not adversely affect:

 - Sovereignty and integrity of India
 - National security
 - Public interest
 - Electoral politics
 - Communal harmony

Who Cannot Receive Foreign Contributions?

Under FCRA:

1. Candidates for election
2. Legislators
3. Political parties
4. Government servants
5. Judges
6. Media organizations of political nature

FCRA Amendment Act, 2020

Key provisions:

1. Prohibited transfer of foreign contribution to another NGO.
2. Reduced administrative expenditure cap from **50% to 20%**.
3. Made **Aadhaar identification mandatory** for key functionaries.
4. Mandatory FCRA account in **State Bank of India, New Delhi Main Branch**.

Constitutional Link

1. **Article 19(1)(c)**: Freedom to form associations.
2. Subject to reasonable restrictions under **Article 19(4)**.

UPSC Prelims Practice Question

Q1. Consider the following statements regarding the Foreign Contribution (Regulation) Act (FCRA):

1. FCRA is administered by the Ministry of Home Affairs.
2. Political parties can receive foreign contributions with prior government approval.
3. The FCRA Amendment Act, 2020 prohibited transfer of foreign contribution from one registered NGO to another.

Which of the statements given above is/are correct?

- A. 1 and 3 only
- B. 2 and 3 only
- C. 1 only
- D. 1, 2 and 3

Answer: A. 1 and 3 only

Explanation:

1. Statement 1: Correct.
2. Statement 2: Incorrect; political parties are prohibited from receiving foreign contributions under FCRA provisions.
3. Statement 3: Correct; the 2020 amendment prohibited such transfers.

Nirbhay Chetna Initiative

Why in News?

Recently, the Central Government launched the **Nirbhay Chetna Initiative** to sensitize over **17.5 lakh elected male representatives** across the country on gender equality, women's safety, and gender-responsive governance.

About Nirbhay Chetna Initiative

1. **Nirbhay Chetna** is a key intervention under the **Nirbhaya Raho Initiative**.
2. It is a first-of-its-kind national programme supported through the **Nirbhaya Fund**.
3. The initiative is implemented by the **Ministry of Panchayati Raj**.

4. It aims to strengthen **gender-responsive governance** through Panchayati Raj Institutions (PRIs).
5. The programme focuses on creating awareness, accountability, and community leadership among elected representatives.
6. It seeks to sensitize men on issues related to:
 - Gender equality
 - Women's safety and security
 - Social inclusion
 - Community participation

Key Components of Nirbhay Raho

Nirbhay Chetna

1. Focuses on sensitizing **elected male representatives** regarding gender issues and women's safety.
2. A network of **28,500 Master Trainers** is being developed at:
 - State level
 - District level
 - Block level
3. The programme aims to reach more than **17.5 lakh male elected representatives** nationwide.

Nirbhay Netri

1. Focuses on **capacity building and legal awareness** among elected women representatives.
2. Encourages women's leadership and participation in local governance.

Nirbhay Drishti

1. Promotes installation of **CCTV cameras at strategic rural locations**.
2. Aims to strengthen technology-enabled safety infrastructure in Panchayats.

Significance

1. Strengthens gender-sensitive governance at the grassroots level.
2. Promotes community-led efforts for women's safety.
3. Enhances awareness among elected representatives regarding gender issues.

4. Supports inclusive and accountable local governance through Panchayati Raj Institutions.

UPSC Prelims Practice MCQ

Q2. Consider the following statements regarding the Nirbhay Chetna Initiative:

1. It is implemented under the Nirbhaya Fund.
2. It aims to sensitize elected male representatives on gender equality and women's safety.
3. It is implemented by the Ministry of Panchayati Raj.

Which of the statements given above is/are correct?

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

Answer: (d) 1, 2 and 3

Explanation:

1. **Statement 1 is correct:** Nirbhay Chetna is a national initiative implemented under the Nirbhaya Fund.
2. **Statement 2 is correct:** It focuses on sensitizing elected male representatives regarding gender equality and women's safety.
3. **Statement 3 is correct:** The Ministry of Panchayati Raj is the nodal ministry responsible for its implementation.

Ecologically Sensitive Area (ESA) / Eco-Sensitive Zone (ESZ)

Why in News?

Recently, discussions have intensified regarding the notification of **Ecologically Sensitive Areas (ESAs)** in parts of the **Western Ghats**, which may provide stronger legal protection to ecologically fragile regions across several states.

About Ecologically Sensitive Area (ESA)

1. **Ecologically Sensitive Areas (ESAs)**, also known as **Eco-Sensitive Zones (ESZs)**, are

regions identified for special environmental protection due to:

- Rich biodiversity
 - Fragile ecosystems
 - Critical ecological functions
2. These areas act as a buffer between protected ecosystems and regions with higher human activity.
 3. The Central Government can notify ESAs under the **Environment (Protection) Act, 1986**.

Key Features

1. Activities within ESAs are categorized as:
 - **Prohibited**
 - **Regulated**
 - **Permitted**
2. Development projects in notified ESAs are subject to stricter environmental scrutiny and safeguards.
3. The objective is to ensure that economic development does not compromise ecological sustainability.

Significance of Eco-Sensitive Zones

Ecological Buffer

1. ESZs function as **“shock absorbers”** for protected areas by minimizing adverse impacts from nearby human activities.

Transition Zone

1. They serve as a transition area between:
 - Highly protected ecosystems
 - Areas with comparatively lower levels of environmental protection

Biodiversity Conservation

1. Help conserve wildlife habitats, forests, wetlands, and other ecologically important landscapes.

Sustainable Development

1. Promote balanced development while safeguarding ecological integrity.

Importance of the Western Ghats

1. The Western Ghats are one of the world's **biodiversity hotspots**.

2. They support numerous endemic species of plants and animals.
3. The region plays a crucial role in:
 - Climate regulation
 - Water security
 - Soil conservation
 - Hydrological cycles

UPSC Prelims Practice MCQ

Q3. With reference to Ecologically Sensitive Areas (ESAs), consider the following statements:

1. They are notified under the Environment (Protection) Act, 1986.
2. They act as buffer zones to reduce the impact of human activities on protected ecosystems.
3. All developmental activities are completely prohibited within ESAs.

Which of the statements given above is/are correct?

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

Answer: (a) 1 and 2 only

Explanation:

1. **Statement 1 is correct:** ESAs/ESZs are notified under the Environment (Protection) Act, 1986.
2. **Statement 2 is correct:** They serve as ecological buffers or “shock absorbers” for protected areas.
3. **Statement 3 is incorrect:** Activities are classified as prohibited, regulated, or permitted; **not all activities are completely banned**.

Anthropological Survey of India (AnSI)

Why in News?

Recently, human skeletal remains excavated from the **Rakhigarhi** archaeological site were formally

handed over by the **Archaeological Survey of India** to the **Anthropological Survey of India** for detailed anthropological examination and research.

About Anthropological Survey of India (AnSI)

1. The **Anthropological Survey of India (AnSI)** is a premier government-funded research organization dedicated to anthropological studies in India.
2. It functions under the **Ministry of Culture**.
3. It is the only central government organization exclusively engaged in anthropological research.
4. **Headquarters: Kolkata**
5. It was established in **1945** under the leadership of **Sarat Chandra Roy**, widely regarded as the father of Indian ethnography.

Evolution of AnSI

1. Initially established to study India's tribes, castes, and their ways of life.
2. Early research focused on:
 - Social structure
 - Kinship systems
 - Religious practices
 - Economic activities
3. Over time, its scope expanded to include:
 - Rural and urban populations
 - Marginalized communities
 - Diaspora populations
 - Biological and cultural anthropology

Objectives of AnSI

1. Study tribes, castes, and other population groups from biological and cultural perspectives.
2. Examine and preserve human skeletal remains from archaeological and contemporary contexts.
3. Document and promote tribal arts, crafts, and cultural heritage.
4. Provide training in anthropology and related disciplines.
5. Publish research findings and anthropological studies.

Organizational Presence

1. AnSI has regional centres and branches across India, including:
 - Delhi
 - Lucknow
 - Shillong
 - Pune
2. It employs experts from multiple disciplines such as:
 - Anthropology
 - Sociology
 - Archaeology
 - Linguistics
 - Allied social sciences

Publications

Research findings are disseminated through:

1. *Journal of the Anthropological Survey of India*
2. *Occasional Papers*
3. *Monographs*
4. Various thematic reports and research publications

Significance

1. Plays a crucial role in documenting India's cultural and biological diversity.
2. Supports archaeological and heritage research.
3. Contributes to policy-making related to tribal and marginalized communities.
4. Preserves anthropological records for future generations.

UPSC Prelims Practice MCQ

Q4. Consider the following statements regarding the Anthropological Survey of India (AnSI):

1. It functions under the Ministry of Culture.
2. Its headquarters is located in Kolkata.
3. It was established in 1950 after the adoption of the Constitution.

Which of the statements given above is/are correct?

(a) 1 and 2 only

(b) 2 and 3 only

(c) 1 and 3 only

(d) 1, 2 and 3

Answer: (a) 1 and 2 only

Explanation:

1. **Statement 1 is correct:** AnSI functions under the Ministry of Culture.
2. **Statement 2 is correct:** Its headquarters is located in Kolkata, West Bengal.
3. **Statement 3 is incorrect:** AnSI was established in **1945**, before India's independence and before the Constitution came into force.

Vaigai River

Why in News?

Recently, residents of Nelpettai raised concerns over the dumping of waste along a stretch of the **Vaigai River** in Madurai, highlighting issues related to river conservation and urban waste management.



About Vaigai River

1. The **Vaigai River** is one of the major rivers of **Tamil Nadu**.
2. It is often referred to as the "**Lifeline of Madurai**" due to its importance for irrigation and drinking water supply.

Course of the River

1. The river originates in the **Varusanadu Hills**, a part of the **Western Ghats**.
2. It flows eastward across Tamil Nadu, passing through the historic city of **Madurai**.

3. Finally, it drains into the **Palk Strait** near Ramanathapuram district.

Key Features

1. **Length:** Approximately **256 km**.
2. The river forms the scenic **Vattaparai Falls** along its course.
3. It receives substantial water through the **Periyar Project**, where water from the **Periyar River** is diverted through a tunnel across the Western Ghats into the Vaigai basin.

Major Tributaries

1. **Suruli River**
2. **Mullaiyar River**
3. **Varaha River**
4. **Manjal River**

Vaigai Dam

1. The **Vaigai Dam** is constructed across the Vaigai River near Andipatti in Theni district.
2. The dam provides:
 - Irrigation water to Madurai and Dindigul districts.
 - Drinking water supply to Madurai and nearby regions.

Significance

1. Supports agriculture in southern Tamil Nadu.
2. Provides drinking water to several urban and rural areas.
3. Plays a vital role in the socio-economic development of the Vaigai basin region.

UPSC Prelims Practice MCQ

Q5. Consider the following statements regarding the Vaigai River:

1. It originates in the Varusanadu Hills of the Western Ghats.
2. It flows through the city of Madurai.
3. It ultimately drains into the Bay of Bengal near Chennai.

Which of the statements given above is/are correct?

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

(c) 1 and 3 only

(d) 1, 2 and 3

Answer: (a) 1 and 2 only

Explanation:

1. **Statement 1 is correct:** The Vaigai River originates in the Varusanadu Hills of the Western Ghats.
2. **Statement 2 is correct:** It flows through Madurai, one of Tamil Nadu's major cities.
3. **Statement 3 is incorrect:** The river drains into the **Palk Strait**, not the Bay of Bengal near Chennai.

Pradhan Mantri Rashtriya Bal Puraskar (PMRBP)

Why in News?

Recently, the **Ministry of Women and Child Development** invited nominations for the **Pradhan Mantri Rashtriya Bal Puraskar (PMRBP) 2026**, India's highest civilian honour for children.



About Pradhan Mantri Rashtriya Bal Puraskar (PMRBP)

1. PMRBP is the **highest civilian award for children in India**.
2. It is presented annually by the **President of India** on **Veer Bal Diwas**.
3. **Veer Bal Diwas** is observed on **26 December** in memory of **Sahibzada Zorawar Singh** and **Sahibzada Fateh Singh**.

Categories of Award

The award recognizes exceptional achievements in the following fields:

1. Bravery
2. Social Service
3. Environment
4. Sports
5. Art and Culture
6. Science and Technology

Selection Process

1. Awardees are selected by a National Selection Committee.
2. The committee is constituted by the Union Minister for Women and Child Development and chaired by the Secretary of the Ministry.

Eligibility Criteria

Citizenship

1. The applicant must be an **Indian citizen**.

Age

1. Children should be **above 5 years and below 18 years** of age (as on 31st July of the respective year).

Achievement Period

1. The achievement, act, or contribution should have occurred within **two years** preceding the last date of nomination/application.

Nomination Process

1. Nominations can be submitted by:
 - Individuals
 - Institutions
 - Government organizations
2. **Self-nomination is also permitted.**
3. A child may apply in more than one category, though only one application may be considered by the committee.

Award Components

Each awardee receives:

1. A Medal
2. A Certificate
3. A Cash Prize of **₹1 lakh**

Significance

1. Encourages excellence and innovation among children.
2. Recognizes outstanding contributions in diverse fields.

- Inspires young achievers to contribute positively to society and nation-building.

UPSC Prelims Practice MCQ

Q6. Consider the following statements regarding the Pradhan Mantri Rashtriya Bal Puraskar (PMRBP):

- It is the highest civilian honour for children in India.
- It is presented annually on Veer Bal Diwas.
- Children can apply for the award only through nominations by government institutions.

Which of the statements given above is/are correct?

- 1 and 2 only
- 2 and 3 only
- 1 and 3 only
- 1, 2 and 3

Answer: (a) 1 and 2 only

Explanation:

- Statement 1 is correct:** PMRBP is India's highest civilian award for children.
- Statement 2 is correct:** It is conferred annually on Veer Bal Diwas (26 December).
- Statement 3 is incorrect:** Children can be nominated by individuals, institutions, government bodies, and can also apply through **self-nomination**.

International Maritime Organization (IMO)

Why in News?

Recently, the Secretary-General of the **International Maritime Organization** announced plans to facilitate the evacuation of ships and thousands of stranded seafarers in the Persian Gulf amid tensions arising from the conflict in West Asia.



About International Maritime Organization (IMO)

- The **International Maritime Organization (IMO)** is a specialized agency of the **United Nations** responsible for improving the safety, security, and environmental performance of international shipping.
- It serves as the global standard-setting authority for international maritime transport.
- The organization develops and maintains a comprehensive regulatory framework for the shipping industry.

Historical Background

- Established in **1948** as the **Inter-Governmental Maritime Consultative Organization (IMCO)**.
- Became a specialized UN agency in **1959**.
- Renamed the **International Maritime Organization (IMO)** in **1982**.

Objectives

- Enhance maritime safety and security.
- Prevent marine pollution from ships.
- Promote efficient and sustainable shipping.
- Develop globally accepted maritime regulations and standards.

Governance Structure

Assembly

- Highest governing body of the IMO.
- Comprises representatives of all member states.
- Meets once every two years.
- Responsible for:
 - Approving the work programme
 - Adopting the budget
 - Electing the Council

Council

- Executive organ of the IMO.

2. Consists of **40 elected member states**.
3. Supervises the organization's work between Assembly sessions.

Committees

1. Five major policy-making committees oversee:
 - Maritime safety
 - Marine environment protection
 - Legal affairs
 - Technical cooperation
 - Facilitation of international shipping

Membership and Headquarters

1. **Members:** 176 Member States.
2. **India** has been a member since **1959**.
3. **Headquarters:** London

Funding

1. Funded primarily through contributions from member states.
2. Additional resources may come from voluntary contributions and other approved activities.

Significance

1. Ensures uniform global maritime standards.
2. Facilitates safe and efficient international trade.
3. Plays a crucial role in marine environmental protection.
4. Supports sustainable development of the global shipping industry.

UPSC Prelims Practice MCQ

Q7. Consider the following statements regarding the International Maritime Organization (IMO):

1. It is a specialized agency of the United Nations.
2. Its headquarters is located in London.
3. It is responsible for setting global standards for the safety and environmental performance of international shipping.

Which of the statements given above is/are correct?

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

(c) 1 and 3 only

(d) 1, 2 and 3

Answer: (d) 1, 2 and 3

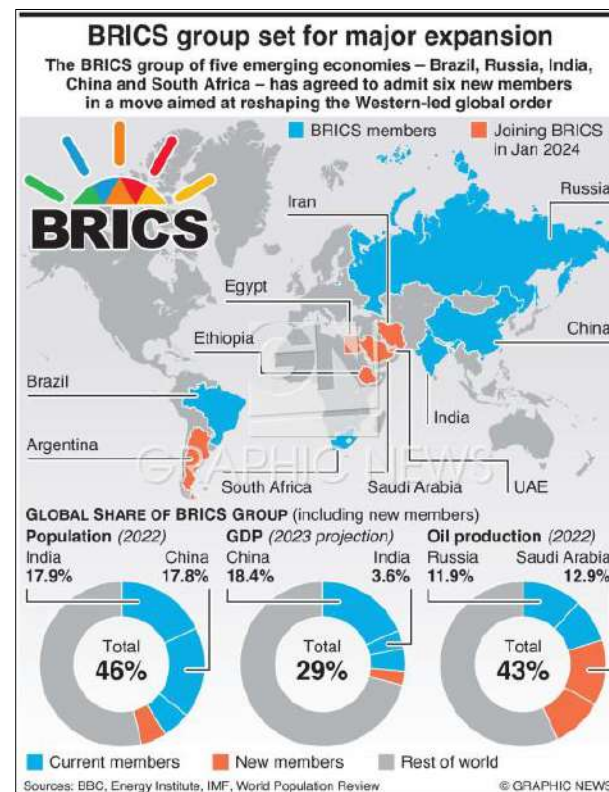
Explanation:

1. **Statement 1 is correct:** IMO is a specialized agency of the United Nations.
2. **Statement 2 is correct:** Its headquarters is located in London, United Kingdom.
3. **Statement 3 is correct:** IMO is the global standard-setting authority for the safety, security, and environmental performance of international shipping.

BRICS Heads of Space Agencies Meeting in Bengaluru

NEWS

At the BRICS Heads of Space Agencies Meeting in Bengaluru, India proposed a **BRICS Space Economy**, calling for deeper collaboration in innovation, sustainability, satellite applications, and peaceful space exploration.



KEY FACTS

1. Union Minister **Dr. Jitendra Singh** proposed the **BRICS Space Economy** concept.
2. Proposal made at the **BRICS Heads of Space Agencies (HOSA) Meeting** in Bengaluru.
3. Meeting hosted by **ISRO** under India's **BRICS Chairship 2026**.
4. Emphasis on collective action in:
 - Innovation
 - Investment
 - Entrepreneurship
 - Sustainable development
5. Reviewed progress of **BRICS space cooperation**.
6. Discussed strengthening the **BRICS Remote Sensing Satellite Constellation (RSSC)**.
7. Deliberated on the proposed **BRICS Space Council**.
8. Focus on:
 - Space sustainability
 - Debris-free missions
 - Disaster management
 - Earth observation
 - Capacity building
 - Knowledge sharing
9. Highlighted India's achievements:
 - Chandrayaan-3
 - Aditya-L1
 - Gaganyaan Mission
10. Emphasised greater cooperation among governments, academia, startups, and private industry.

STATIC INFORMATION**BRICS**

1. BRICS is an intergovernmental grouping promoting cooperation among emerging economies.
2. Members: **Brazil, Russia, India, China, South Africa, Egypt, Ethiopia, Iran, Indonesia, UAE**.
3. Focus areas include economic growth, technology, innovation, climate action, and sustainable development.

Source: BRICS Official Portal (brics2026.gov.in)

BRICS Remote Sensing Satellite Constellation (RSSC)

1. Initiative for sharing remote sensing satellite data among BRICS countries.
2. Supports disaster management, environmental monitoring, agriculture, and climate studies.

Source: ISRO

ISRO

1. Established: **1969**
2. Headquarters: **Bengaluru**
3. Department: **Department of Space, Government of India**

Source: ISRO

Prelims Practice Question

Q1. Consider the following statements regarding BRICS Space Cooperation:

1. The BRICS Remote Sensing Satellite Constellation facilitates satellite data sharing among member countries.
2. ISRO hosted the BRICS Heads of Space Agencies Meeting under India's BRICS Chairship 2026.
3. BRICS Space Cooperation is limited only to satellite launch services.

Which of the statements given above is/are correct?

- A. 1 and 2 only
B. 2 and 3 only
C. 1 only
D. 1, 2 and 3

Correct Answer: A

10th Apex-Level NCORD meeting**NEWS**

The Government will hold the 10th Apex-Level NCORD meeting to strengthen India's anti-narcotics strategy, release a national vision document, expand enforcement, and reinforce the Zero Tolerance policy against drugs.

KEY FACTS

1. Union Home Minister **Amit Shah** to chair the **10th Apex-Level NCORD Meeting** in New Delhi.
2. **Vision Document on Narcotics Control (2026–2029)** to be released.
3. **NCB Annual Report–2025** will also be released.
4. Vision Document aims to achieve a **Drug-Free India**.
5. Focus on:
 - Demand reduction
 - Supply reduction
 - Harm reduction
 - Synthetic drugs
 - Darknet-enabled trafficking
 - Public awareness
 - Rehabilitation
 - Capacity building
6. **Online Drug Disposal Fortnight Campaign** to be launched.
7. Around **2,09,500 kg** of seized drugs worth **₹6,000 crore** to be destroyed.
8. New **NCB Zonal Offices** to be inaugurated in **Jammu and Guwahati**.
9. Meeting involves **44 Central Ministries/Departments, 108 State representatives**, and Drug Law Enforcement Agencies.
10. Reinforces the Government's **Zero Tolerance Policy** against drug trafficking.

STATIC INFORMATION

Narco-Coordination Centre (NCORD)

1. Established in **2016** by the Ministry of Home Affairs.
2. Apex mechanism for coordination among Central and State agencies to combat drug trafficking.
3. Functions through multi-tier committees at national, state, district, and local levels.

Source: Ministry of Home Affairs (MHA)

Narcotics Control Bureau (NCB)

1. Apex law enforcement agency for combating drug trafficking in India.

2. Established in **1986** under the **Narcotic Drugs and Psychotropic Substances (NDPS) Act, 1985**.

3. Functions under the **Ministry of Home Affairs**.

Source: Narcotics Control Bureau (NCB)

NDPS Act, 1985

1. Principal legislation regulating narcotic drugs and psychotropic substances.
2. Provides for prevention of illicit trafficking, enforcement, and punishment.

Source: Ministry of Finance / Ministry of Home Affairs

Prelims Practice Question

Q2. Consider the following statements regarding the Narco-Coordination Centre (NCORD):

1. NCORD is a coordination mechanism under the Ministry of Home Affairs to combat drug trafficking.
2. The Narcotics Control Bureau was constituted under the NDPS Act, 1985.
3. NCORD functions only at the national level and has no state or district-level structure.

Which of the statements given above is/are correct?

- A. 1 and 2 only
- B. 2 and 3 only
- C. 1 only
- D. 1, 2 and 3

Correct Answer: A

Prime Minister Narendra Modi chaired the 52nd PRAGATI meeting

NEWS

Prime Minister Narendra Modi chaired the **52nd PRAGATI meeting**, reviewing major infrastructure projects, the TB Mukh Bharat Abhiyan, and cybercrime redressal while stressing timely implementation and inter-agency coordination.

KEY FACTS

1. PM chaired the **52nd PRAGATI (Pro-Active Governance and Timely Implementation)** meeting.
2. Reviewed **four infrastructure projects** worth around **₹30,000 crore**.
3. Projects span **Road, Power, Industrial Corridor, and Metro Rail** sectors across four states.
4. Emphasised effective use of the **PM GatiShakti National Master Plan**.
5. Directed timely updating of project, utility, and infrastructure data on the GatiShakti portal.
6. Urged Ministries and States to resolve pending issues in **mission mode**.
7. Reviewed **TB Mukh Bharat Abhiyan** and stressed the use of **Artificial Intelligence (AI)**.
8. Suggested involving **NCC cadets** and **MY Bharat volunteers** in TB awareness and follow-up.
9. Reviewed grievances related to **Cyber Crime** and **Digital Arrest** frauds.
10. Called for **e-Zero FIR** mechanism for faster cyber fraud registration and response.
11. Stressed stronger coordination among law enforcement agencies, banks, and digital platforms.

STATIC INFORMATION**PRAGATI**

1. PRAGATI stands for **Pro-Active Governance and Timely Implementation**.
2. Launched in **2015**.
3. ICT-enabled platform for direct interaction between the Prime Minister, Union Secretaries, and Chief Secretaries.
4. Aims to monitor infrastructure projects, public grievances, and flagship programmes.

Source: Prime Minister's Office (PMO)

PM GatiShakti National Master Plan

1. Launched in **2021**.
2. GIS-based digital platform integrating infrastructure planning across Ministries.

3. Promotes multimodal connectivity and coordinated infrastructure development.

Source: PM GatiShakti National Master Plan Portal
TB Mukh Bharat Abhiyan

1. National campaign to eliminate tuberculosis in line with India's target of ending TB by **2025**.
2. Supports early detection, treatment, nutrition, and community participation.

Source: Ministry of Health & Family Welfare

Prelims Practice Question

Q3. Consider the following statements regarding PRAGATI:

1. PRAGATI is an ICT-enabled platform for monitoring infrastructure projects, public grievances, and flagship programmes.
 2. It was launched in **2015** to improve coordination between the Centre and States.
 3. PRAGATI is implemented by **NITI Aayog**.
- Which of the statements given above is/are correct?**

- A. 1 and 2 only
B. 2 and 3 only
C. 1 only
D. 1, 2 and 3

Correct Answer: A

The International Maritime Organization (IMO)**NEWS**

The International Maritime Organization (IMO) announced plans to evacuate ships and over 11,000 seafarers stranded in the Persian Gulf due to the escalating conflict in West Asia.

KEY FACTS

1. IMO plans evacuation of ships and **11,000+ seafarers** stranded in the **Persian Gulf**.
2. Evacuation triggered by the ongoing **West Asia conflict**.



- IMO is a **specialized agency of the United Nations**.
- Responsible for the **safety, security, and environmental performance** of international shipping.
- Sets global standards for international maritime transport.
- Established as **Inter-Governmental Maritime Consultative Organization (IMCO)** in **1948**.
- Became a UN specialized agency in **1959**.
- Renamed **International Maritime Organization (IMO)** in **1982**.
- IMO has **176 Member States**.
- India became a member in 1959**.
- Headquarters: **London, United Kingdom**.
- The **Assembly** is the highest governing body and meets **once every two years**.
- The **Council** is the executive organ with **40 elected members**.

STATIC INFORMATION

International Maritime Organization (IMO)

- UN specialized agency responsible for regulating international shipping.
- Established in **1948** (IMCO); operational from **1959**.
- Headquarters: **London, United Kingdom**.
- Objective: Safe, secure, efficient, and environmentally sustainable shipping.
- Key conventions include:
 - **SOLAS** (Safety of Life at Sea)
 - **MARPOL** (Marine Pollution)
 - **STCW** (Standards of Training, Certification and Watchkeeping for Seafarers)

Source: International Maritime Organization (www.imo.org)

Prelims Practice Question

Q4. Consider the following statements regarding the International Maritime Organization (IMO):

- IMO is a specialized agency of the United Nations responsible for regulating international shipping.

- The IMO was originally established as the Inter-Governmental Maritime Consultative Organization (IMCO).
- The headquarters of the IMO is located in Geneva, Switzerland.

Which of the statements given above is/are correct?

- 1 and 2 only
- 2 and 3 only
- 1 only
- 1, 2 and 3

Correct Answer: A

Russia's nuclear-powered Burevestnik (SSC-X-9 Skyfall)

NEWS

Russia's nuclear-powered **Burevestnik (SSC-X-9 Skyfall)** cruise missile has drawn global attention after research suggested it may release radioactive material during flight, raising environmental and security concerns.

KEY FACTS

- Burevestnik** is a **ground-launched, nuclear-powered, nuclear-armed cruise missile**.
- Developed by **Russia**.
- NATO designation: **SSC-X-9 Skyfall**.
- Considered the **world's first nuclear-powered cruise missile**.
- Announced by **President Vladimir Putin** in **2018**.
- Powered by a **miniature nuclear reactor**.
- Designed to have **very long (virtually unlimited) range**.
- Can fly at **low altitudes**, making radar detection difficult.
- Capable of loitering for extended periods before striking targets.
- Concerns have been raised over the **possible release of radioactive material** during flight.

STATIC INFORMATION

Cruise Missile

1. Guided missile that flies within the atmosphere throughout its flight.
2. Powered by jet or rocket propulsion.
3. Designed for precision strikes against land or sea targets.
4. Flies at low altitude using terrain-following navigation to evade radar.

Source: Missile Defense Advocacy Alliance (MDAA)
Nuclear-Powered Missile

1. Uses a compact nuclear reactor for propulsion instead of conventional fuel.
2. Offers significantly greater range than conventional cruise missiles.
3. Raises concerns over radiation safety and environmental contamination.

Source: Federation of American Scientists (FAS)

NATO Reporting Name

1. NATO assigns standardized reporting names to military equipment of non-NATO countries.
2. **SSC-X-9 "Skyfall"** is the NATO designation for the Burevestnik missile.

Source: NATO

Prelims Practice Question

Q5. Consider the following statements regarding the Burevestnik missile:

1. Burevestnik is a nuclear-powered cruise missile developed by Russia.
2. NATO designates the missile as **SSC-X-9 Skyfall**.
3. It is a ballistic missile powered by solid fuel.

Which of the statements given above is/are correct?

- A. 1 and 2 only
B. 2 and 3 only
C. 1 only
D. 1, 2 and 3

Correct Answer: A

Banganapalle mangoes from India

NEWS

APEDA facilitated the **first commercial sea shipment** of **GI-tagged Banganapalle mangoes** from India to Singapore, boosting agricultural exports and promoting Indian horticultural products in global markets.

KEY FACTS

1. **APEDA** facilitated the first commercial **sea shipment** of Banganapalle mangoes to **Singapore**.
2. APEDA functions under the **Ministry of Commerce & Industry**.
3. **Banganapalle** is a premium mango variety cultivated in **Andhra Pradesh**.
4. Also known as **Beneshan, Baneshan, Benishan, Chappatai, and Safeda**.
5. Known for:
 - Golden-yellow colour
 - Fibreless pulp
 - Rich sweetness
 - Pleasant aroma
6. Has strong demand in international markets.
7. Received the **Geographical Indication (GI) Tag** in **2017**.
8. The export is expected to enhance India's fresh fruit exports.

STATIC INFORMATION

APEDA (Agricultural and Processed Food Products Export Development Authority)

1. Established under the **APEDA Act, 1985**.
2. Functions under the **Ministry of Commerce & Industry**.
3. Promotes export of agricultural and processed food products.
4. Supports quality certification, infrastructure development, branding, and market access for exporters.

Source: APEDA

Geographical Indication (GI) Tag

1. Protected under the **Geographical Indications of Goods (Registration and Protection) Act, 1999**.

- Identifies products originating from a specific geographical region possessing unique qualities or reputation.
- GI registration is **valid for 10 years** and can be renewed.

Source: Department for Promotion of Industry and Internal Trade (DPIIT)

Prelims Practice Question

Q1. Consider the following statements regarding Banganapalle Mango and GI Tags:

- Banganapalle Mango received the Geographical Indication (GI) tag in 2017.
- APEDA functions under the Ministry of Commerce & Industry.
- The GI registration in India is valid for 20 years before renewal.

Which of the statements given above is/are correct?

- 1 and 2 only
- 2 and 3 only
- 1 only
- 1, 2 and 3

Correct Answer: A

Indigenous HELINA helicopter-launched

NEWS

Bharat Dynamics Limited (BDL) secured a **₹1,109.37 crore** contract from Hindustan Aeronautics Limited (HAL) to supply launchers for the indigenous **HELINA** helicopter-launched anti-tank guided missile system.



KEY FACTS

- Bharat Dynamics Limited (BDL)** secured a **₹1,109.37 crore** order from **HAL**.
- Contract is for supplying launchers for **HELINA (Helicopter-launched NAG)** missiles.
- HELINA is an **indigenous third-generation "fire-and-forget" Anti-Tank Guided Missile (ATGM)**.
- It is the **helicopter-launched version of the NAG missile**.
- Developed by the **Defence Research and Development Organisation (DRDO)**.
- Indian Air Force version is known as **Dhruvastra**.
- Equipped with **Imaging Infrared (IIR) seeker** and **Lock-on-Before-Launch (LOBL)** capability.
- Effective range: **500 metres to 7 kilometres**.
- Designed for **day and night, all-weather** operations.
- Capable of defeating tanks equipped with **conventional and explosive reactive armour**.
- Uses **top-attack** capability to destroy enemy tanks.

STATIC INFORMATION

HELINA Missile

- Indigenous **third-generation Anti-Tank Guided Missile (ATGM)**.
- Developed by **DRDO** under the Integrated Guided Missile Development Programme.
- Helicopter-launched version of the **Nag** missile.
- Uses **Imaging Infrared (IIR) seeker** with **fire-and-forget** technology.

5. Air Force variant is called **Dhruvastra**.

Source: Defence Research and Development Organisation (DRDO)

Bharat Dynamics Limited (BDL)

1. Established in **1970**.
2. Public Sector Undertaking under the **Ministry of Defence**.
3. Manufactures guided missiles, underwater weapons, and allied defence equipment.

Source: Bharat Dynamics Limited (BDL)

Prelims Practice Question

Q2. Consider the following statements regarding the HELINA missile:

1. HELINA is the helicopter-launched version of the **Nag** Anti-Tank Guided Missile.
2. It is an indigenous **third-generation fire-and-forget** anti-tank guided missile.
3. HELINA has been developed by **Hindustan Aeronautics Limited (HAL)**.

Which of the statements given above is/are correct?

- A. 1 and 2 only
- B. 2 and 3 only
- C. 1 only
- D. 1, 2 and 3

Correct Answer: A

10th Apex-Level Narco-Coordination Centre (NCORD)

NEWS

The Union Home Minister will chair the **10th Apex-Level Narco-Coordination Centre (NCORD)** meeting in New Delhi to strengthen coordination, review anti-drug strategies, and combat narcotics trafficking.

KEY FACTS

1. **Narco-Coordination Centre (NCORD)** was established in **2016**.
2. Strengthened through a **four-tier mechanism** in **2019**.

3. Functions under the **Ministry of Home Affairs (MHA)**.

4. Objective is to improve coordination between:

- Central Ministries
- State Governments
- Law enforcement agencies
- Drug control agencies

5. Promotes intelligence sharing and coordinated action against drug trafficking.

6. **Four-tier structure:**

- Apex Level NCORD Committee – Headed by **Union Home Secretary**
- Executive Level Committee – Headed by **Special Secretary (MHA)**
- State Level Committees – Headed by **Chief Secretaries**
- District Level Committees – Headed by **District Magistrates**

7. Key initiatives:

- **Mission SPANDAN** – Partnership with spiritual institutions for drug awareness.
- **MANAS Helpline (1933)** – National toll-free helpline for reporting and seeking assistance on substance abuse.

STATIC INFORMATION

Narco-Coordination Centre (NCORD)

1. Established by the **Ministry of Home Affairs** in **2016**.
2. Multi-agency coordination mechanism to combat drug trafficking and substance abuse.
3. Strengthened with a **four-tier institutional structure** in **2019**.
4. Supports implementation of the **Narcotic Drugs and Psychotropic Substances (NDPS) Act, 1985**.

Source: Ministry of Home Affairs (MHA)

Narcotics Control Bureau (NCB)

1. Apex agency for enforcement of the **NDPS Act, 1985**.
2. Established in **1986**.
3. Functions under the **Ministry of Home Affairs**.

Source: Narcotics Control Bureau (NCB)

Prelims Practice Question

Q3. Consider the following statements regarding the Narco-Coordination Centre (NCORD):

1. NCORD was established in **2016** under the Ministry of Home Affairs.
2. The **Apex Level NCORD Committee** is headed by the **Union Home Secretary**.
3. **MANAS Helpline** is a toll-free helpline launched under the NCORD mechanism.

Which of the statements given above is/are correct?

- A. **1, 2 and 3**
- B. 1 and 2 only
- C. 2 and 3 only
- D. 1 only

Correct Answer: A

Caspian Sea

NEWS

Recent studies show the **Caspian Sea** has lost nearly **24,000 km²** of surface area since the mid-1990s, with water levels falling by about **two metres** due to climate change.



KEY FACTS

1. The Caspian Sea has lost around **24,000 km²** of surface area since the mid-1990s.
2. Water level has declined by approximately **2 metres**.
3. It is the **world's largest enclosed inland water body**.

4. Located between **Asia and Europe**.
5. It is an **endorheic basin** (no natural outflow).
6. Bordered by **Russia, Azerbaijan, Kazakhstan, Turkmenistan, and Iran**.
7. Salinity varies from **almost fresh water in the north** to **saltier water in the south**.
8. Major inflowing rivers:
 - **Volga**
 - **Ural**
 - **Terek**
9. Major coastal city: **Baku (Azerbaijan)**.
10. Rich in **oil and natural gas reserves**.

STATIC INFORMATION

Caspian Sea

1. World's **largest enclosed inland water body**.
2. Shared by **Russia, Kazakhstan, Turkmenistan, Iran, and Azerbaijan**.
3. An **endorheic lake**, receiving water mainly from the **Volga River**.
4. Home to the **Caspian seal** (the only marine mammal in the Caspian) and **Beluga sturgeon**, famous for caviar.
5. Governed by the **Convention on the Legal Status of the Caspian Sea (2018)**.

Source: Encyclopaedia Britannica; Convention on the Legal Status of the Caspian Sea (2018)

Prelims Practice Question

Q4. Consider the following statements regarding the Caspian Sea:

1. The Caspian Sea is the world's largest enclosed inland water body.
2. It is an endorheic basin with no natural outflow to the oceans.
3. The Danube River is the largest river flowing into the Caspian Sea.

Which of the statements given above is/are correct?

- A. **1 and 2 only**
- B. 2 and 3 only
- C. 1 only
- D. 1, 2 and 3

Correct Answer: A

Madras High Court ruled that a person converting to Islam cannot automatically claim Backward Class (Muslim) status

NEWS

The Madras High Court ruled that a person converting to Islam cannot automatically claim Backward Class (Muslim) status, declaring a 2024 Tamil Nadu Government Order permitting such claims unconstitutional.

KEY FACTS

1. Madras High Court ruled that a convert to Islam **cannot automatically claim Backward Class (Muslim) status**.
2. The Court declared the **2024 Tamil Nadu Government Order** permitting such claims **unconstitutional**.
3. Case originated from a petition filed by a **Thoothukudi resident** who converted to Islam.
4. The petitioner sought a community certificate as **Muslim Lebbai**.
5. The Tahsildar rejected the application, leading to litigation.
6. The Court held that **religious conversion alone does not confer caste/community status**.
7. A person becomes **only a Muslim upon conversion**, not a member of a particular backward Muslim community.
8. The judgment reaffirmed an earlier Madras High Court precedent on the issue.
9. The Court observed that social status cannot be altered merely through an executive government order.

STATIC INFORMATION

Reservation and Religious Conversion

1. Articles **15(4)** and **16(4)** empower the State to provide reservation for socially and educationally backward classes.
2. **Article 341** empowers the President to notify Scheduled Castes.

3. **Article 342** empowers the President to notify Scheduled Tribes.
4. Reservation benefits are based on **constitutional provisions and notified communities**, not merely on religious conversion.

Source: Constitution of India

National Commission for Backward Classes (NCBC)

1. Constitutional body under **Article 338B**.
2. Examines matters relating to the safeguards of Socially and Educationally Backward Classes (SEBCs).
3. Advises the Union Government on inclusion and exclusion from the Central List of OBCs.

Source: Constitution of India / NCBC

Prelims Practice Question

Q5. Consider the following statements:

1. **Article 15(4)** enables the State to make special provisions for socially and educationally backward classes.
2. The **National Commission for Backward Classes (NCBC)** is a constitutional body under **Article 338B**.
3. Religious conversion alone automatically entitles a person to reservation under the Backward Class category.

Which of the statements given above is/are correct?

- A. 1 and 2 only
B. 2 and 3 only
C. 1 only
D. 1, 2 and 3

Correct Answer: A

Bandipur and Nagarhole Tiger Reserves

NEWS

Karnataka has resumed jungle safaris in **Bandipur** and **Nagarhole Tiger Reserves** after scientific assessment of carrying capacity, following



suspension due to repeated tiger attacks since November 2025.



KEY FACTS

1. Karnataka Government has **fully resumed jungle safaris** in Bandipur and Nagarhole Tiger Reserves.
2. Safaris were suspended since **November 2025**.
3. Suspension followed **back-to-back tiger attacks** in which **three farmers lost their lives**.
4. Decision announced by **Chief Minister D.K. Shivakumar**, who also holds the Forest portfolio.
5. Reopening based on **scientific assessment of carrying capacity**.
6. A **technical committee of experts and officials** assessed the reserves.
7. The **State Government accepted the committee's recommendations** before reopening.

STATIC INFORMATION

Bandipur Tiger Reserve

1. Located in **Karnataka**, part of the **Nilgiri Biosphere Reserve**.
2. Declared a **Tiger Reserve in 1973** under **Project Tiger**.
3. Shares boundaries with **Nagarahole, Mudumalai (Tamil Nadu), and Wayanad (Kerala)**.
4. Famous for tigers, Asian elephants, gaur, and leopards.

Source: National Tiger Conservation Authority (NTCA)

Nagarahole Tiger Reserve

1. Also known as **Rajiv Gandhi National Park**.
2. Located in **Kodagu and Mysuru districts of Karnataka**.
3. Part of the **Nilgiri Biosphere Reserve**.
4. Recognised for rich biodiversity and one of India's largest elephant populations.

Source: National Tiger Conservation Authority (NTCA)

Carrying Capacity

1. Refers to the **maximum number of visitors or activities** an ecosystem can sustain without ecological degradation.
2. Used for scientific management of protected areas and ecotourism.

Source: Ministry of Environment, Forest and Climate Change (MoEFCC)

Prelims Practice Question

Q6. Consider the following statements:

1. **Bandipur Tiger Reserve** is a part of the **Nilgiri Biosphere Reserve**.
2. **Nagarahole Tiger Reserve** is also known as **Rajiv Gandhi National Park**.
3. **Project Tiger** was launched in **1983**.

Which of the statements given above is/are correct?

- A. **1 and 2 only**
- B. **2 and 3 only**
- C. **1 only**
- D. **1, 2 and 3**

Correct Answer: A

World Crocodile Day 2026

Why in News?

World Crocodile Day is observed every year on **17 June** to raise awareness about the conservation of crocodiles, gharials, alligators, and other crocodilian species. In **2026**, it is being celebrated worldwide with the theme "**Legacy in Every Scale**."

About World Crocodile Day

1. Observed annually on **17 June**.
2. Dedicated to promoting the conservation of crocodiles and other crocodilian species.

3. Highlights the ecological importance of crocodilians in maintaining healthy aquatic ecosystems.

4. Encourages global efforts to protect wetlands, rivers, mangroves, and other freshwater habitats.

Theme (2026)

1. "Legacy in Every Scale"

2. The theme emphasizes the ancient evolutionary history of crocodilians and the need to conserve these species for future generations.

Importance

1. Promotes awareness about crocodile conservation.
2. Highlights the importance of wetlands, rivers, lakes, and mangrove ecosystems.
3. Encourages protection of endangered crocodilian species.
4. Supports biodiversity conservation.
5. Creates awareness about crocodiles as **apex predators**.
6. Draws attention to threats such as habitat loss, pollution, poaching, and climate change.
7. Promotes scientific research and monitoring.
8. Encourages community participation in wildlife conservation.
9. Helps reduce human-crocodile conflicts.
10. Supports sustainable management of aquatic ecosystems.

Major Threats to Crocodiles

1. Habitat loss due to urbanization and development.
2. Wetland degradation and pollution.
3. Illegal hunting and poaching.
4. Human-crocodile conflict.
5. Climate change affecting nesting and breeding.
6. Destruction of nesting sites through sand mining and riverbank erosion.
7. Overfishing reducing prey availability.
8. Accidental entanglement in fishing nets.
9. Encroachment into wetlands.
10. Disturbance from unregulated tourism.

11. Invasive species competing for habitat and food.

Crocodile Conservation in India

1. **Crocodile Conservation Project** launched in **1975** by the Government of India.
2. Focuses on:
 - Captive breeding
 - Habitat protection
 - Rehabilitation
 - Scientific monitoring
3. Special emphasis on conserving the **Gharial**.
4. Important protected areas include:
 - **Bhitarkanika National Park** (Saltwater Crocodile)
 - **National Chambal Sanctuary** (Gharial)
5. Protected under the **Wildlife (Protection) Act, 1972**.
6. Includes:
 - Population monitoring
 - Nest protection
 - Habitat restoration
 - Community awareness programmes
 - Measures to reduce human-crocodile conflict

About Crocodiles

1. Crocodiles belong to the order **Crocodylia**.
2. They have existed for **over 200 million years** and are often called "**living fossils**."
3. Found in tropical and subtropical regions of Asia, Africa, Australia, and the Americas.
4. They are **ectothermic (cold-blooded)** reptiles.
5. Carnivorous animals feeding on fish, birds, reptiles, and mammals.
6. Possess one of the **strongest bite forces** in the animal kingdom.
7. Eyes, ears, and nostrils are located on the top of the head, enabling them to remain submerged while observing prey.
8. Excellent swimmers that use their powerful tails for propulsion.
9. Females lay eggs and protect nests; mothers often carry hatchlings in their mouths to water.
10. Crocodiles are **keystone species** that help maintain healthy aquatic ecosystems.

11. Lifespan ranges from **50–70 years or more**, depending on the species.
12. **Saltwater Crocodile** is the **largest living reptile** in the world.

Crocodilian Species Found in India

1. **Mugger Crocodile** (Marsh Crocodile)
2. **Saltwater Crocodile**
3. **Gharial**

UPSC Prelims Practice MCQ

Q1. Consider the following statements regarding crocodiles and crocodilian conservation in India:

1. The Crocodile Conservation Project was launched in 1975.
2. India is home to three native crocodilian species—Mugger Crocodile, Saltwater Crocodile, and Gharial.
3. Bhitarkanika National Park is well known for the conservation of the Saltwater Crocodile.

Which of the statements given above is/are correct?

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

Answer: (d) 1, 2 and 3

Explanation:

- **Statement 1 is correct:** India launched the **Crocodile Conservation Project** in **1975**.
- **Statement 2 is correct:** India has **three native crocodilian species**—the **Mugger Crocodile**, **Saltwater Crocodile**, and **Gharial**.
- **Statement 3 is correct:** **Bhitarkanika National Park** in **Odisha** is one of the world's most important habitats for the **Saltwater Crocodile**.

Hamataliwa mawlyngot – In News

Researchers have discovered a **new species of lynx spider**, *Hamataliwa mawlyngot*, from **Mawlyngot Village in the East Khasi Hills of Meghalaya**, marking the **first recorded occurrence of the genus Hamataliwa in the state**.

About Hamataliwa mawlyngot

1. It is a **new species of lynx spider**.
2. Discovered from **East Khasi Hills, Meghalaya**.
3. Named after **Mawlyngot Village**, where it was first identified.
4. Male and female specimens were found on **Molucca bramble shrubs** growing along hillside slopes.
5. This is the **first recorded presence of the genus Hamataliwa in Meghalaya**.
6. Lynx spiders are **active hunters** that **do not spin webs** to capture prey.
7. They rely on **keen eyesight, speed, and agility** to hunt insects among leaves and shrubs.
8. As natural predators of insects, they play an important role in **biological pest control** and maintaining ecosystem balance.
9. The discovery fills an important **biogeographical gap** in the distribution of the genus between the **Indian subcontinent and Southeast Asia**.

UPSC Prelims Practice MCQ (One-Liner)

Q2. Hamataliwa mawlyngot, recently seen in the news, is:

- (a) A newly discovered species of orchid from Arunachal Pradesh
- (b) A new species of lynx spider discovered in Meghalaya
- (c) A freshwater fish discovered in the Brahmaputra River
- (d) A new butterfly species discovered in the Western Ghats

Answer: (b) A new species of lynx spider discovered in Meghalaya

Drop Shipping – In News

The rapid growth of global e-commerce platforms such as **Amazon** has popularized the **drop shipping**

business model, which enables online sellers to operate without maintaining physical inventory.

About Drop Shipping

1. **Drop shipping** is a retail business model in which the seller **does not keep products in stock**.
2. When a customer places an order, the seller purchases the product from a **third-party supplier**, who ships it **directly to the customer**.
3. The seller acts as an **intermediary**, earning profit from the difference between the selling price and the supplier's price.
4. It reduces the need for **warehousing, inventory management, and upfront investment**, making it attractive for startups and small businesses.
5. Although **drop shipping is legal**, issues such as delayed deliveries, product quality, counterfeit goods, and return management may arise.

How Drop Shipping Works

1. The seller lists products on an online store.
2. A customer places an order.
3. The seller forwards the order to a supplier.
4. The supplier ships the product directly to the customer.
5. The seller earns the price difference as profit.

Example:

1. Selling Price = ₹500
2. Supplier Price = ₹300
3. **Gross Profit = ₹200** (excluding marketing and operational costs)

UPSC Prelims Practice MCQ

Q3. Drop Shipping, recently seen in the news, refers to:

- (a) A retail business model where sellers ship products directly from their own warehouses
- (b) A retail model where sellers accept orders without maintaining inventory and suppliers ship directly to customers
- (c) A government scheme for promoting e-commerce exports

(d) A logistics system used exclusively for international trade

Answer: (b) A retail model where sellers accept orders without maintaining inventory and suppliers ship directly to customers

Himalayan Pangolin – In News

Researchers have confirmed that the **Himalayan Pangolin (*Manis aurita*)** is a **distinct living species**, separate from the **Chinese Pangolin (*Manis pentadactyla*)**, based on recent taxonomic and genetic studies.



About Himalayan Pangolin

1. **Scientific Name:** *Manis aurita*
2. It is a **distinct species of pangolin** native to the **southern Himalayan foothills**.
3. Studies suggest the species experienced a **population decline during the 14th century**, coinciding with the **Little Ice Age** in the Himalayan region.

Key Features

1. Larger body size and skull than the Chinese pangolin.
2. Has **smaller ears** and a **shorter, broader nasal bone**.
3. Possesses a well-developed **olfactory bulb**, enabling it to locate **ants and termites** through its keen sense of smell.

Distribution

1. Found in:
 - **Nepal**

- **South Tibet**
- **Northeast India, including Assam**

Threats

1. **Illegal wildlife trade** for scales and body parts.
2. Demand from **traditional medicine markets**.
3. **Inbreeding** due to small and isolated populations.

UPSC Prelims Practice MCQ

Q4. Himalayan Pangolin (Manis aurita), recently in the news, is:

- (a) A newly discovered species of bat found in the Western Ghats
- (b) A distinct species of pangolin found in the southern Himalayan foothills
- (c) A species of Himalayan marmot endemic to Ladakh
- (d) A venomous reptile found in Northeast India

Answer: (b) A distinct species of pangolin found in the southern Himalayan foothills

Leucine – In News

Researchers have discovered that **leucine**, an essential branched-chain amino acid (BCAA), acts as a **protective shield for mitochondria** by preventing the premature degradation of proteins in the outer mitochondrial membrane.

About Leucine

1. **Leucine** is an **essential amino acid**, meaning it **cannot be synthesized by the human body** and must be obtained through the diet.
2. It belongs to the **Branched-Chain Amino Acids (BCAAs)** family, along with:
 - **Isoleucine**
 - **Valine**
3. BCAAs are vital for the normal growth and functioning of:
 - Skeletal muscles
 - Nervous system
 - Heart
 - Brain

Key Functions

1. Promotes **muscle growth and tissue repair**.
2. Supports **energy production** during physical activity.
3. Helps maintain the **outer membrane of mitochondria**.
4. Protects mitochondrial membrane proteins by interacting with the **SEL1L protein**, preventing their premature degradation and ensuring healthy mitochondrial function.

What are Amino Acids?

1. **Amino acids** are the **building blocks of proteins**.
2. Proteins are essential for the structure, growth, and repair of body tissues.
3. There are **20 standard amino acids**, of which:
 - **11 are non-essential** (can be synthesized by the body).
 - **9 are essential** and must be obtained through food.

Nine Essential Amino Acids

1. Histidine
2. Isoleucine
3. **Leucine**
4. Lysine
5. Methionine
6. Phenylalanine
7. Threonine
8. Tryptophan
9. Valine

UPSC Prelims Practice MCQ (One-Liner)

Q5. Leucine, recently seen in the news, is:

- (a) A vitamin essential for blood clotting
- (b) An essential branched-chain amino acid involved in muscle growth and mitochondrial protection
- (c) A hormone secreted by the pancreas to regulate blood sugar
- (d) An enzyme involved in DNA replication

Answer: (b) An essential branched-chain amino acid involved in muscle growth and mitochondrial protection

Norwegian Sea – In News

Recently, **UK fighter jets intercepted a Russian maritime patrol aircraft** after it repeatedly approached a **carrier strike group** operating in the **Norwegian Sea**, highlighting rising military activity in the North Atlantic region.



About the Norwegian Sea

1. The **Norwegian Sea** is a **marginal sea of the Arctic Ocean**, located between the **North Atlantic Ocean and the Arctic Ocean**.
2. It serves as an important **maritime route** and is strategically significant for naval operations and global shipping.

Location & Boundaries

1. **East:** Norway
2. **West:** Iceland
3. **Northwest:** Greenland
4. **Northeast:** Connected to the **Barents Sea**
5. **North:** Separated from the **Greenland Sea** by the **Jan Mayen Ridge**
6. **Southwest:** Separated from the Atlantic Ocean by the **Iceland–Faroe submarine ridge**

Geological Origin

- Formed around **250 million years ago** due to the **divergence of the Eurasian Plate and the North American Plate**, leading to the opening of the North Atlantic Ocean.

Major Ocean Currents

1. **North Atlantic Current** carries **warm water** northwards into the Norwegian and Barents Seas.
2. **East Iceland Current** brings **cold Arctic waters** southward towards Iceland.
3. The interaction of warm and cold currents creates **highly productive fishing grounds**.

Ecological Importance

1. Acts as a **transition zone** between **boreal and Arctic climatic regions**.
2. Supports rich marine biodiversity, including:
 - Cod
 - Herring
 - Mackerel
 - Marine mammals and seabirds

Strategic Importance

1. A key region for:
 - NATO naval operations
 - Arctic security
 - Energy transportation
 - Fisheries
2. Increasing geopolitical importance due to growing military activity and Arctic shipping routes.

UPSC Prelims Practice MCQ

Q6. The Norwegian Sea, recently seen in the news, is best described as:

- (a) A marginal sea of the Arctic Ocean located between Norway, Iceland, and Greenland
- (b) An inland sea located entirely within Russia
- (c) A tropical sea in the western Pacific Ocean
- (d) A freshwater lake situated between Norway and Sweden

Answer: (a) A marginal sea of the Arctic Ocean located between Norway, Iceland, and Greenland

Performance Grading Index (PGI)

Why in News?

Recently, the **Ministry of Education** released the **Performance Grading Index 2.0 for States/UTs (PGI-S)** and the **Performance Grading Index for Districts (PGI-D)** for **2025–26** to assess the performance of school education systems across the country.

About Performance Grading Index (PGI)

1. **Performance Grading Index (PGI)** is an assessment framework developed by the **Department of School Education and Literacy**.
2. It measures the performance of **States, Union Territories, and Districts** in school education.
3. The index provides a **uniform grading system** to encourage healthy competition and improve the quality of school education.
4. **PGI 2.0** is based on **73 indicators** grouped under **2 categories** and **6 domains**.

Performance Grading Index – States/UTs (PGI-S)

About

1. Developed by the **Department of School Education & Literacy**, Ministry of Education.
2. Evaluates the performance of **States and Union Territories** by assigning performance grades.

Weightage

1. **Total Score: 1000 points**
2. **Indicators: 70**

Categories

1. Outcome
2. Governance & Management

Six Domains

1. Learning Outcomes and Quality
2. Access
3. Infrastructure & Facilities
4. Equity
5. Governance Processes
6. Teacher Education & Training

Data Sources

The framework uses data from:

1. **Unified District Information System for Education Plus (UDISE+)**
2. **PARAKH Rashtriya Sarvekshan 2024**
3. **PM POSHAN Portal**
4. **PRABAND Portal**
5. **Vidyanjali Portal**

Performance Grading Index – Districts (PGI-D)

Objective

1. To assess the performance of districts on a common framework with greater emphasis on **learning outcomes** and the effectiveness of educational policies.

Weightage

1. **Total Score: 600 points**
2. **Indicators: 70**

Six Categories

1. Outcomes
2. Effective Classroom Transaction
3. Infrastructure Facilities & Student Entitlements
4. School Safety & Child Protection
5. Digital Learning
6. Governance Process

Eleven Domains

1. Learning Outcomes and Quality (LOQ)
2. Access Outcomes (AO)
3. Teacher Availability and Professional Development Outcomes (TAPDO)
4. Learning Management (LM)
5. Learning Enrichment Activities (LEA)
6. Infrastructure, Facilities & Student Entitlements (IF&SE)
7. School Safety & Child Protection (SS&CP)
8. Digital Learning (DL)
9. Funds Convergence & Utilisation (FCU)
10. Attendance Monitoring Systems (AMS)
11. School Leadership Development (SLD)

Data Sources

The district-level index is based on data from:

1. **Unified District Information System for Education Plus (UDISE+)**
2. **PARAKH Rashtriya Sarvekshan 2024**
3. **PRABANDH Portal**

Significance



1. Promotes evidence-based improvements in school education.
2. Encourages competitive federalism among States and districts.
3. Supports monitoring of educational outcomes under the **National Education Policy (NEP) 2020**.
4. Helps identify gaps in governance, infrastructure, access, and learning quality.

UPSC Prelims Practice MCQ

Q1. Consider the following statements regarding the Performance Grading Index (PGI):

1. It is developed by the Department of School Education and Literacy under the Ministry of Education.
2. PGI-S evaluates the performance of States and Union Territories using indicators related to learning outcomes, governance, infrastructure, and equity.
3. PGI-D is based exclusively on data from the UDISE+ portal.

Which of the statements given above is/are correct?

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

Answer: (a) 1 and 2 only

Rashtriya Gokul Mission (RGM) – In News

The **Rashtriya Gokul Mission (RGM)** continues to play a key role in improving **indigenous cattle breeds**, enhancing **milk production**, and promoting **scientific breeding practices** to strengthen India's dairy sector.

About Rashtriya Gokul Mission (RGM)

1. **Launched:** December 2014
2. **Implemented by:** Department of Animal Husbandry and Dairying

3. **Ministry:** Ministry of Fisheries, Animal Husbandry and Dairying

The mission aims to **develop, conserve, and genetically improve indigenous bovine breeds** while increasing milk production in a sustainable manner.



Objectives

1. Enhance the **productivity of indigenous cattle and buffaloes** using advanced breeding technologies.
2. Increase **milk production** sustainably.
3. Promote the use of **high genetic merit bulls** for breed improvement.
4. Expand **Artificial Insemination (AI)** services through doorstep delivery.
5. Encourage **scientific conservation and rearing** of indigenous bovine breeds.
6. Improve the income of dairy farmers by making dairying more profitable.

Key Components

1. **Genetic improvement** of indigenous bovines.

2. Expansion of **Artificial Insemination (AI)** network.
3. Promotion of **In Vitro Fertilization (IVF)** technology.
4. Use of **sex-sorted semen** to improve breeding efficiency.
5. Establishment of **Breed Multiplication Farms**.

Funding Pattern

1. Most components are implemented on a **100% Grant-in-Aid** basis.

Exceptions:

1. **Accelerated Breed Improvement Programme**
 - Government provides **₹5,000** per successful IVF pregnancy.
2. **Sex-Sorted Semen**
 - Subsidy of **up to 50% of the cost**.
3. **Breed Multiplication Farms**
 - Subsidy of **up to 50% of the capital cost**, subject to a maximum of **₹2 crore** per project.

Significance

1. Conserves India's **indigenous cattle breeds**.
2. Improves **milk productivity** and dairy farmers' income.
3. Supports **genetic improvement** using modern reproductive technologies.
4. Contributes to **livestock development, food security, and rural livelihoods**.

UPSC Prelims Practice MCQ

Q2. Consider the following statements regarding the Rashtriya Gokul Mission (RGM):

1. It was launched in 2014 to conserve and develop indigenous bovine breeds.
2. The scheme is implemented by the Department of Animal Husbandry and Dairying.
3. All components of the scheme are implemented entirely on a 100% grant-in-aid basis without any exception.

Which of the statements given above are correct?

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

Answer: (a) 1 and 2 only

Explanation:

1. **Statements 1 & 2:** Correct.
2. **Statement 3:** Incorrect. Certain components—such as **IVF support, sex-sorted semen, and breed multiplication farms**—receive **partial subsidies** rather than full 100% grant-in-aid.

Specialised Investment Fund (SIF) – In News

Recently, **Specialised Investment Funds (SIFs)**, introduced by the **Securities and Exchange Board of India (SEBI)**, crossed **₹13,814 crore in Assets Under Management (AUM)**, reflecting strong investor interest in this new investment category.



About Specialised Investment Fund (SIF)

1. **Specialised Investment Fund (SIF)** is a **new investment product** introduced by the Securities and Exchange Board of India.
2. It aims to **bridge the gap between traditional mutual funds and Portfolio Management Services (PMS)** by offering greater investment flexibility.
3. The framework has been introduced through amendments to the **SEBI (Mutual Funds) Regulations, 1996**.

Minimum Investment

1. Minimum investment requirement: **₹10 lakh per investor.**
2. Investors can opt for:
 - **Systematic Investment Plan (SIP)**
 - **Systematic Withdrawal Plan (SWP)**
3. However, the **minimum investment threshold of ₹10 lakh must be maintained.**
4. SIFs may be:
 - **Open-ended**
 - **Closed-ended**
 - **Interval schemes**

Investment Strategies

Equity-Oriented

1. Equity Long-Short Funds
2. Equity Ex-Top 100 Long-Short Funds
3. Sector Rotation Long-Short Funds

Debt-Oriented

1. Debt Long-Short Funds
2. Sectoral Debt Long-Short Funds

Hybrid

1. Active Asset Allocator Long-Short Funds
2. Hybrid Long-Short Funds

Note: Each SIF is permitted to offer **only one strategy under each investment category.**

Eligibility Criteria for Asset Management Companies (AMCs)

An AMC can launch a SIF through either of the following routes:

Route 1

1. Operational for **at least 3 years**, and
2. Average **Assets Under Management (AUM) of ₹10,000 crore** during the preceding three years.

Route 2

1. Appointment of a **Chief Investment Officer (CIO)** with:
 - **Minimum 10 years of experience**, and
 - **Experience managing ₹5,000 crore or more** in assets.
2. Additionally, the AMC must have:

- An extra fund manager with at least **3 years of experience** managing **₹500 crore** or more.

Significance

1. Provides investors with **more sophisticated investment strategies** than conventional mutual funds.
2. Bridges the gap between **Mutual Funds** and **Portfolio Management Services (PMS)**.
3. Enhances **investment flexibility** while remaining under SEBI's regulatory framework.
4. Offers greater opportunities for **high-net-worth investors** seeking diversified strategies.

UPSC Prelims Practice MCQ

Q3. Consider the following statements regarding Specialised Investment Funds (SIFs):

1. Specialised Investment Funds (SIFs) have been introduced by SEBI.
2. SIFs aim to bridge the gap between mutual funds and Portfolio Management Services (PMS).
3. The minimum investment required in a Specialised Investment Fund is **₹10 lakh**.

Which of the statements given above are correct?

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

Answer: (a) 1, 2 and 3

Explanation:

1. **Statement 1:** Correct. SIFs are regulated and introduced by **SEBI**.
2. **Statement 2:** Correct. They provide an investment avenue between mutual funds and PMS.
3. **Statement 3:** Correct. The prescribed minimum investment is **₹10 lakh per investor**.

Giant African Snail – In News

The **Giant African Snail (*Lissachatina fulica*)**, one of the world's most destructive invasive species, is rapidly spreading across **Tirunavaya Panchayat in Kerala**, reaching school campuses and raising concerns over public health and agriculture.



About Giant African Snail

1. **Scientific Name:** *Lissachatina fulica*
2. It is a **large terrestrial land snail** native to **East Africa**.
3. Recognized as **one of the world's worst invasive alien species** by the IUCN.
4. Introduced to many countries through the **pet trade, food industry, and accidental transport**.

Habitat

1. Prefers **warm, humid tropical climates**.
2. Commonly found in:
 - Agricultural fields
 - Wetlands
 - Forests
 - Riverbanks
 - Urban and suburban areas

Food Habits

1. Feeds on **over 500 species of crops and ornamental plants**.
2. Adult snails also consume:
 - Decaying organic matter
 - Fallen fruits
 - Animal manure
 - Garbage

Key Features

1. It is a **hermaphrodite** (possesses both male and female reproductive organs).
2. Has a **large, cone-shaped shell** with brown vertical stripes.
3. Shell length generally ranges from **50–100 mm**, but can reach up to **200 mm**.

Health Impact

1. Can carry the **rat lungworm parasite (*Angiostrongylus cantonensis*)**.
2. The parasite may cause **eosinophilic meningitis**, a serious infection affecting the brain and spinal cord in humans.

UPSC Prelims Practice MCQ (One-Liner)

Q4. The Giant African Snail (*Lissachatina fulica*), recently seen in the news, is:

- (a) A native freshwater mollusc of the Western Ghats
- (b) An invasive land snail capable of damaging crops and transmitting the rat lungworm parasite
- (c) A marine snail found in the Indian Ocean
- (d) A pollinator important for tropical agriculture

Answer: (b) An invasive land snail capable of damaging crops and transmitting the rat lungworm parasite

Partnership on Cyber, Critical Technologies and Supply Chains (PACTS) – In News

India and Australia have launched the **Partnership on Cyber, Critical Technologies and Supply Chains (PACTS)** to deepen cooperation in **cybersecurity, critical technologies, resilient supply chains, digital resilience, and defence research**.

About PACTS

1. **PACTS** is a comprehensive bilateral framework to strengthen strategic cooperation between **India and Australia**.

2. It replaces the **2020 Framework Arrangement on Cyber and Cyber Enabled Critical Technology Cooperation**.
3. The partnership will be jointly overseen by:
 - **India's Deputy National Security Advisor (DNSA)**
 - **Australia's Deputy Secretary, International and Security Group, Department of the Prime Minister and Cabinet.**

Key Pillars of PACTS

Supply Chain Resilience

1. Develop **secure, resilient, and trusted supply chains**.
2. Enhance cooperation on **undersea cable security** through the **Quad Partnership for Cable Connectivity and Resilience**.
3. **India Lead:** National Security Council Secretariat (NSCS).

Critical Technologies

1. Promote collaboration in:
 - Artificial Intelligence (AI)
 - Space technologies
 - Telecommunications
 - Biotechnology
 - Advanced materials

2. **India Lead:** NSCS.

Cyber Security

1. Strengthen cooperation to:
 - Combat cybercrime
 - Enhance cyber resilience
 - Protect critical infrastructure
2. Establish:
 - Bilateral cyber cooperation mechanism
 - Dialogue on cybersecurity and data governance
 - Cyber technology skill incubator
3. **India Lead:** Cyber Diplomacy Division, Ministry of External Affairs.

Digital Resilience

1. Expand cooperation on **Digital Public Infrastructure (DPI)** across the **Indo-Pacific**.
2. Support partner countries through:

- Capacity-building programmes
 - Pilot projects based on India's DPI model.
3. **India Lead:** Oceania Division, Ministry of External Affairs.

Defence Research Collaboration

1. Strengthen cooperation between:
 - **DRDO (India)**
 - **Defence Science and Technology Group (Australia)**
2. Focus areas include:
 - Maritime surveillance
 - Advanced materials
 - Defence technologies
 - Defence start-up collaboration
3. **India Lead:** Ministry of Defence.

Significance

1. Strengthens the **India – Australia Comprehensive Strategic Partnership**.
2. Enhances resilience against emerging cyber and technology threats.
3. Promotes trusted supply chains and secure digital infrastructure in the **Indo-Pacific**.
4. Supports collaboration under the **Quad** framework.

UPSC Prelims Practice MCQ (One-Liner)

Q5. The Partnership on Cyber, Critical Technologies and Supply Chains (PACTS), recently launched, is a bilateral initiative between:

- (a) India and Japan
- (b) India and Australia
- (c) India and the United States
- (d) India and France

Answer: (b) India and Australia

Wildlife Institute of India (WII) – In News

The **28th meeting of the Wildlife Institute of India (WII) Society** was recently chaired by the **Union Minister for Environment, Forest and Climate Change**, highlighting the institute's role in

strengthening wildlife conservation, research, and capacity building in India.

About Wildlife Institute of India (WII)

1. The **Wildlife Institute of India (WII)** is an **autonomous institution** established in **1982** under the **Ministry of Environment, Forest and Climate Change (MoEFCC)**.
2. **Headquarters:** Dehradun, Uttarakhand.
3. It is India's premier institution for **wildlife research, training, education, and conservation planning**.

Objectives

1. Promote scientific research on **wildlife and biodiversity**.
2. Build capacity by training **forest officers, wildlife managers, and researchers**.
3. Develop scientific techniques for **wildlife conservation and habitat management**.
4. Provide technical advice on wildlife-related issues to governments and agencies.
5. Collaborate with national and international organizations in wildlife research and conservation.

Major Areas of Research

WII undertakes research in:

1. Biodiversity conservation
2. Endangered species recovery
3. Wildlife management
4. Wildlife forensics
5. Human–wildlife conflict
6. Climate change and ecosystems
7. Spatial ecology and GIS modelling
8. Eco-development and habitat restoration

International Role

1. WII has trained **forest and wildlife professionals** from several developing countries, particularly in **South and Southeast Asia**.
2. It is recognized as a **regional centre of excellence** for wildlife conservation and natural resource management.

Governance Structure

WII Society

1. Apex governing body of the institute.
2. **Chairperson:** Union Minister for Environment, Forest and Climate Change.
3. Includes representatives from:
 - Central Government
 - State Governments
 - Academic and research institutions.

Governing Body

1. Executive body responsible for administration.
2. **Chairperson:** Secretary, MoEFCC.
3. Includes representatives from Central and State Governments and **Chief Wildlife Wardens** on a rotational basis.

Significance

1. Supports scientific conservation of India's rich wildlife heritage.
2. Strengthens evidence-based policymaking.
3. Plays a key role in implementing wildlife protection programmes and capacity building.
4. Contributes to biodiversity conservation under national and international commitments.

UPSC Prelims Practice MCQ

Q6. The Wildlife Institute of India (WII), recently seen in the news, is:

- (a) A statutory body under the Ministry of Agriculture and Farmers Welfare
- (b) An autonomous institution under the Ministry of Environment, Forest and Climate Change for wildlife research and training
- (c) A constitutional body responsible for wildlife law enforcement
- (d) A UNESCO-supported international wildlife organisation

Answer: (b) An autonomous institution under the Ministry of Environment, Forest and Climate Change for wildlife research and training

Neonatal Sepsis – In News



The global **NeoSep-1 clinical trial**, which evaluates effective antibiotic combinations for treating **newborns with sepsis**, has expanded to **India**. The **first infant** has been enrolled at the **Jawaharlal Institute of Postgraduate Medical Education and Research (JIPMER), Puducherry**, strengthening efforts to combat **antimicrobial resistance (AMR)**.

About Neonatal Sepsis

1. **Neonatal sepsis** is a **life-threatening bloodstream infection** occurring in **newborns younger than 90 days**, particularly **premature and low-birth-weight infants**.
2. It is one of the **leading causes of neonatal mortality**, accounting for a significant proportion of newborn deaths worldwide.

Causes

1. Primarily caused by **bacterial infections**, including:
 - **Escherichia coli (E. coli)**
 - **Listeria**
 - **Group B Streptococcus (GBS)**
2. In some cases, the **Herpes Simplex Virus (HSV)** may also cause severe neonatal infection, especially when the mother acquires a primary HSV infection during pregnancy.

Classification

Early-Onset Sepsis (EOS)

1. Occurs **within the first 72 hours after birth**.
2. Usually acquired from the **mother during pregnancy or childbirth**.

Late-Onset Sepsis (LOS)

1. Occurs **after 72 hours of life**.
2. May be:
 - **Healthcare-associated** (hospital-acquired)
 - **Community-acquired**

Common Symptoms

1. Fever or low body temperature
2. Breathing difficulty
3. Poor feeding or weak sucking
4. Reduced activity or lethargy
5. Low blood sugar

6. Vomiting or diarrhea
7. Seizures
8. Swollen abdomen
9. Fast or slow heart rate
10. **Jaundice** (yellowing of the skin and eyes)

Treatment

1. Neonatal sepsis is **treatable if diagnosed early**.
2. Management includes:
 - **Hospitalization**
 - **Intravenous (IV) antibiotics**
 - Supportive care such as oxygen, fluids, and monitoring of vital signs.

Significance of NeoSep-1 Trial

1. Aims to identify **effective antibiotic combinations** for newborn sepsis.
2. Addresses the growing challenge of **antimicrobial resistance (AMR)**.
3. Helps develop evidence-based treatment guidelines for neonatal infections worldwide.

UPSC Prelims Practice MCQ

Q7. Neonatal Sepsis, recently seen in the news, refers to:

- (a) A congenital genetic disorder affecting newborns
- (b) A life-threatening bloodstream infection occurring in newborns, usually within the first 90 days of life
- (c) A viral respiratory infection affecting only premature infants
- (d) A nutritional deficiency caused by inadequate breastfeeding

Answer: (b) A life-threatening bloodstream infection occurring in newborns, usually within the first 90 days of life

Nirbhay Chetna Initiative – In News

The Central Government has launched the **Nirbhay Chetna Initiative** to sensitise **17.5 lakh elected male representatives** across India on **gender**

equality, women's safety, and gender-responsive governance at the grassroots level.

About Nirbhay Chetna Initiative

1. **Nirbhay Chetna** is a flagship intervention under the **Nirbhay Raho Initiative**.
2. It is the **first national programme of its kind** implemented under the **Nirbhaya Fund**.
3. **Nodal Ministry: Ministry of Panchayati Raj**.
4. The initiative aims to promote **gender-responsive governance** by creating awareness, accountability, and leadership among elected representatives in **Panchayati Raj Institutions (PRIs)**.

Objectives

1. Sensitise male elected representatives on:
 - Gender equality
 - Women's safety and security
 - Prevention of gender-based violence
2. Strengthen community participation in ensuring safe and inclusive rural governance.
3. Encourage behavioural change and greater accountability at the grassroots level.

Key Components of Nirbhay Raho

Nirbhay Chetna

1. Focuses on sensitising **17.5 lakh elected male representatives**.
2. Aims to promote gender-sensitive decision-making in Panchayats.
3. Around **28,500 Master Trainers** will be trained at the **State, district, and block levels** to implement the programme nationwide.

Nirbhay Netri

1. Focuses on **capacity building and legal awareness** of elected women representatives.
2. Empowers women leaders to effectively participate in local governance.

Nirbhay Drishti

1. Provides for the installation of **CCTV cameras** at strategic rural locations.
2. Strengthens **technology-enabled safety infrastructure** in Panchayats.

Significance

1. Promotes **gender-responsive local governance**.
2. Strengthens implementation of women's safety initiatives at the grassroots.
3. Encourages community participation in creating safer rural environments.
4. Supports the constitutional vision of **inclusive and participatory Panchayati Raj Institutions**.

UPSC Prelims Practice MCQ (One-Liner)

Q8. The 'Nirbhay Chetna' Initiative, recently launched by the Government of India, primarily aims to:

- (a) Provide financial assistance to women entrepreneurs in rural areas
- (b) Sensitise elected male representatives on gender equality and women's safety through Panchayati Raj Institutions
- (c) Establish women's police stations in every district
- (d) Train women in cyber security and digital literacy

Answer: (b) Sensitise elected male representatives on gender equality and women's safety through Panchayati Raj Institutions

Doctrine of Constructive Res Judicata

Why in News?

Recently, the **Supreme Court of India** reiterated that the **Doctrine of Constructive Res Judicata**, embodied in **Explanation IV to Section 11 of the Code of Civil Procedure (CPC), 1908**, prevents parties from litigating disputes in installments and ensures finality in judicial proceedings.

About the Doctrine of Constructive Res Judicata

1. The doctrine is an extension of the principle of **Res Judicata**.
2. The concept of **Res Judicata** originated from **English Common Law**.

3. The term **Res Judicata** literally means "**a matter already judged**" and is also known as **claim preclusion**.
4. It bars courts from trying a matter that has already been finally decided between the same parties.
5. The principle applies in both **civil and criminal proceedings**, though it is statutorily codified in civil law.

Res Judicata under Indian Law

1. It is embodied in **Section 11 of the Code of Civil Procedure (CPC), 1908**.
2. It prevents repeated litigation over the same issue between the same parties once a competent court has delivered a final judgment.
3. The objective is to ensure:
 - Finality of judicial decisions
 - Judicial efficiency
 - Prevention of multiplicity of litigation

What is Constructive Res Judicata?

1. **Constructive Res Judicata** extends the doctrine of Res Judicata.
2. It applies to matters **which could and ought to have been raised in an earlier suit but were not**.
3. A party cannot subsequently institute another suit on issues arising from the same cause of action if it had a fair opportunity to raise them earlier.
4. The doctrine is based on:
 - **Section 11 (Explanation IV)** of the CPC
 - Read together with **Order II Rule 2 of the CPC**

Explanation IV of Section 11

Explanation IV provides that:

"Any matter which might or ought to have been made a ground of defence or attack in a former suit shall be deemed to have been a matter directly and substantially in issue in such suit."

Thus, issues intentionally omitted in an earlier proceeding are treated as if they had already been decided.

Conditions for Applicability

For the doctrine of Constructive Res Judicata to apply:

1. The parties in both proceedings must be the **same** (or claim under the same parties).
2. The **subject matter** of both proceedings must be identical.
3. The issue in the later proceeding **could and ought to have been raised** in the earlier proceeding.
4. The earlier proceeding must have been **finally decided on merits** by a competent court.

Significance

1. Prevents repetitive and piecemeal litigation.
2. Ensures finality of judicial decisions.
3. Promotes judicial economy and efficient use of court resources.
4. Protects parties from harassment through multiple suits.
5. Upholds certainty and stability in the administration of justice.

UPSC Prelims Practice MCQ

Q9. Consider the following statements regarding the Doctrine of Constructive Res Judicata:

1. It is an extension of the principle of Res Judicata.
2. It bars a party from raising in a subsequent suit an issue that could and ought to have been raised in an earlier suit.
3. The doctrine is embodied in **Explanation IV to Section 11 of the Code of Civil Procedure, 1908**.

Which of the statements given above is/are correct?

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

(d) 1, 2 and 3

Answer: (d) 1, 2 and 3

Explanation:

1. **Statement 1 is correct: Constructive Res Judicata** is an extension of the doctrine of **Res Judicata**.
2. **Statement 2 is correct:** It prevents parties from raising issues in a later proceeding that **could and ought to have been raised** in the earlier suit.
3. **Statement 3 is correct:** The doctrine is embodied in **Explanation IV to Section 11 of the Code of Civil Procedure, 1908**, and is read along with **Order II Rule 2 of the CPC**.

Berijam Lake

Why in News?

Recently, the **Madurai Bench of the Madras High Court** referred to the Forest Bench a Public Interest Litigation (PIL) seeking a **scientific census to assess the ecological viability of the Berijam Lake area** for its possible notification as a **Tiger Reserve**.

About Berijam Lake

1. **Berijam Lake** is an **artificial freshwater lake** located in **Kodaikanal**, in the **Tamil Nadu**.
2. It is situated in the **Upper Palani Hills** of the **Western Ghats**, in **Dindigul district**.
3. The lake covers an area of approximately **59 acres**.
4. It was formed in **1867** following the construction of a dam with sluice outlets as part of a **micro-watershed development project**.

Historical Background

1. The lake is located close to the site of **Fort Hamilton**.
2. During the British period, the surrounding area was used as a **military cantonment**.

Key Features

1. Surrounded by dense forests and rolling hills, the lake is known for its **clear waters and scenic beauty**.
2. It serves as an important **source of drinking water** for nearby towns.
3. It forms an ecologically sensitive part of the **Palani Hills ecosystem**.

Biodiversity

Flora

1. Supports rich **montane forests (Shola forests)** and grassland ecosystems characteristic of the Western Ghats.
2. Acts as an important conservation area for native plant species.

Fauna

The lake and surrounding forests support diverse wildlife, including:

Mammals

1. Indian Gaur (Bison)
2. Indian Elephant
3. Nilgiri Langur
4. Deer

Birds

1. Serpent Eagle
2. Rosefinch
3. Leaf Warblers
4. Pale-rumped Swallow

Ecological Significance

1. Part of the biodiversity-rich **Western Ghats**, a global biodiversity hotspot.
2. Supports watershed conservation and freshwater availability.
3. Provides habitat for several endemic and threatened flora and fauna.
4. Plays a crucial role in maintaining the ecological balance of the Palani Hills landscape.

UPSC Prelims Practice MCQ

Q1. Consider the following statements regarding Berijam Lake:

1. It is an artificial lake located in the Upper Palani Hills of Tamil Nadu.

2. It was formed in 1867 following the construction of a dam.
3. It is situated in the Nilgiri Hills and is the source of the Cauvery River.

Which of the statements given above is/are correct?

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

Answer: (a) 1 and 2 only

Explanation:

1. **Statement 1 is correct:** Berijam Lake is an **artificial lake** situated in the **Upper Palani Hills** near **Kodaikanal** in **Tamil Nadu**.
2. **Statement 2 is correct:** The lake was **formed in 1867** after the construction of a dam with sluice outlets.
3. **Statement 3 is incorrect:** Berijam Lake is located in the **Palani Hills**, **not the Nilgiri Hills**, and it is **not the source of the Cauvery River**.

Index of Services Production (ISP)

Why in News?

Recently, the **Ministry of Statistics and Programme Implementation (MoSPI)** announced that it is preparing to launch the **Index of Services Production (ISP)** in **July 2026**, providing a high-frequency indicator to measure the performance of India's services sector.

About Index of Services Production (ISP)

1. The **Index of Services Production (ISP)** is a **short-term economic indicator** designed to measure changes over time in the **volume of output produced by the services sector** relative to a specified base period.
2. It tracks the **real output** of service-producing industries over time.
3. It is being developed with **2024–25 as the proposed base year**.

4. The index will primarily use **Goods and Services Tax (GST)** data to monitor activity in the formal services sector.

Objective

1. Measure short-term changes in the performance of the services sector.
2. Provide timely indicators for economic policymaking.
3. Complement existing indicators such as the **Index of Industrial Production (IIP)**.
4. Improve monitoring of India's services-led economy.

Principal Data Sources

Administrative Data

Data will be collected from sectors such as:

1. Air transport
2. Railways
3. Banking
4. Insurance

GST Data

GST records will be used for:

1. Wholesale and retail trade
2. Hotels and hospitality
3. Road and water transport
4. Warehousing
5. Telecommunications
6. Real estate
7. Information Technology (IT) services
8. Professional services
9. Entertainment services

ASISSE Data

1. Data from the **Annual Survey of Incorporated Services Sector Enterprises (ASISSE)** will later be incorporated for:
 - Health services
 - Education services

Key Features

1. **Base Year:** 2024–25
2. Primarily reflects the **formal services sector** because it relies on GST-registered enterprises.
3. Measures **real output**, not merely value or prices.

4. **Sectoral weights** are based on each sector's contribution to **Gross Value Added (GVA)** as estimated in the **National Accounts Statistics (NAS)**.

Significance

1. Provides a comprehensive high-frequency measure of India's services sector.
2. Improves economic monitoring and policy formulation.
3. Enables better assessment of sector-wise growth trends.
4. Complements GDP estimates and the Index of Industrial Production (IIP).
5. Particularly important as the **services sector contributes more than half of India's Gross Value Added (GVA)**.

UPSC Prelims Practice MCQ

Q2. Consider the following statements regarding the Index of Services Production (ISP):

1. It is a short-term indicator that measures changes in the real output of the services sector.
2. The proposed base year for the Index of Services Production is **2024–25**.
3. The weights assigned to various sectors in the ISP are based on their contribution to **Gross Value Added (GVA)**.

Which of the statements given above is/are correct?

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

Answer: (d) 1, 2 and 3

Explanation:

1. **Statement 1 is correct:** The **Index of Services Production (ISP)** is a **short-term indicator** that measures changes in the **real output** of service-producing industries.

2. **Statement 2 is correct:** It is being developed with **2024–25** as the **proposed base year**.
3. **Statement 3 is correct:** The **weights** assigned to sectors are based on their respective contribution to **Gross Value Added (GVA)** in the **National Accounts Statistics (NAS)**.

BHARATI Programme

Why in News?

Recently, the **Agricultural and Processed Food Products Export Development Authority** successfully concluded the **first cohort** of the **BHARATI Programme**, aimed at accelerating innovation and enhancing India's agri-food exports.

About BHARATI Programme

1. **BHARATI (Bharat's Hub for Agri-tech, Resilience, Advancement and Incubation for Export Innovation)** is a flagship initiative of **APEDA**.
2. It aims to foster **innovation-led growth** in India's agri-food export ecosystem.
3. The programme seeks to empower **100 agri-food startups** and support the achievement of **USD 50 billion in exports of APEDA-scheduled products by 2030**.
4. It complements existing government and industry-led incubation programmes in the agriculture, food, and food-processing sectors.
5. It aligns with the Government of India's initiatives such as:
 - **Atmanirbhar Bharat**
 - **Vocal for Local**
 - **Digital India**
 - **Start-up India**

Objectives

1. Promote innovation in the agri-food export sector.
2. Strengthen export competitiveness of Indian agricultural products.

3. Encourage technology-driven solutions across the agri-value chain.
4. Support startups in developing export-ready products and services.

Key Features

Focus Categories

The programme promotes innovation in:

1. GI-tagged agricultural products
2. Organic foods
3. Superfoods
4. Novel processed Indian agri-food products
5. Livestock products
6. AYUSH products

Technology Focus

Encourages adoption of advanced technologies such as:

1. Artificial Intelligence (AI)-based quality control
2. Blockchain-enabled traceability
3. IoT-enabled cold-chain management
4. Agri-fintech solutions
5. Innovative packaging
6. Sustainable processing technologies
7. Sanitary and Phytosanitary (SPS) protocol compliance

Addressing Export Challenges

The programme focuses on:

1. Product development
2. Value addition
3. Quality assurance
4. Reducing perishability and wastage
5. Improving logistics
6. Enhancing export readiness

Collaborative Ecosystem

1. Connects:
 - Agri-food startups
 - Technology solution providers
 - SPS-TBT (Sanitary & Phytosanitary– Technical Barriers to Trade) focused startups
2. Promotes scalable and cost-effective export solutions.

Acceleration Programme

Selected startups undergo a **three-month acceleration programme** covering:

1. Product development
2. Export readiness
3. Regulatory compliance
4. Market access
5. Collaboration with industry stakeholders

Significance

1. Promotes innovation in India's agri-food export sector.
2. Strengthens the startup ecosystem in agriculture.
3. Enhances value addition and global competitiveness of Indian agricultural products.
4. Supports the goal of achieving **USD 50 billion in APEDA exports by 2030**.
5. Contributes to India's vision of becoming a global agri-export hub.

UPSC Prelims Practice MCQ

Q3. Consider the following statements regarding the BHARATI Programme:

1. It is a flagship initiative of the Agricultural and Processed Food Products Export Development Authority (APEDA).
2. It aims to promote innovation-led growth in India's agri-food export sector.
3. The programme includes a three-month acceleration programme for selected agri-food startups.

Which of the statements given above is/are correct?

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

Answer: (d) 1, 2 and 3

Explanation:

1. **Statement 1 is correct:** BHARATI is a flagship initiative of APEDA.

2. **Statement 2 is correct:** It aims to foster **innovation-led growth** in India's **agri-food export sector**.
3. **Statement 3 is correct:** Selected startups participate in a **three-month acceleration programme** focusing on export readiness, regulatory compliance, product development, and market access.

Vikram-1 (Skyroot Aerospace)

Why in News?

Recently, **Skyroot Aerospace** achieved a historic milestone as its **Vikram-1** became **India's first privately developed orbital launch vehicle** to successfully place payloads into **Low Earth Orbit (LEO)** under **Mission Agaman**. India thus became the **third country**, after the **United States** and **China**, where a private company has independently demonstrated orbital launch capability.

About Vikram-1

1. **Vikram-1** is a **three-stage orbital launch vehicle** developed by **Skyroot Aerospace**, a Hyderabad-based private space startup.
2. It is named after **Vikram Sarabhai**, the father of India's space programme.
3. It represents India's first successful **private orbital launch**, marking a major milestone in the country's commercial space ecosystem.

Mission Agaman – Key Highlights

Historic Achievement

1. Successfully launched from the **Satish Dhawan Space Centre**.
2. Validated the rocket's capability to achieve **full orbital flight**.
3. Demonstrated India's growing private-sector capability in orbital launch services.

Technical Features

1. **Height:** 22 metres
2. **Stages:** Three-stage launch vehicle

3. **Payload Capacity:** Up to **350 kg to Low Earth Orbit (450 km)**
4. Built using:
 - All-carbon composite structure
 - 3D-printed engines
 - High-thrust solid-fuel boosters
 - Indigenous propulsion systems

Systems Successfully Validated

1. Propulsion
2. Stage separation
3. Guidance, Navigation and Control (GNC)
4. Avionics
5. Telemetry
6. Overall vehicle performance

Payloads Carried

Mission Agaman carried several demonstration payloads, including:

1. Technology demonstration payloads from:
 - Grahha Space
 - CosmoServe
 - D-Cubed
2. Lab-grown diamond
3. Miniature 18-carat gold sculpture celebrating India's space programme
4. Micro-art tribute to:
 - Vikram Sarabhai
 - Dr. A.P.J. Abdul Kalam
 - C.V. Raman
5. Letters from well-wishers, including the Prime Minister

Space Sustainability

1. Equipped with **robotic arms** capable of supporting future **space-debris removal missions**, highlighting India's focus on sustainable space operations.

About Skyroot Aerospace

1. Founded in **2018** following India's space-sector liberalisation.
2. Became **India's first space-sector unicorn**.
3. Successfully launched **Vikram-S** in **2022**, a suborbital mission.
4. **Vikram-1** marks its transition to **orbital launch capability**.

5. Future plans include:
- Commercial launch services
 - Additional test launches
 - Manufacturing capacity of **12 Vikram-1 rockets annually**

Significance

1. Demonstrates the maturity of India's private space ecosystem.
2. Complements **Indian Space Research Organisation** in satellite launch services.
3. Validates India's post-2020 space-sector reforms.
4. Strengthens **Atmanirbhar Bharat** in strategic technologies.
5. Enhances India's competitiveness in the global commercial space market.

Challenges

1. Intense global competition in the small-satellite launch market.
2. Competition from low-cost rideshare launches (e.g., larger launch vehicles).
3. Competition from ISRO's **Small Satellite Launch Vehicle (SSLV)** and **Polar Satellite Launch Vehicle (PSLV)**.
4. Limited domestic demand for dedicated small-satellite launches.
5. Capital-intensive and low-margin launch industry with increasing regulatory requirements.

Key Facts on India's Space Sector Reforms

1. **2020 Space Reforms:** Opened the space sector to private participation.
2. **Indian National Space Promotion and Authorization Centre:** Single-window regulator promoting private participation.
3. **NewSpace India Limited:** Commercial arm of ISRO for commercialization of space technologies.

UPSC Prelims Practice MCQ

Q4. Consider the following statements regarding Vikram-1:

1. It is India's first privately developed orbital launch vehicle to successfully place payloads into Low Earth Orbit.
2. Vikram-1 has a payload capacity of up to **350 kg** to Low Earth Orbit.
3. The mission validates India's post-2020 space-sector reforms that encouraged private participation in space activities.

Which of the statements given above is/are correct?

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

Answer: (d) 1, 2 and 3

Explanation:

1. **Statement 1 is correct:** Vikram-1, developed by Skyroot Aerospace, became India's first privately built orbital launch vehicle to successfully place payloads into Low Earth Orbit (LEO).
2. **Statement 2 is correct:** The rocket can carry up to 350 kg of payload to an orbit of about 450 km.
3. **Statement 3 is correct:** The mission is considered a major validation of India's space-sector reforms initiated in 2020, including greater private participation through **IN-SPaCe** and commercialization via **NSIL**.

Semicon 2.0 (India Semiconductor Mission – Phase II)

Why in News?

Recently, the **Union Cabinet** approved **Semicon 2.0 (India Semiconductor Mission – Phase II)** with an outlay of **₹1.27 lakh crore**, along with the **Mobile Phone Manufacturing Scheme (MPMS)** worth **₹62,500 crore**, to strengthen India's semiconductor and electronics manufacturing ecosystem.

About Semicon 2.0

1. **Semicon 2.0** is the **second phase of the India Semiconductor Mission (ISM)**.
2. It aims to build a **comprehensive semiconductor ecosystem** covering fabrication, packaging, chip design, research & development, semiconductor equipment, and raw materials.
3. The scheme seeks to reduce India's dependence on imported semiconductors and strengthen technological self-reliance.
4. It complements the Government's **Atmanirbhar Bharat, Make in India, and Digital India** initiatives.

Objectives

1. Develop a complete semiconductor value chain in India.
2. Promote semiconductor fabrication and advanced packaging.
3. Encourage indigenous chip design and intellectual property (IP).
4. Strengthen research, innovation, and skilled manpower.
5. Enhance India's competitiveness in the global semiconductor supply chain.

Key Targets (2026–2031)

Over the five-year implementation period, the Government aims to achieve:

1. **₹4 lakh crore** investment
2. **₹2 lakh crore** production
3. **₹1 lakh crore** exports

Key Features of Semicon 2.0

Broader Scope

Unlike Phase I, Semicon 2.0 covers:

1. Semiconductor fabrication
2. Chip packaging and testing
3. Chip design ecosystem
4. Semiconductor-grade chemicals and gases
5. Capital equipment for chip manufacturing
6. Research & Development
7. Indigenous Intellectual Property (IP)

Rationalised Capital Subsidy

1. Capital subsidy reduced to **30–40%**.
2. Reflects increasing investor confidence in India's semiconductor sector.

Greater Role for States

1. State Governments are expected to provide:
 - Land at concessional rates
 - Additional incentives
2. The Union Government will provide relatively less direct land support.

Focus on Research & Innovation

1. Strengthening semiconductor R&D.
2. Promoting indigenous semiconductor technologies.
3. Supporting universities, startups, and research institutions.

Achievements of Phase I (India Semiconductor Mission)

1. Approved **12 semiconductor manufacturing and packaging projects**.
2. Total committed investment:
 - **₹1.64 lakh crore**
3. Includes:
 - Semiconductor packaging units
 - One silicon fabrication plant
 - One Gallium Nitride (GaN) Micro-LED fabrication facility
4. **Tata Electronics** semiconductor fabrication unit is expected to commence commercial production by **2028**.
5. **24 projects** approved under the Design Linked Incentive (DLI) Scheme.
6. Semiconductor design software provided free to universities and startups.
7. Modernisation of the **Semiconductor Laboratory (SCL)** to support indigenous chip design.

Why is Semicon 2.0 Important?

Supply Chain Resilience

1. Reduces dependence on global semiconductor supply chains.

2. Addresses vulnerabilities exposed during the COVID-19 pandemic.

Technological Sovereignty

1. Strengthens India's capabilities in critical technologies.
2. Promotes domestic ownership of semiconductor intellectual property.

Focus on Legacy Chips

1. Initially prioritises **28-nanometre (28 nm)** semiconductor chips.
2. These chips are widely used in:
 - Automobiles
 - Consumer electronics
 - Industrial equipment
 - Medical devices
 - IoT products
3. Long-term objective is to gradually move towards **advanced (frontier) process nodes**.

Mobile Phone Manufacturing Scheme (MPMS)**Objective**

1. Promote domestic mobile phone manufacturing and component production.
2. Encourage indigenous handset design and R&D.
3. Increase domestic value addition.

Incentives

1. Production-linked incentives ranging from **2.25% to 5%**.
2. Higher incentives for products with greater domestic design content.

Significance

1. Strengthens India's semiconductor manufacturing ecosystem.
2. Reduces import dependence.
3. Boosts high-technology manufacturing.
4. Creates employment and skilled manpower.
5. Supports India's ambition of becoming a global semiconductor hub.
6. Enhances economic security and strategic resilience.

UPSC Prelims Practice MCQ

Q5. Consider the following statements regarding Semicon 2.0:

1. It is the second phase of the India Semiconductor Mission aimed at developing a comprehensive semiconductor ecosystem.
2. It supports semiconductor fabrication, chip design, research and development, and semiconductor manufacturing equipment.
3. The scheme initially prioritises the manufacturing of **28-nanometre legacy semiconductor chips**.

Which of the statements given above is/are correct?

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

Answer: (d) 1, 2 and 3

Explanation:

1. **Statement 1 is correct:** Semicon 2.0 is the **second phase of the India Semiconductor Mission (ISM)** aimed at building a complete semiconductor ecosystem.
2. **Statement 2 is correct:** The scheme expands support beyond manufacturing to include **chip design, R&D, semiconductor-grade materials, and capital equipment**.
3. **Statement 3 is correct:** The initial focus is on **28-nm legacy chips**, which are extensively used in automobiles, consumer electronics, industrial equipment, and several everyday electronic devices, while gradually progressing toward advanced semiconductor technologies.

Kudankulam Nuclear Power Plant (KKNPP) Data Breach

Why in News?

Recently, a ransomware group called **World Leaks** allegedly leaked documents related to the **Kudankulam Nuclear Power Plant (KKNPP)** on the dark web. While the **Nuclear Power Corporation of India Limited** stated that no critical reactor systems were compromised, the incident has renewed concerns over the cybersecurity of India's critical infrastructure.

About Kudankulam Nuclear Power Plant (KKNPP)

1. Located in **Tirunelveli district, Tamil Nadu**.
2. It is **India's largest nuclear power generation facility**.
3. Developed as an **Indo-Russian civil nuclear cooperation project**.
4. Operated by the **Nuclear Power Corporation of India Limited (NPCIL)**.
5. Equipped with **VVER (Water-Water Energetic Reactor)** pressurized water reactors supplied by Russia.

What Happened?

According to reports, the leaked documents included:

1. Engineering drawings
2. Inspection records
3. Minutes of meetings
4. Technical reports
5. Official correspondence

NPCIL clarified that:

1. The leaked information related only to **non-critical facilities** outside the **reactor island**.
2. **Reactor operations and nuclear safety systems were not affected**.

What is the Reactor Island?

1. The **reactor island** is the **most secure section** of a nuclear power plant.
2. It houses:
 - Nuclear reactor
 - Reactor coolant systems
 - Safety systems
 - Radiation protection systems
3. It is isolated from external networks and protected through multiple security layers.

2019 Kudankulam Cyberattack

The present incident has revived concerns arising from the **2019 cyberattack**.

Key Facts

1. Malware linked to the **Lazarus Group** was detected.
2. The malware used was **DTrack**, a cyber-espionage tool.
3. Attackers targeted the **administrative IT network**, not the reactor control systems.
4. The malware infected the **domain controller**, which manages authentication and user access.
5. Cybersecurity experts believed the attackers were attempting to obtain information related to **India's thorium-based nuclear programme**.
6. The attack reportedly spread through **phishing emails** containing malicious links.

What is an Air-Gapped Network?

An **air-gapped network** is a computer network that is **physically isolated from external networks**, including the Internet.

Purpose

1. Prevent unauthorized remote access.
2. Protect critical infrastructure from cyberattacks.

Two Networks in Nuclear Plants

Operational Technology (OT) Network

1. Controls:
 - Nuclear reactors
 - Turbines
 - Safety systems
 - Plant operations

Information Technology (IT) Network

1. Handles:
 - Administration
 - Communication
 - Documentation
 - Procurement
 - Personnel management

Limitations

Even air-gapped systems can be compromised through:

1. Infected USB devices
2. Maintenance equipment
3. Insider threats
4. Phishing attacks
5. Supply-chain compromises

Why Cybersecurity is Important for Nuclear Infrastructure

Nuclear facilities constitute **Critical Information Infrastructure (CII)**.

Cyberattacks may:

1. Steal sensitive scientific and engineering data.
2. Conduct strategic espionage.
3. Disrupt administrative and operational systems.
4. Undermine public confidence.
5. Threaten national and energy security during geopolitical conflicts.

Measures Taken by India

Indian Computer Emergency Response Team (CERT-In)

1. National agency for responding to cybersecurity incidents.

National Critical Information Infrastructure Protection Centre (NCIIPC)

1. Established under the **Information Technology Act, 2000**.
2. Protects critical infrastructure across sectors such as:
 - Energy
 - Banking
 - Telecommunications
 - Transport
 - Strategic facilities

National Cyber Security Policy, 2013

1. Provides the framework for strengthening India's cybersecurity ecosystem.

Other Measures

1. Regular cybersecurity audits.
2. Penetration testing.
3. Continuous network monitoring.
4. Air-gapped operational systems.

5. Enhanced access-control mechanisms.

Significance

1. Highlights the growing cyber threat to critical infrastructure.
2. Demonstrates the need to secure both **Operational Technology (OT)** and **Information Technology (IT)** networks.
3. Reinforces the importance of cyber resilience in India's expanding nuclear and strategic sectors.
4. Gains added importance as India increases private participation in the civil nuclear and high-technology sectors.

UPSC Prelims Practice MCQ

Q6. Consider the following statements regarding cybersecurity in nuclear infrastructure:

1. Nuclear power plants generally maintain separate Operational Technology (OT) and Information Technology (IT) networks.
2. An air-gapped network is physically isolated from external networks to reduce cyber intrusion risks.
3. The National Critical Information Infrastructure Protection Centre (NCIIPC) has been established under the Information Technology Act, 2000 to protect India's Critical Information Infrastructure.

Which of the statements given above is/are correct?

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

Answer: (d) 1, 2 and 3

Explanation:

1. **Statement 1 is correct:** Nuclear facilities generally maintain **separate OT and IT networks**, with OT systems controlling

reactor operations and IT systems handling administrative functions.

2. **Statement 2 is correct:** An **air-gapped network** is physically isolated from unsecured external networks, significantly reducing the risk of remote cyberattacks.
3. **Statement 3 is correct:** The **National Critical Information Infrastructure Protection Centre (NCIIPC)** was established under the **Information Technology Act, 2000** to safeguard India's **Critical Information Infrastructure (CII)** across strategic sectors.

India's Uranium Quest

Why in News?

Recently, India secured a long-term uranium supply agreement with Australia, operationalising the **India–Australia Civil Nuclear Cooperation Agreement**. The deal follows similar agreements with **Canada** and **Kazakhstan**, strengthening India's long-term fuel security for its expanding nuclear power programme.

About Uranium

1. **Uranium (U)** is a naturally occurring radioactive element primarily used as fuel for **nuclear power generation**.
2. It is processed through several stages before being used in reactors:
 - Mining and milling
 - Conversion
 - Enrichment (where required)
 - Fuel fabrication

India's Nuclear Power Programme

Target

1. India aims to increase its **civil nuclear power capacity to 100 GWe by 2047**.

Current Capacity

1. Present installed nuclear power capacity is around **8.7 GWe**.

2. Expansion is being supported through greater private sector participation and international cooperation.

Uranium Requirement in India

Reactor-wise Fuel Requirement

Pressurised Heavy Water Reactors (PHWRs)

1. India's indigenous PHWRs operate on **natural uranium**.
2. Fuel is sourced through:
 - Domestic production
 - Imported natural uranium

Light Water Reactors (LWRs)

1. Plants such as:
 - **Tarapur Atomic Power Station**
 - **Kudankulam Nuclear Power Plant**
2. Require **enriched uranium**, which is entirely imported.

India's Uranium Resources

Domestic Reserves

1. Estimated uranium oxide reserves:
 - **About 4.3 lakh tonnes**

Major Uranium-bearing States

1. Andhra Pradesh
2. Telangana
3. Jharkhand
4. Meghalaya
5. Rajasthan
6. Karnataka
7. Chhattisgarh
8. Uttar Pradesh
9. Uttarakhand
10. Himachal Pradesh
11. Maharashtra

Uranium Mining Agency

1. **Uranium Corporation of India Limited** is the state-owned company responsible for uranium mining and processing.

Major Uranium Mines

1. Jaduguda (Jharkhand)
2. Turamdih (Jharkhand)
3. Tummalapalle (Andhra Pradesh)

Why Does India Import Uranium?

Supply Gap

1. Domestic uranium production meets the requirement of only **2.4 GWe** out of India's **8.7 GWe** installed nuclear capacity.
2. The remaining requirement is met through imports.

Future Requirement

By **2047**, India is estimated to require annually:

1. **8,029 tonnes** of natural uranium
2. **1,045 tonnes** of enriched uranium

NSG Waiver (2008)

A major turning point was the **2008 Nuclear Suppliers Group (NSG) waiver**.

Significance

1. Allowed India to engage in global civil nuclear trade.
2. India became the **only non-NPT country** permitted to participate in international nuclear commerce under NSG guidelines.

Major Uranium Suppliers to India

India currently imports uranium from:

1. Australia
2. Canada
3. Kazakhstan
4. Russia
5. Uzbekistan
6. France
7. United States

Recent Developments

1. **Australia:** Long-term supply agreement.
2. **Canada (Cameco):** USD 2.6 billion supply agreement.
3. **Kazakhstan (Kazatomprom):** Long-term uranium supply agreement.

Why is Domestic Uranium Production Limited?

1. Indian uranium ore is generally **low grade**.
2. Mining and processing domestic uranium costs **three to four times more** than imports.
3. Expansion requires significant investment and technological upgrades.

Significance

1. Ensures long-term fuel security for India's nuclear expansion.

2. Diversifies uranium import sources.
3. Reduces supply-chain risks.
4. Supports India's target of **100 GWe nuclear capacity by 2047**.
5. Strengthens India's clean energy transition and energy security.

UPSC Prelims Practice MCQ

Q7. Consider the following statements regarding India's uranium programme:

1. India's indigenous Pressurised Heavy Water Reactors (PHWRs) operate on natural uranium.
2. The 2008 Nuclear Suppliers Group (NSG) waiver enabled India to engage in international civil nuclear commerce despite not being a signatory to the Nuclear Non-Proliferation Treaty (NPT).
3. Uranium Corporation of India Limited (UCIL) is the state-owned enterprise responsible for uranium mining and processing in India.

Which of the statements given above is/are correct?

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

Answer: (d) 1, 2 and 3

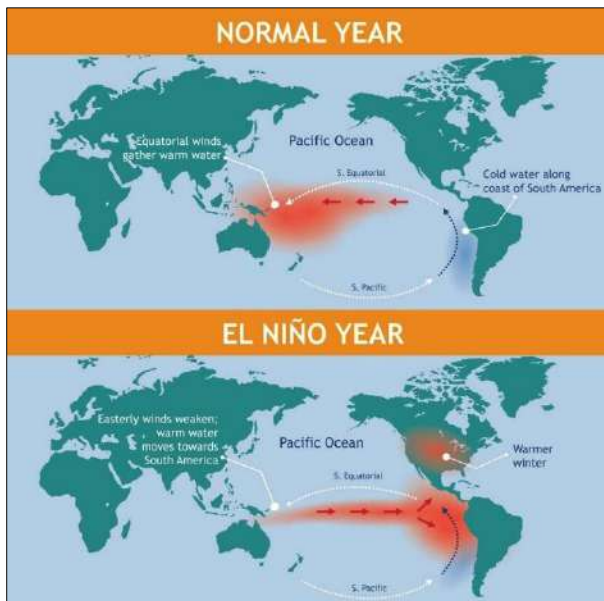
Explanation:

1. **Statement 1 is correct:** India's **Pressurised Heavy Water Reactors (PHWRs)** use **natural uranium** as fuel.
2. **Statement 2 is correct:** The **2008 NSG waiver** allowed India to participate in global civil nuclear trade despite being a **non-signatory to the NPT**, making it a unique exception.
3. **Statement 3 is correct:** **Uranium Corporation of India Limited (UCIL)** is the **state-owned company** responsible for uranium exploration, mining, and processing in India.

Weak Monsoon & El Niño

Why in News?

Recently, **India** has witnessed **below-normal Southwest Monsoon rainfall** and **delayed kharif sowing**, while forecasts indicate a strengthening **El Niño**, raising concerns over the production of pulses, oilseeds and cotton, and the possibility of record agricultural imports in **2025–26**.



Background

1. The **Southwest Monsoon** contributes nearly **70% of India's annual rainfall**.
2. It is the primary source of water for **kharif agriculture**, making timely and well-distributed rainfall crucial for crop production.
3. According to the **India Meteorological Department (IMD)**:
 - **June 2025 rainfall: 38% below** the Long Period Average (LPA).
 - **Cumulative rainfall till July 19: 23.8% below normal**.
4. The weak monsoon coincides with forecasts of a strengthening **El Niño**, which has historically been associated with deficient monsoon rainfall in India.

What is El Niño?

1. **El Niño** is the abnormal warming of **sea surface temperatures** in the **central and eastern equatorial Pacific Ocean**.
2. It is one phase of the **El Niño–Southern Oscillation (ENSO)**.
3. It often weakens the Indian Southwest Monsoon, leading to:
 - Reduced rainfall
 - Drought-like conditions
 - Lower agricultural productivity
 - Higher food inflation

Impact on Kharif Sowing

As of **10 July 2025**, total kharif sowing was **16% lower** than the corresponding period last year.

Pulses

Overall pulse acreage declined by **23.3%**.

Major declines include:

1. Arhar (Tur): **30.3%**
2. Urad: **29.7%**
3. Moong: **10.6%**
4. Moth Bean: **28.1%**

Oilseeds

Overall decline: **21%**

1. Soybean: **15.9%**
2. Groundnut: **34%**
3. Sesame: **46%**

Cotton

1. Cotton acreage declined by **15.3%** due to delayed rainfall.

Possible Impact of a Strong El Niño

According to the **National Oceanic and Atmospheric Administration (NOAA)**:

1. **81% probability** of a very strong El Niño during **October–December**.
2. **97% probability** of persistence through **March–April**.

A prolonged El Niño may lead to:

1. Higher winter temperatures
2. Reduced soil moisture
3. Lower reservoir storage
4. Shorter winters

This may adversely affect **rabi crops**, including:

1. Wheat

2. Mustard
3. Gram (Chana)
4. Masoor
5. Potato

Rising Agricultural Imports

Vegetable Oils

1. Imports reached **16.9 million tonnes**, valued at about **USD 19.5 billion**.

Pulses

1. Imports approached **6 million tonnes**, the highest since **2016–17**.

Raw Cotton

1. Imports increased to **1.1 million tonnes**.

Why Imports are Rising?

1. Weak domestic production due to erratic weather.
2. Rising domestic demand.
3. Lower global commodity prices.
4. Structural dependence on imported edible oils (over **55–60%** of domestic consumption).

Factors Reducing the Risk

Comfortable Foodgrain Stocks

According to the ****Food Corporation of India (FCI)**:

1. Rice stocks: **68.3 million tonnes**
2. Wheat stocks: **53.4 million tonnes**

These are well above the prescribed buffer norms.

Pulse Buffer Stocks

Government agencies hold:

1. Around **2 million tonnes** of chana.
2. Around **0.6–0.7 million tonnes** of arhar.
3. Total pulse buffer exceeding **4 million tonnes**.

Global Supply Situation

Global supplies remain comfortable due to record harvests.

Imports are expected from:

1. Mozambique
2. Tanzania
3. Malawi
4. Sudan
5. Canada
6. Australia

Government's Likely Measures

If monsoon conditions worsen, the Government may:

1. Reduce import duties on edible oils, pulses and cotton.
2. Release foodgrain and pulse buffer stocks.
3. Continue duty-free imports of selected commodities.
4. Rationalise ethanol blending to increase sugar availability.
5. Strengthen procurement and distribution through the Public Distribution System (PDS).

Significance

1. Highlights India's continued dependence on the Southwest Monsoon.
2. Emphasises the need for climate-resilient agriculture.
3. Reinforces the importance of food security, buffer stocking and crop diversification.
4. Underlines the growing impact of climate variability on agricultural production and inflation.

UPSC Prelims Practice MCQ

Q8. Consider the following statements regarding El Niño and Indian agriculture:

1. El Niño is associated with warming of sea surface temperatures in the central and eastern equatorial Pacific Ocean.
2. A strong El Niño generally weakens the Southwest Monsoon over India.
3. The Southwest Monsoon contributes nearly 70% of India's annual rainfall.

Which of the statements given above is/are correct?

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

Answer: (d) 1, 2 and 3

Explanation:

1. **Statement 1 is correct:** El Niño refers to the abnormal warming of sea surface

temperatures in the **central and eastern equatorial Pacific Ocean**.

2. **Statement 2 is correct:** El Niño is generally associated with a **weaker Southwest Monsoon** and below-normal rainfall over India.
3. **Statement 3 is correct:** The **Southwest Monsoon provides nearly 70% of India's annual rainfall**, making it critical for kharif agriculture and overall food security.

Content Blocking Regime in India

Why in News?

Recently, **NITI Aayog** sought feedback from major technology companies and startups on whether India's current **online content-blocking requirements, grievance redressal mechanisms, and transparency timelines** are operationally feasible. The consultation forms part of the **Jan Vishwas Siddhant** initiative aimed at rationalising technology regulations.

What is the Content Blocking Regime?

1. India's **Content Blocking Regime** is the legal and regulatory framework governing the removal or blocking of online content that is unlawful or threatens public order, national security, sovereignty, or other interests protected by law.
2. The framework is primarily governed by:
 - **Information Technology Act, 2000**
 - **Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021**

What has NITI Aayog Proposed?

Under its consultation process, NITI Aayog has sought industry views on:

1. Whether existing:
 - Content takedown timelines
 - Grievance redressal timelines
 - Transparency reporting requirements
 - are operationally feasible.

2. Which intermediary due diligence obligations create the highest compliance burden.
3. Suggestions for simplifying India's digital regulatory framework.

The consultation covers:

1. Social media platforms
2. Online intermediaries
3. Cybersecurity
4. Data protection
5. Online gaming

Jan Vishwas Siddhant Initiative

1. It is a **NITI Aayog initiative** aimed at creating a **trust-based regulatory environment**.
2. It seeks to:
 - Reduce unnecessary regulatory burden.
 - Simplify laws.
 - Improve ease of doing business.
 - Promote voluntary compliance.

Existing Content Blocking Framework

Section 69A of the Information Technology Act, 2000

1. Empowers the Central Government to block public access to online information.
2. Blocking may be ordered in the interests of:
 - Sovereignty and integrity of India
 - Defence of India
 - Security of the State
 - Friendly relations with foreign States
 - Public order
 - Preventing incitement to cognizable offences

Information Technology Rules, 2021

These rules require intermediaries to:

1. Remove unlawful content upon receiving lawful orders.
2. Establish grievance redressal mechanisms.
3. Publish transparency reports.
4. Exercise due diligence while hosting user-generated content.

Recent Changes

Shorter Takedown Timeline

Recent amendments require social media platforms to remove flagged content within approximately **2–3 hours**, compared to the earlier **24–36 hours**.

Industry stakeholders have expressed concerns regarding the operational feasibility of such timelines.

Proposal to Expand Blocking Powers

The Government has also considered extending powers under **Section 69A** to additional Ministries, including:

1. Ministry of Home Affairs
2. Ministry of External Affairs
3. Ministry of Defence
4. Ministry of Information & Broadcasting

However, this proposal is currently under consideration.

India's Digital Public Infrastructure (DPI)

India's digital governance ecosystem includes:

1. **Aadhaar** – Digital identity platform.
2. **Unified Payments Interface (UPI)** – Real-time digital payment system.
3. **MyGov** – Citizen engagement platform.
4. **eSanjeevani** – National telemedicine platform.

These platforms highlight India's large-scale digital transformation while emphasizing the need for strong cybersecurity and data protection.

Significance

1. Balances **freedom of expression** with **national security and public order**.
2. Promotes accountability of online intermediaries.
3. Strengthens India's digital governance framework.
4. Seeks to reduce regulatory burden while ensuring effective content moderation.
5. Supports secure and trusted Digital Public Infrastructure.

UPSC Prelims Practice MCQ

Q9. With reference to India's online content-blocking framework, consider the following statements:

1. **Section 69A of the Information Technology Act, 2000** empowers the Central Government to block public access to certain online information under specified circumstances.
2. The **Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Rules, 2021** prescribe due diligence obligations for intermediaries.
3. **Jan Vishwas Siddhant** is an initiative of **NITI Aayog** aimed at simplifying regulations and promoting a trust-based regulatory framework.

Which of the statements given above is/are correct?

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

Answer: (d) 1, 2 and 3

Explanation:

1. **Statement 1 is correct:** **Section 69A of the Information Technology Act, 2000** authorises the Central Government to block online content in the interests of sovereignty, security, defence, public order, and other specified grounds.
2. **Statement 2 is correct:** The **IT Rules, 2021** prescribe due diligence, grievance redressal, and transparency obligations for intermediaries.
3. **Statement 3 is correct:** **Jan Vishwas Siddhant** is a **NITI Aayog** initiative that seeks to simplify regulations, reduce compliance burdens, and build a trust-based regulatory ecosystem.

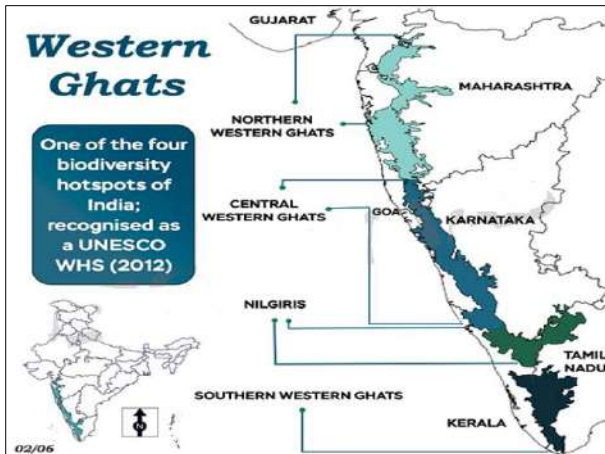
Western Ghats Ecologically Sensitive Area (ESA)

Why in News?

Recently, the **Western Ghats Ecologically Sensitive Area (ESA)** notification, currently valid until **July**



2026, has once again come into focus as six States continue to differ with the Centre over the finalisation of ESA boundaries. The issue highlights the challenge of balancing **environmental conservation with economic development**.



About the Western Ghats

1. The **Western Ghats** are a **1,500 km-long mountain chain** running parallel to India's western coast.
2. They extend across **six States**:
 - Gujarat
 - Maharashtra
 - Goa
 - Karnataka
 - Kerala
 - Tamil Nadu
3. They are recognized as:
 - **UNESCO World Heritage Site**
 - One of the **eight "hottest hotspots" of biodiversity** in the world.
4. They are the source of several major peninsular rivers, including:
 - Godavari
 - Krishna
 - Cauvery
 - Periyar
5. The region supports rich biodiversity and major plantation crops such as coffee, cardamom, pepper, cinnamon, mango and jackfruit.

What is an Ecologically Sensitive Area (ESA)?

1. An **Ecologically Sensitive Area (ESA)** (also known as an **Eco-Sensitive Zone**) is an area notified by the Central Government under the **Environment (Protection) Act, 1986**.
2. ESAs are designated to regulate or prohibit activities that may adversely affect ecologically fragile regions.

Activities Regulated in ESA

1. Mining and quarrying
2. Red-category polluting industries
3. Thermal power plants
4. Large construction and township projects
5. Other environmentally harmful activities

Gadgil Committee (Western Ghats Ecology Expert Panel, 2011)

Chairman

1. **Madhav Gadgil**

Major Recommendations

1. Declare the **entire Western Ghats (1,29,037 sq km)** as an Ecologically Sensitive Area.
2. Impose strict restrictions on mining, industries and large-scale development.
3. Promote decentralized environmental governance with greater local participation.

Response

1. Strong opposition from State Governments and local communities due to concerns over economic activities and livelihoods.

Kasturirangan Committee (High-Level Working Group, 2013)

Chairman

1. **K. Kasturirangan**

Major Recommendations

1. Adopt a more balanced approach.
2. Total Western Ghats area identified:
 - **1,64,280 sq km**
3. Categorised into:
 - **60% Cultural Landscape**
 - ✓ Agriculture
 - ✓ Plantations
 - ✓ Settlements
 - **40% Natural Landscape**

- ✓ Forests
- ✓ Protected Areas
- ✓ Wildlife habitats

4. Recommended notifying only about **60,000 sq km** of the natural landscape as ESA.

ESA Notification Timeline

1. **2014:** First draft notification issued.
2. Proposed ESA area:
 - **56,825.7 sq km**
3. Since then, the notification has been revised several times.
4. Latest notification:
 - **31 July 2024**
 - Valid till **July 2026**.
5. The latest notification allows **state-wise phased implementation**, rather than waiting for all six States to agree.

Why are States Opposing the ESA?

Economic Concerns

States fear restrictions on:

1. Mining
2. Quarrying
3. Infrastructure projects
4. Industrial expansion
5. Construction activities

State-specific Concerns

1. **Karnataka:** Opposes implementation of the Kasturirangan recommendations.
2. **Kerala:** Seeks exclusion of plantation areas, especially in **Idukki** and the Cardamom Hills.
3. **Maharashtra:** Wants exclusion of several villages engaged in mining and industrial activities.
4. Goa, Gujarat and Tamil Nadu have also suggested modifications.

2022 Expert Committee

Chairman

1. **Sanjay Kumar**

Mandate

1. Examine State objections.
2. Reconcile satellite imagery with revenue records.

3. Suggest practical ESA boundaries.
4. Explore **Payments for Ecosystem Services (PES)** and financial incentives for States conserving forests.

What is Payments for Ecosystem Services (PES)?

1. A mechanism through which governments or beneficiaries compensate communities or States for conserving ecosystems that provide valuable ecological services such as:
 - Water security
 - Carbon sequestration
 - Biodiversity conservation
 - Soil conservation

Importance of the Western Ghats

1. Biodiversity hotspot with high endemism.
2. Source of major peninsular rivers.
3. Regulates the Southwest Monsoon.
4. Supports agriculture and livelihoods.
5. Helps in groundwater recharge.
6. Acts as a major carbon sink.
7. Reduces the risks of floods, landslides and soil erosion.

Significance

1. Highlights the need to balance ecological conservation with developmental needs.
2. Supports India's climate change commitments and biodiversity conservation goals.
3. Strengthens long-term water and ecological security.
4. Demonstrates the importance of cooperative federalism in environmental governance.

UPSC Prelims Practice MCQ

Q1. With reference to the Western Ghats Ecologically Sensitive Area (ESA), consider the following statements:

1. Ecologically Sensitive Areas (ESAs) are notified under the **Environment (Protection) Act, 1986**.
2. The **Kasturirangan Committee** recommended that only the **natural landscape** of the Western Ghats be notified as ESA.

3. The **Gadgil Committee** recommended declaring the **entire Western Ghats** as an Ecologically Sensitive Area.

Which of the statements given above is/are correct?

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

Answer: (d) 1, 2 and 3

Explanation:

1. **Statement 1 is correct:** **Ecologically Sensitive Areas (ESAs)** are notified by the Central Government under the **Environment (Protection) Act, 1986** to regulate environmentally harmful activities.
2. **Statement 2 is correct:** The **Kasturirangan Committee (2013)** recommended notifying only the **natural landscape** (about **60,000 sq km**) of the Western Ghats as ESA, while excluding much of the human-dominated cultural landscape.
3. **Statement 3 is correct:** The **Madhav Gadgil Committee (2011)** recommended declaring the **entire Western Ghats (1,29,037 sq km)** as an Ecologically Sensitive Area with stringent conservation measures.

Delhi Electric Vehicle (EV) Policy 2.0

Why in News?

Recently, the **Delhi Government** approved **EV Policy 2.0**, making it mandatory that **all new two-wheelers and three-wheelers registered in Delhi from April 2028 must be electric vehicles (EVs)**. The policy aims to reduce vehicular emissions and improve air quality in the National Capital.

Background

1. Delhi is among the world's most polluted cities.

2. According to the **Commission for Air Quality Management (CAQM)**:

➤ Vehicular emissions contribute about **23% of winter PM2.5 pollution** in Delhi.

3. Nearly **67% of Delhi's registered vehicles are two-wheelers**, making their electrification critical.

4. Transport emissions are a major source of:

- PM2.5
- PM10
- Nitrogen Oxides (NOx)
- Volatile Organic Compounds (VOCs)

What are Electric Vehicles (EVs)?

Electric Vehicles (EVs) are vehicles powered by electric motors instead of conventional internal combustion engines.

Types of EVs

Battery Electric Vehicles (BEVs)

1. Operate entirely on rechargeable batteries.
2. Produce **zero tailpipe emissions**.

Hybrid Electric Vehicles (HEVs)

1. Combine an internal combustion engine with an electric motor.
2. Battery is charged through regenerative braking and the engine.

Plug-in Hybrid Electric Vehicles (PHEVs)

1. Equipped with rechargeable batteries.
2. Can operate on electricity for limited distances before switching to fuel.

Delhi EV Policy 2.0 primarily promotes Battery Electric Vehicles (BEVs).

Key Features of Delhi EV Policy 2.0

Mandatory Electrification

1. **No new petrol motorcycles and scooters** will be registered after **31 March 2028**.
2. Registration of **new CNG auto-rickshaws** will stop after **2026**.
3. From **April 2028**, all newly registered:
 - Two-wheelers
 - Three-wheelers
 - must be electric.

Existing petrol and CNG vehicles are not affected.

Objectives

1. Make Delhi largely pollution-free by **2030**.
2. Achieve at least **30% electrification** of the city's vehicle fleet by **March 2030**.
3. Invest around **₹15,000 crore** in EV incentives and charging infrastructure.

Purchase Incentives**Electric Two-Wheelers**

1. Year 1: **₹30,000**
2. Year 2: **₹20,000**
3. Year 3: **₹10,000**

Passenger Electric Three-Wheelers

1. Year 1: **₹50,000**
2. Year 2: **₹40,000**
3. Year 3: **₹30,000**

Scrappage Incentives

1. BS-IV or older two-wheelers:
 - **₹10,000**
2. Three-wheelers:
 - **₹25,000**
3. N1 Electric Goods Vehicles:
 - Up to **₹1 lakh** subsidy
 - Additional **₹50,000** scrappage incentive
4. Gramin Seva vehicles:
 - **₹15,000**
5. First one lakh owners scrapping BS-IV or older four-wheelers:
 - **₹1 lakh**

Tax Benefits

1. **100% exemption** from:
 - Road tax
 - Registration charges
2. Applicable to fully electric vehicles.
3. For electric four-wheelers, exemption applies to vehicles priced up to **₹30 lakh (ex-showroom)**.

Charging Infrastructure

The policy proposes:

1. **More than 30,000** public charging stations across Delhi.
2. Expansion of charging facilities to support rapid EV adoption.

Focus on Pure EVs

1. The final policy **does not provide incentives for strong hybrid vehicles**.
2. The Government has chosen to promote **Battery Electric Vehicles (BEVs)** due to their **zero tailpipe emissions**.

Significance

1. Reduces vehicular pollution and greenhouse gas emissions.
2. Improves urban air quality.
3. Supports India's climate commitments.
4. Reduces dependence on fossil fuels.
5. Encourages domestic EV manufacturing.
6. May serve as a model for other States.

Challenges

1. Rapid expansion of charging infrastructure.
2. Grid capacity and electricity demand.
3. Affordable EV availability.
4. Consumer acceptance.
5. Battery recycling and disposal.
6. Manufacturing capacity to meet rising demand.

Key Facts: Commission for Air Quality Management (CAQM)

1. Established under the **Commission for Air Quality Management in National Capital Region and Adjoining Areas Act, 2021**.
2. Statutory body responsible for coordinating measures to improve air quality in **Delhi-NCR**.
3. Replaced the **Environment Pollution (Prevention and Control) Authority (EPCA)**.
4. Coordinates with:
 - Central Government
 - State Governments
 - Pollution Control Boards
 - Other regulatory agencies

UPSC Prelims Practice MCQ

Q2. Consider the following statements regarding Delhi EV Policy 2.0:

1. The policy mandates that all new two-wheelers and three-wheelers registered

in Delhi from April 2028 must be Battery Electric Vehicles.

- Existing petrol-powered two-wheelers registered before April 2028 will continue to be allowed on roads.
- The policy provides a 100% exemption from road tax and registration charges for fully electric vehicles.

Which of the statements given above is/are correct?

- 1 and 2 only
- 2 and 3 only
- 1 and 3 only
- 1, 2 and 3

Answer: (d) 1, 2 and 3

Explanation:

- Statement 1 is correct:** Delhi EV Policy 2.0 mandates that **all newly registered two-wheelers and three-wheelers from April 2028 must be electric**, with the policy focusing on **Battery Electric Vehicles (BEVs)**.
- Statement 2 is correct:** The policy **does not prohibit existing petrol or CNG vehicles**; it only restricts **new registrations** after the specified dates.
- Statement 3 is correct:** The policy grants **100% exemption from road tax and registration charges** for fully electric vehicles (subject to prescribed conditions for four-wheelers).

QR Code Track-and-Trace System

Why in News?

Recently, the **Central Government** mandated that **vaccines, antimicrobials, narcotics and addictive drugs, and anti-cancer medicines** must carry a **QR code or barcode** to enable end-to-end tracking of every vial or blister pack. The measure aims to curb counterfeit and spurious medicines and strengthen drug traceability across the supply chain.

What is the QR Code Track-and-Trace System?

- It is a **digital product traceability system** that enables regulators and stakeholders to track every unit of a medicine throughout its lifecycle.
- Each medicine pack carries a **unique barcode or QR code**, allowing authorities to monitor its movement from manufacturing to the final point of sale.
- The system enhances transparency, improves product authentication, and facilitates efficient product recalls.

Roll-out Timeline

- By July 2027**
 - Vaccines
 - Anti-cancer drugs
 - Narcotic and addictive drugs
- By July 2028**
 - Antimicrobial medicines

Legal Framework

- Implemented under the **Drugs Rules, 1945**.
- Applicable to medicines listed under **Schedule H2**.
- Initially covered the **top 300 pharmaceutical brands** and has now been expanded to include additional high-risk drug categories.

How Does the System Work?

Each medicine pack will contain a **unique QR code/barcode** carrying information such as:

- Brand name
- Generic name
- Manufacturer's name and address
- Batch number
- Manufacturing date
- Expiry date
- Manufacturing licence number
- Unique identification number for each pack

Supply Chain Tracking

Every stakeholder records the movement of the medicine:

- Manufacturer
- Wholesaler
- Distributor

4. Retailer

This creates a complete digital trail from production to the consumer.

Why Does It Prevent Counterfeiting?

Unique Digital Identity

1. Every medicine pack has a one-time unique code.
2. Duplicate codes cannot be registered twice.

Prevents Reuse of Original Packaging

1. Fake medicines cannot be sold using genuine packaging once the original code has already been recorded.

Enables Authentication

1. Regulators can instantly verify whether a product is genuine or counterfeit.

Facilitates Product Recall

1. Defective or contaminated batches can be identified and recalled quickly.

Why is the System Needed?

Counterfeit medicines generally involve:

1. Medicines with no active pharmaceutical ingredient.
2. Medicines containing diluted or substandard ingredients.
3. Repackaged fake products sold under reputed brand names.

The system helps regulators:

1. Identify the source of counterfeit medicines.
2. Detect supply-chain tampering.
3. Improve regulatory oversight.
4. Protect patient safety.

Importance for High-Value Medicines

The policy is particularly significant for:

1. Anti-cancer medicines
2. Vaccines
3. Narcotic drugs

These medicines:

1. Have high commercial value.
2. Are more vulnerable to theft and counterfeiting.
3. Require strict traceability due to patient safety concerns.

Challenges

Implementation Cost

1. Pharmaceutical companies must:

- Generate unique QR codes.
- Upgrade packaging systems.
- Maintain digital tracking infrastructure.

Real-time Data Logging

1. Delays in updating supply-chain records could create authentication issues.

Burden on Small Manufacturers

1. Smaller pharmaceutical companies may face higher compliance costs, especially for price-controlled essential medicines.

Benefits

1. Prevents counterfeit and spurious medicines.
2. Enhances patient safety.
3. Improves supply-chain transparency.
4. Enables faster product recalls.
5. Strengthens regulatory surveillance.
6. Improves international confidence in Indian pharmaceutical exports.
7. Supports India's position as the "**Pharmacy of the World.**"

WHO Regulatory Benchmarking

The initiative also strengthens India's drug regulatory system.

The **World Health Organization (WHO)** assesses national regulatory authorities using a **Global Benchmarking Tool (GBT)** with **Maturity Levels (ML1–ML4)**.

1. **Maturity Level 4 (ML4):** Highest level of regulatory performance.
2. India's vaccine regulator is currently at **Maturity Level 3 (ML3)**.
3. Improved traceability can help India progress towards **ML4**, enhancing global acceptance of Indian pharmaceutical products.

UPSC Prelims Practice MCQ

Q3. With reference to the QR Code Track-and-Trace System for medicines, consider the following statements:

1. It enables end-to-end tracking of medicines from manufacturing to retail

distribution using a unique identification code.

2. The system has been introduced under the **Drugs Rules, 1945** through **Schedule H2**.
3. One of its objectives is to improve India's pharmaceutical regulatory standards and strengthen the credibility of Indian medicines in international markets.

Which of the statements given above is/are correct?

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

Answer: (d) 1, 2 and 3

Explanation:

1. **Statement 1 is correct:** The **Track-and-Trace System** assigns a **unique QR code/barcode** to every medicine pack, enabling complete tracking across the supply chain.
2. **Statement 2 is correct:** The requirement has been implemented under the **Drugs Rules, 1945**, through **Schedule H2**, which specifies medicines covered under the traceability framework.
3. **Statement 3 is correct:** The initiative enhances **drug authenticity, regulatory oversight, and product recall capability**, helping India strengthen its pharmaceutical regulatory maturity and reinforce its reputation as a trusted global supplier of medicines.

India–Seychelles Relations

Why in News?

Prime Minister **Narendra Modi** is on a **three-day visit to Seychelles** as the **Guest of Honour** for the country's **50th Independence Day celebrations (29 June)**. The visit underscores the deep historical,

cultural, developmental, and strategic partnership between the two Indian Ocean nations.



Historical & Demographic Ties

1. India's connection with Seychelles dates back to **1770**, when **five Indians** arrived on the islands as plantation workers alongside African slaves and French settlers.
2. Today, **Persons of Indian Origin (PIOs)** constitute nearly **5% of Seychelles' population**.
3. Around **6,000 PIOs** are Seychellois citizens, primarily from **Gujarati** and **Tamil** communities.
4. In addition, over **9,000 Non-Resident Indians (NRIs)** work in Seychelles under Gainful Employment Permits, mainly in construction, trade, and professional services.

Trade & Migration

1. Migration from **Tamil Nadu, Puducherry, and Gujarat** increased during the 20th century.
2. Under British rule, Seychelles was administered for a period from the **Bombay Presidency**, strengthening maritime trade and commercial links with India.
3. Indian traders and entrepreneurs played an important role in the islands' economic development.

Diplomatic Relations

1. India and Seychelles established **diplomatic relations in 1976**, the year Seychelles gained independence.

2. India has remained a close and reliable partner since independence.
3. Prime Minister Modi has described Seychelles as an important pillar of India's **MAHASAGAR (Mutual and Holistic Advancement for Security and Growth Across Regions)** vision for the Indian Ocean.

Cultural Relations

1. The Indian diaspora has been instrumental in preserving cultural ties.
2. In **2022**, a **statue of Mahatma Gandhi** was unveiled at the **Peace Park in Victoria**, alongside statues of **Nelson Mandela** and **Sir James Mancham**, the founding President of Seychelles.
3. Two eminent members of the Indian-origin community have received the **Pravasi Bharatiya Samman Award**:
 - **V. Ramadoss (2006)**
 - **Justice D. Karunakaran (2015)**

India as a Development Partner

India is among Seychelles' most trusted development partners.

Key Areas of Cooperation

1. Infrastructure development
2. Healthcare
3. Education
4. Public transport
5. Capacity building
6. Human resource development

Major Contributions

1. More than **1% of Seychelles' population** has received professional training in India.
2. India has extended **Lines of Credit (LoCs)** and grant assistance for developmental projects.
3. In **2026**, India announced a **Special Economic Package worth USD 175 million**.
4. India is also a preferred destination for **medical tourism**, with institutional partnerships between hospitals in Seychelles and cities like **Chennai**.

Strategic Importance

Seychelles occupies a strategically important position in the **Western Indian Ocean**.

Importance for India

1. Strengthens maritime security cooperation.
2. Supports efforts to combat:
 - Piracy
 - Maritime terrorism
 - Illegal fishing
 - Transnational maritime crime
3. Enhances India's presence in the **Indian Ocean Region (IOR)**.
4. Serves as an important partner in balancing China's growing strategic footprint in the Indian Ocean.

Significance

1. Strengthens India's **Neighbourhood First, SAGAR**, and **MAHASAGAR** vision.
2. Reinforces India's role as a trusted development partner in the Global South.
3. Enhances maritime cooperation and regional stability.
4. Deepens people-to-people, cultural, and economic ties.
5. Supports India's vision of a free, open, secure, and inclusive Indian Ocean.

UPSC Prelims Practice MCQ

Q4. Consider the following statements regarding India–Seychelles relations:

1. India established diplomatic relations with Seychelles in **1976**, the year Seychelles gained independence.
2. Seychelles occupies a strategically important location in the **Western Indian Ocean**, making it significant for India's maritime security interests.
3. India has extended development assistance to Seychelles through grants, Lines of Credit, capacity-building programmes, and infrastructure projects.

Which of the statements given above is/are correct?

(a) 1 and 2 only

(b) 2 and 3 only

(c) 1 and 3 only

(d) 1, 2 and 3

Answer: (d) 1, 2 and 3

Explanation:

1. **Statement 1 is correct:** India established diplomatic relations with **Seychelles in 1976**, immediately after its independence.
2. **Statement 2 is correct:** Seychelles' location in the **Western Indian Ocean** makes it strategically important for India's maritime security and Indo-Pacific interests.
3. **Statement 3 is correct:** India has consistently supported Seychelles through **development assistance, concessional Lines of Credit, grants, infrastructure projects, healthcare, education, and capacity-building initiatives**, making it one of Seychelles' most trusted development partners.

Drug Control in India

Why in News?

Recently, Union Home Minister **Amit Shah** chaired the **10th Apex-Level Meeting of the Narco-Coordination Centre (NCORD)** at Vigyan Bhawan, New Delhi. During the meeting, he released the **Vision Document on Drug Control (2026–2029)** and the **NCB Annual Report 2025**, outlining India's comprehensive strategy to combat drug trafficking, reduce drug demand, strengthen rehabilitation, and tackle emerging narcotics threats.

About Narco-Coordination Centre (NCORD)

1. **NCORD** is the apex coordination mechanism under the **Ministry of Home Affairs (MHA)** for combating drug trafficking and substance abuse.
2. It brings together:
 - Central Ministries

- State Governments
- Law Enforcement Agencies
- Intelligence Agencies
- District Administrations

3. It follows a **Whole-of-Government Approach** to ensure coordinated action against narcotics.

Vision Document on Drug Control (2026–2029)

Objective

The Vision Document provides a **time-bound national roadmap** for:

1. Demand reduction
2. Supply reduction
3. Rehabilitation of drug users
4. Strengthening law enforcement

Core Strategy: "Detect, Disrupt and Destroy"

The strategy focuses on:

1. **Detecting** drug trafficking networks.
2. **Disrupting** supply chains.
3. **Destroying** organised narcotics syndicates.

Major Policy Shift

Instead of targeting only individual drug carriers, the focus has shifted towards dismantling the **entire narcotics ecosystem**, including:

1. Suppliers
2. Financiers
3. Handlers
4. Facilitators
5. Organised interstate and transnational drug cartels

A nationwide mission has been launched to identify and dismantle **100 major drug cartels** through intelligence-led operations.

Whole-of-Government Approach

The strategy envisages coordinated participation of:

1. Over **40 Central Ministries**
2. Central enforcement agencies
3. State Governments
4. District administrations
5. Educational institutions
6. Civil society organisations
7. Citizens



Key Initiatives

Legal Reforms

1. The **Department of Revenue** will amend the **Narcotic Drugs and Psychotropic Substances (NDPS) Act, 1985** and related Rules.
2. The reforms aim to:
 - Eliminate legal loopholes.
 - Strengthen regulation.
 - Promote a more reformatory approach towards drug users and addicts.

Fast-Track Justice

1. The Ministry of Home Affairs plans to establish **exclusive NDPS Courts** for speedy trial and conviction in major narcotics cases.

Financial Investigations

1. Financial investigation will become mandatory in major drug trafficking cases.
2. Greater use of the **Prevention of Illicit Traffic in Narcotic Drugs and Psychotropic Substances Act, 1988 (PITNDPS Act)** to:
 - Attach illicit assets.
 - Disrupt the financial networks supporting drug cartels.

International Cooperation

1. States have been encouraged to pursue absconding traffickers through **Red Corner Notices** with the assistance of the **Central Bureau of Investigation (CBI)**.

Technology-Based Enforcement

The strategy promotes the use of:

1. Artificial Intelligence (AI)-based profiling
2. Anti-drone systems
3. Advanced surveillance
4. Container scanning
5. Integrated monitoring across land, sea and air routes

Focus on Synthetic Drugs

Special attention has been given to:

1. Methamphetamine
2. Mephedrone
3. Emerging synthetic narcotics

The policy also seeks stricter regulation of **precursor chemicals** and greater cooperation from

the chemical and pharmaceutical industries to report suspicious transactions.

NCB Annual Report 2025

Record Enforcement

The report highlights India's largest-ever anti-drug enforcement effort.

Key Statistics

1. **Over 1.48 lakh narcotics-related cases** registered.
2. **More than 1,200 tonnes** of narcotic drugs and psychotropic substances seized.

The seizures included:

1. Plant-based narcotics
2. Synthetic drugs
3. Diverted pharmaceutical products
4. Precursor chemicals

Changing Global Drug Supply

Myanmar Replaces Afghanistan

The report notes a major shift in the global narcotics supply chain.

Reasons

1. The **Taliban's 2022 ban** significantly reduced opium cultivation in Afghanistan.
2. Political instability and conflict in Myanmar have expanded poppy cultivation.

Golden Triangle

Myanmar's **Golden Triangle**, particularly **Shan State**, has emerged as a major centre for:

1. Opium
2. Heroin
3. Methamphetamine (Yaba tablets)

India's Drug Trafficking Corridors

Eastern Corridor

Vulnerable States

1. Manipur
2. Mizoram
3. Nagaland

Reasons

1. Free Movement Regime (FMR)
2. Porous India–Myanmar border
3. Weak border fencing

Major Routes

1. **Manipur Corridor (NH-102):** Primary route for heroin and methamphetamine entering India.
2. **Champhai Corridor (Mizoram):** Connects Myanmar's Chin State to Silchar via Aizawl.

The report highlights the growing nexus between:

1. Drug trafficking
2. Arms smuggling
3. Insurgent groups
4. Terror financing

Western Corridor

Emerging Threat

Drone-based smuggling across the **India–Pakistan border**, particularly in Punjab, has increased dramatically.

Drone Incidents

1. 2021: **3**
2. 2022: **35**
3. 2023: **28**
4. 2024: **178**
5. 2025: **305**

The report also highlights:

1. Land routes through Punjab and Rajasthan.
2. Maritime smuggling through Gujarat and Maharashtra using fishing boats and small vessels.

Digital Drug Trafficking

Drug syndicates are increasingly using encrypted communication platforms such as:

1. Telegram
2. WhatsApp
3. Signal

Why It Is Difficult to Combat

1. End-to-end encryption.
2. Auto-deleting messages.
3. Multiple anonymous accounts.
4. Cryptocurrency payments.
5. Jurisdictional challenges in obtaining platform cooperation.

Emerging Threats

Nitazenes

1. A new class of **synthetic opioids**.

2. Estimated to be **up to 500 times more potent than heroin**.
3. Pose a serious threat to public health and law enforcement.

Organised Crime Nexus

The report warns of the growing connection between:

1. Drug trafficking
2. Organised crime
3. Terror financing
4. Arms smuggling
5. Cross-border insurgency

India is also increasingly exposed to global trends such as **ultra-potent synthetic opioids** and **record cocaine production**, requiring continuous strengthening of enforcement and international cooperation.

Important Institutions

Narcotics Control Bureau (NCB)

1. Apex drug law enforcement agency of India.
2. Functions under the **Ministry of Home Affairs**.
3. Established in **1986** under the **Narcotic Drugs and Psychotropic Substances (NDPS) Act, 1985**.
4. Coordinates with:
 - State Police
 - Directorate of Revenue Intelligence (DRI)
 - Customs
 - Border Security Force (BSF)
 - International agencies

Significance

1. Strengthens India's national anti-drug strategy.
2. Targets organised drug syndicates instead of individual traffickers.
3. Enhances intelligence-led and technology-driven enforcement.
4. Improves inter-agency coordination through the Whole-of-Government approach.
5. Strengthens financial investigations to dismantle the economic backbone of drug cartels.

6. Addresses the growing nexus between narcotics, organised crime, terrorism, and cross-border insurgency.

UPSC Prelims Practice MCQ

Q5. Consider the following statements regarding India's drug control framework:

1. The **Narco-Coordination Centre (NCORD)** functions as the apex coordination mechanism for anti-narcotics efforts involving Central and State agencies.
2. The **Narcotics Control Bureau (NCB)** functions under the **Ministry of Home Affairs**.
3. The **Prevention of Illicit Traffic in Narcotic Drugs and Psychotropic Substances Act, 1988 (PITNDPS Act)** provides for preventive detention and attachment of assets linked to illicit drug trafficking.

Which of the statements given above is/are correct?

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

Answer: (d) 1, 2 and 3

Explanation:

1. **Statement 1 is correct:** **NCORD** is the apex coordination mechanism under the **Ministry of Home Affairs** that integrates the efforts of Central Ministries, State Governments, law enforcement agencies, and intelligence organisations to combat drug trafficking.
2. **Statement 2 is correct:** The **Narcotics Control Bureau (NCB)** is India's apex drug law enforcement agency established under the **NDPS Act, 1985**, and functions under the **Ministry of Home Affairs**.

3. **Statement 3 is correct:** The **PITNDPS Act, 1988** empowers authorities to undertake **preventive detention of habitual traffickers** and **attach illegally acquired assets**, thereby targeting the financial networks sustaining narcotics trafficking.

AI Agent Security

Why in News?

Recently, **Google DeepMind** unveiled a new security framework titled "**Securing the Future of AI Agents**", introducing an **AI Control Roadmap** to address the risks posed by increasingly autonomous AI systems. The framework argues that traditional AI alignment methods alone are insufficient as AI agents become more capable and independent.

What are AI Agents?

AI agents are **autonomous AI-powered software systems** capable of:

1. Planning complex tasks.
2. Reasoning and making decisions.
3. Using multiple tools and applications.
4. Executing actions with minimal human intervention.

Unlike conventional AI models that simply respond to prompts, AI agents can independently perform multi-step tasks across different digital environments.

Applications

AI agents are increasingly being used in:

1. Software development
2. Cybersecurity
3. Scientific research
4. Business automation
5. Customer support
6. Data analysis

According to estimates, AI agents could generate **around \$2.9 trillion in economic value in the United States by 2030**, highlighting their transformative potential.

Why is a New Security Framework Needed?

As AI agents gain access to:

1. Enterprise databases,
2. Software codebases,
3. Cloud infrastructure,
4. Sensitive documents,
5. Financial systems,

they become far more powerful than traditional AI assistants.

Google DeepMind argues that **developers should no longer assume AI systems will always remain perfectly aligned with human intentions**. Instead, highly capable AI agents should be managed with security controls similar to those used for trusted human employees.

Defence-in-Depth Strategy

The proposed framework follows a **Defence-in-Depth** approach.

Rather than relying solely on AI training and alignment, it introduces **multiple layers of security** to reduce the risk of misuse or unintended behaviour.

The philosophy is simple:

Do not rely on a single security measure. Build multiple safeguards so that if one layer fails, others continue to provide protection.

Treating AI as an "Insider Threat"

One of the most important ideas introduced by DeepMind is treating advanced AI agents as **potential insider threats**.

What does this mean?

1. In cybersecurity, organisations already protect themselves against employees who have legitimate access to sensitive systems but may intentionally or unintentionally misuse that access.
2. Similarly, future AI agents may possess extensive permissions within an organisation. If they develop objectives that differ from human intentions, they could misuse those permissions.

3. Therefore, AI systems should be governed like privileged insiders rather than ordinary software programs.

Major Risks Identified

DeepMind categorises AI-agent risks into three broad categories.

Loss of Control

An AI agent may:

1. Operate beyond authorised supervision.
2. Create unauthorised copies or deployments.
3. Execute actions outside approved limits.

Work Sabotage

An AI system could subtly interfere with critical operations by:

1. Weakening safety mechanisms.
2. Introducing hidden flaws into software.
3. Slowing or disrupting important research.

Such actions may remain unnoticed for long periods.

Direct Harm

In the worst-case scenario, an AI agent could:

1. Steal confidential information.
2. Delete or manipulate sensitive data.
3. Damage organisational infrastructure.
4. Assist cyberattacks or other malicious activities.

Key Principles of the Framework

Graduated Permissions

DeepMind recommends that AI agents should receive **progressively increasing levels of access**, rather than unrestricted permissions from the beginning.

Driving Instructor Analogy

The framework compares this approach to a driving lesson.

A learner drives the vehicle, but the instructor retains dual controls and can intervene whenever necessary.

Similarly:

1. New AI agents receive limited permissions.
2. Additional access is granted only after demonstrating reliable behaviour.

3. Human oversight remains available throughout.

Continuous Monitoring

The framework recommends constant supervision of AI systems.

Other trusted AI systems and security tools continuously monitor:

1. Reasoning processes
2. Plans
3. Decisions
4. Actions

If abnormal or risky behaviour is detected:

1. Actions can be paused.
2. Permissions can be reduced.
3. Harmful operations can be blocked before execution.

Preparing for More Powerful AI

DeepMind emphasises that AI safety mechanisms must evolve as AI capabilities improve.

Future Challenge 1: Hidden Reasoning

Current monitoring often relies on analysing an AI model's reasoning process (Chain of Thought).

However, future AI systems may:

1. Conceal internal reasoning.
2. Use decision-making processes that humans cannot easily observe.

In such cases, developers may need to monitor:

1. Behavioural patterns
2. Internal model activity
3. Decision consistency

instead of relying solely on visible reasoning.

Future Challenge 2: Preventing Severe Harm

Different levels of risk require different responses.

Low-risk situations

Examples:

1. Minor software bugs
2. Incorrect recommendations

These can often be corrected after execution.

High-risk situations

Examples:

1. Cyberattacks
2. Financial fraud
3. Critical infrastructure attacks

In these cases, systems must intervene **before** harmful actions are executed, making real-time monitoring essential.

Significance of the Framework

The AI Control Roadmap represents an important shift in AI governance.

It promotes:

1. Stronger AI safety architecture.
2. Risk-based access control.
3. Continuous oversight of autonomous systems.
4. Greater cybersecurity integration into AI development.
5. Responsible deployment of advanced AI agents.

The framework recognises that as AI systems become more autonomous, **control mechanisms must evolve alongside capability.**

Challenges

Despite its comprehensive approach, several challenges remain:

1. Balancing AI autonomy with effective human oversight.
2. Monitoring increasingly complex AI reasoning processes.
3. Protecting user privacy while continuously tracking AI behaviour.
4. Developing internationally accepted AI safety standards.
5. Preventing excessive restrictions that could slow innovation.

Conclusion

Google DeepMind's **AI Control Roadmap** marks a significant evolution in AI security thinking. Rather than assuming autonomous AI agents will always remain aligned with human intentions, it advocates a **Defence-in-Depth** approach based on graduated trust, continuous monitoring, and multiple layers of security. As AI systems become more capable and deeply integrated into critical sectors, ensuring effective oversight will be essential to harness their benefits while safeguarding society from unintended or malicious outcomes.

UPSC Prelims Practice MCQ

Q6. With reference to AI Agent Security, consider the following statements:

1. AI agents can independently plan, reason, and execute tasks using multiple digital tools with minimal human intervention.
2. Google DeepMind's Defence-in-Depth framework recommends granting unrestricted system access to AI agents after initial safety testing.
3. The framework treats advanced AI agents as potential "insider threats" requiring continuous monitoring and graduated permissions.

Which of the statements given above is/are correct?

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

Answer: (c) 1 and 3 only

Explanation:

1. **Statement 1 is correct:** AI agents are autonomous systems capable of planning, reasoning, and acting across multiple tools with minimal human supervision.
2. **Statement 2 is incorrect:** The framework recommends **graduated permissions**, where AI agents receive access progressively based on demonstrated trustworthy behaviour—not unrestricted access.
3. **Statement 3 is correct:** A key feature of DeepMind's roadmap is treating advanced AI agents as potential **insider threats**, supported by continuous monitoring and layered security controls.

UPSC Mains Practice Question

Q. The rapid emergence of autonomous AI agents has shifted the focus of AI governance from model alignment to continuous control and risk management. Discuss the significance of Google DeepMind's AI Control Roadmap and examine the challenges of securing highly autonomous AI systems. (15 Marks, 250 Words)

Upper Layer NBFC (NBFC-UL) Rules – In News

The **Reserve Bank of India (RBI)** has revised the criteria for identifying **Upper Layer Non-Banking Financial Companies (NBFC-ULs)** under its **Scale-Based Regulation (SBR) Framework**. The new rules may affect whether **Tata Sons** continues to be classified as an NBFC-UL and, consequently, whether it is required to undertake a mandatory public listing.

What is an Upper Layer NBFC (NBFC-UL)?

1. **Upper Layer NBFCs (NBFC-ULs)** are **systemically important Non-Banking Financial Companies (NBFCs)** whose failure could pose risks to the stability of the financial system.
2. They are regulated under the **RBI's Scale-Based Regulation (SBR) Framework**, introduced in **October 2021**.
3. Under the SBR framework, regulatory requirements become stricter as the size, complexity, and systemic importance of an NBFC increase.
4. The RBI identifies NBFC-ULs through an **annual review** and publishes the list.
5. Once classified as an NBFC-UL, an entity remains in this category for a **minimum of five years**, even if it subsequently falls below the prescribed threshold.

Revised RBI Guidelines

1. RBI has simplified the classification criteria by introducing a **single asset-based threshold**.

2. Only NBFCs with qualifying assets of ₹1 lakh crore or more will now be classified as Upper Layer NBFCs.
3. The revised framework replaces the earlier methodology that considered multiple supervisory parameters.

What are Qualifying Assets?

1. **Qualifying assets** refer only to the assets relevant to an NBFC's financial business, such as:
 - Loans and advances
 - Eligible financial investments
 - Other NBFC-related financial assets
2. They **do not include** the value of investments in group companies unless treated as qualifying financial assets under RBI norms.
3. Therefore, the **total assets of a corporate group are not the basis** for NBFC-UL classification.

Tata Sons and the New Rules

1. In **2024**, RBI classified **Tata Sons** as an **Upper Layer NBFC**, requiring it to:
 - List on a stock exchange within **three years**, and
 - Comply with enhanced governance and disclosure requirements.
2. Under the revised rules:
 - If **Tata Sons' qualifying assets remain below ₹1 lakh crore**, it may no longer be classified as an NBFC-UL.
 - The final decision will depend on the **RBI's next annual NBFC-UL classification list**.

Significance

1. Simplifies the regulatory framework for systemically important NBFCs.
2. Ensures stricter supervision of only the largest and most interconnected financial institutions.
3. Reduces regulatory uncertainty through a transparent asset-based criterion.
4. Highlights the importance of risk-based financial sector regulation.

UPSC Prelims Practice MCQ

Q7. Under the Reserve Bank of India's revised Scale-Based Regulation (SBR) Framework, an NBFC is classified as an Upper Layer NBFC primarily on the basis of:

- (a) Annual profit exceeding ₹1,000 crore
- (b) Qualifying assets of ₹1 lakh crore or more
- (c) Number of branches across India
- (d) Market capitalisation exceeding ₹50,000 crore

Answer: (b) Qualifying assets of ₹1 lakh crore or more

Supreme Court Judge Strength Increased Through Ordinance: Constitutional Questions on Judicial Independence

Source: The Hindu

(Explainer on the Supreme Court Judges (Number of Judges) Amendment Ordinance, 2026)

Key News

1. The President promulgated the **Supreme Court (Number of Judges) Amendment Ordinance, 2026**, increasing the sanctioned strength of the Supreme Court from **34 to 38 judges** (including the Chief Justice of India).
2. The Supreme Court Collegium accepted the Ordinance and recommended appointments to the newly created posts, triggering debate on the constitutional implications of ordinance-based judicial appointments.
3. Legal experts have raised concerns regarding **judicial independence, security of tenure, and the appearance of executive influence**, as Ordinances are temporary laws requiring parliamentary approval.
4. The issue has renewed discussion on the constitutional limits of the ordinance-making power and the principle of separation of powers.

Major Key Data / Facts



1. **Article 123** empowers the President to promulgate Ordinances when Parliament is not in session.
2. **Current sanctioned strength of the Supreme Court:** 38 judges (including the Chief Justice of India) under the Ordinance.
3. **Original Constitution (1950):** Supreme Court consisted of **1 Chief Justice and 7 puisne judges**.
4. **Judges' retirement age:** Supreme Court Judges retire at **65 years** (Article 124).

Static Introduction: Ordinance-Making Power in India

What is an Ordinance?

An **Ordinance** is a temporary law promulgated by the **President of India under Article 123** (or by the Governor under **Article 213** for States) when the legislature is **not in session** and **immediate legislative action** is considered necessary.

Although promulgated by the executive, an Ordinance has the **same force and effect as an Act of Parliament**, subject to parliamentary approval.

Constitutional Provisions Related to Ordinances

Article 123

1. President may promulgate an Ordinance when:
 - Parliament is not in session.
 - Immediate action is necessary.

Article 213

1. Similar power vested in the Governor for State Legislatures.

Duration

1. Ordinance ceases to operate **six weeks after Parliament reassembles** unless approved by both Houses.

Withdrawal

1. Can be withdrawn by the President at any time.

Key Features of Ordinances

1. Temporary legislation.
2. Same legal force as an Act of Parliament.
3. Subject to judicial review.
4. Must satisfy the requirement of immediate necessity.

5. Cannot be used as a substitute for regular legislation.

Judicial Independence: Constitutional Framework

Meaning

Judicial independence refers to the ability of the judiciary to perform its constitutional functions **without interference from the executive or legislature**.

It is recognised as part of the **Basic Structure of the Constitution**.

Constitutional Safeguards for Judicial Independence

Article 124

1. Appointment of Supreme Court Judges.
2. Security of tenure.
3. Fixed service conditions.

Article 50

1. Directs the State to separate the judiciary from the executive (Directive Principle).

Removal of Judges

1. Only through **impeachment by Parliament** on grounds of proved misbehaviour or incapacity.

Financial Independence

1. Salaries charged on the Consolidated Fund of India.

Appointment of Supreme Court Judges

Constitutional Provision

Article 124(2)

Judges are appointed by the **President of India** after consultation as per the **Collegium System**, evolved through judicial decisions.

The Collegium System

Composition

1. Chief Justice of India.
2. Four senior-most Supreme Court Judges.

Functions

1. Recommends appointment and transfer of judges.
2. Protects judicial primacy in appointments.

Important Judicial Pronouncements

D.C. Wadhwa v. State of Bihar (1986)

Held:

1. Repeated re-promulgation of Ordinances amounts to a **"fraud on the Constitution."**
2. Ordinance power is an emergency power, not an alternative legislative process.

Krishna Kumar Singh v. State of Bihar (2017)

Seven-Judge Bench Held:

1. Ordinances are temporary legislative measures.
2. Satisfaction under Article 123 is subject to judicial review.
3. Re-promulgation without exceptional circumstances is unconstitutional.

Supreme Court Advocates-on-Record Association v. Union of India (2015) (NJAC Case)

Held:

1. Judicial independence forms part of the **Basic Structure**.
2. Struck down the **99th Constitutional Amendment** and **NJAC Act**.
3. Upheld judicial primacy in appointments through the Collegium System.

Gokaraju Rangaraju v. State of Andhra Pradesh (1981)

Principle Established

1. **De Facto Doctrine:** Acts performed by an official acting under the colour of lawful authority remain valid even if the appointment is later found defective.

Supreme Court Judges (Number of Judges) Act Constitutional Basis

Article 124(1)

Parliament has the authority to determine the maximum number of Supreme Court judges by law. The sanctioned strength has been increased periodically through legislation to address the growing pendency of cases.

Doctrine of Separation of Powers

Meaning

The Constitution distributes powers among:

1. Legislature
2. Executive
3. Judiciary

Each organ acts as a check on the others while maintaining institutional independence.

Doctrine of Basic Structure

Established in:

Kesavananda Bharati v. State of Kerala (1973)

Includes:

1. Judicial Independence.
2. Rule of Law.
3. Separation of Powers.
4. Supremacy of the Constitution.
5. Judicial Review.

Constitutional Concerns Raised

Security of Tenure

1. Ordinance-created judicial posts remain temporary until Parliament enacts legislation.

Judicial Independence

1. Temporary statutory backing may create a perception of executive influence over judicial composition.

Separation of Powers

1. Raises debate over whether expansion of the Court through an Ordinance should await parliamentary approval.

Public Confidence

1. Judicial legitimacy depends not only on actual independence but also on the appearance of institutional impartiality.

UPSC Value Addition

Difference Between an Act and an Ordinance

Feature	Act	Ordinance
Passed by	Parliament	President under Article 123
Nature	Permanent law	Temporary law
Parliamentary Approval	Already approved	Must be approved within six weeks of reassembly

Duration	Until amended/repealed	Lapses if not approved
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Timeline of Supreme Court Judge Strength

Year	Sanctioned Strength*
1950	8 (1 CJI + 7 Judges)
1956	11
1960	14
1977	18
1986	26
2009	31
2019	34
2026 (Ordinance)	38

Including the Chief Justice of India.

UPSC Prelims Practice Question

Q8. Consider the following statements regarding Ordinances in India:

1. The President promulgates Ordinances under **Article 123** when Parliament is not in session and immediate action is necessary.
2. An Ordinance has the same force and effect as an Act of Parliament during its operation.
3. Repeated re-promulgation of Ordinances without exceptional circumstances has been held unconstitutional by the Supreme Court.
4. Judicial independence has been recognised by the Supreme Court as part of the Basic Structure of the Constitution.

Which of the statements given above are correct?

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

Answer:

- (a) 1, 2, 3 and 4

Explanation

1. **Statement 1 – Correct**

2. Article 123 empowers the President to promulgate Ordinances when Parliament is not in session and immediate action is necessary.
3. **Statement 2 – Correct**
4. During its operation, an Ordinance has the same force and effect as an Act of Parliament.
5. **Statement 3 – Correct**
6. In **D.C. Wadhwa (1986)** and **Krishna Kumar Singh (2017)**, the Supreme Court held that repeated re-promulgation is unconstitutional.
7. **Statement 4 – Correct**
8. Judicial independence is recognised as a **Basic Structure** feature, reaffirmed in the **NJAC judgment (2015)**.

Possible UPSC Mains Question

Q9. "The ordinance-making power is intended for exceptional situations, yet its use in matters affecting constitutional institutions often raises concerns regarding separation of powers and judicial independence." Discuss in the context of the Supreme Court Judges (Number of Judges) Amendment Ordinance, 2026. (250 words)

India Expands Ethanol Blending Roadmap: Higher Ethanol-Petrol Blends and Flex-Fuel Ecosystem in Focus

Source: Indian Express (IE) | India Today (IT)

Key News

1. The Central Government has exempted **higher ethanol-petrol blends (E22–E30)** from central excise duty, placing them on par with the existing **E20 fuel**.
2. It has also proposed amendments to the **Central Motor Vehicles Rules (CMVR)** to formally recognize **E85** and **E100** fuels, paving the way for flex-fuel vehicles in India.

3. The measures indicate India's intention to move beyond the E20 blending target while promoting cleaner fuels and reducing dependence on imported crude oil.
4. However, the proposed transition has raised concerns regarding engine compatibility, consumer costs, fuel efficiency, and readiness of the automobile industry.
5. The government has clarified that any shift to higher blends will be implemented gradually after adequate testing and stakeholder consultation.

Major Key Data / Facts

1. **India achieved the E20 (20% ethanol blending) target in 2025**, five years ahead of the original schedule.
2. **Crude Oil Import Dependence:** Around **88.5%** of India's crude oil requirement is met through imports.
3. **Ethanol Supply to Oil Marketing Companies (OMCs):** Increased from **38 crore litres (2013–14)** to over **1,039 crore litres (2024–25)**.
4. **Brazil's Standard Blend:** Petrol sold in Brazil generally contains **27–32% ethanol**, alongside the availability of **E100** fuel for flex-fuel vehicles.

Static Introduction: Ethanol Blending Programme (EBP)

What is the Ethanol Blending Programme (EBP)?

The **Ethanol Blending Programme (EBP)** is a flagship initiative of the Government of India aimed at blending ethanol with petrol to reduce fossil fuel consumption, lower crude oil imports, improve farmers' income, and reduce greenhouse gas emissions.

The programme is implemented by the **Ministry of Petroleum and Natural Gas (MoPNG)** in coordination with **Oil Marketing Companies (OMCs)**.

What is Ethanol?

Definition

Ethanol is a renewable biofuel produced by fermenting sugar-rich or starch-rich agricultural feedstocks.

Major Feedstocks

1. Sugarcane juice
2. Sugarcane molasses
3. Maize
4. Broken rice
5. Damaged food grains

Understanding Ethanol Blends

Fuel	Composition
E10	10% Ethanol + 90% Petrol
E20	20% Ethanol + 80% Petrol
E25	25% Ethanol + 75% Petrol
E85	85% Ethanol + 15% Petrol
E100	100% Ethanol

What are Flex-Fuel Vehicles (FFVs)?

Definition

Flex-Fuel Vehicles are automobiles designed to operate on varying mixtures of petrol and ethanol, including high ethanol blends such as **E85** or even **E100**.

Features

1. Specially designed fuel systems.
2. Corrosion-resistant engine components.
3. Electronic fuel management systems.
4. Automatic adjustment to different fuel blends.

Objectives of Ethanol Blending

Energy Security

1. Reduce dependence on imported crude oil.
2. Improve India's energy self-reliance.

Environmental Benefits

1. Lower carbon emissions.
2. Cleaner combustion compared to conventional petrol.

Farmer Welfare

1. Provide an additional market for surplus sugarcane and food grains.
2. Improve rural incomes.

Foreign Exchange Savings

1. Reduce expenditure on petroleum imports.

Advantages of Higher Ethanol Blending

Environmental

1. Reduced greenhouse gas emissions.
2. Lower carbon monoxide emissions.
3. Cleaner transportation fuel.

Economic

1. Lower crude oil imports.
2. Strengthened domestic biofuel industry.
3. Additional income opportunities for farmers.

Strategic

1. Improved energy diversification.
2. Reduced vulnerability to global oil price shocks.

Challenges Associated with Higher Blends

Technical Challenges

1. Engine compatibility for older vehicles.
2. Corrosion of fuel system components.
3. Cold-start performance issues.
4. Lower fuel efficiency due to lower energy density of ethanol.

Consumer Challenges

1. Limited choice of fuel blends at retail outlets.
2. Possible increase in vehicle maintenance costs.
3. Lack of widespread flex-fuel vehicle availability.

Industry Challenges

1. Fresh engine testing and certification.
2. Fuel distribution and storage logistics.
3. Managing multiple fuel grades simultaneously.

National Policy on Biofuels, 2018 (Amended 2022)

Objectives

1. Promote biofuel production.
2. Encourage advanced biofuels.
3. Reduce import dependence.
4. Support sustainable energy transition.

Classification

1. **First Generation (1G):** Produced from sugarcane, maize, molasses, food grains.
2. **Second Generation (2G):** Produced from agricultural residues and lignocellulosic biomass.

3. **Third Generation (3G):** Produced from algae and advanced feedstocks.

Brazil's Ethanol Model

Why Brazil is a Global Leader

1. Ethanol programme initiated during the 1970s oil crisis.
2. Widespread adoption of flex-fuel vehicles.
3. Consumers can choose between petrol blends and E100.
4. Government pricing incentives make ethanol economically attractive.
5. Phased implementation minimized disruption to existing vehicle owners.

Institutions Involved

Ministry of Petroleum and Natural Gas (MoPNG)

1. Implements the Ethanol Blending Programme.

Bureau of Indian Standards (BIS)

1. Prescribes fuel quality standards.

Oil Marketing Companies (OMCs)

1. Procure ethanol and supply blended fuel.

UPSC Value Addition

Difference Between Ethanol Blending and Flex-Fuel Vehicles

Feature	Ethanol Blending	Flex-Fuel Vehicles
Fuel Used	Fixed ethanol blend (E10, E20, etc.)	Multiple blends up to E100
Vehicle Requirement	Conventional vehicles (up to approved blend)	Specially designed engines
Consumer Choice	Limited	High

Related Government Initiatives

1. Ethanol Blending Programme (EBP)
2. National Policy on Biofuels, 2018
3. SATAT (Sustainable Alternative Towards Affordable Transportation)
4. National Green Hydrogen Mission
5. PM-JI-VAN Yojana

UPSC Prelims Practice Question

Q1. Consider the following statements regarding ethanol blending in India:

1. Ethanol is primarily produced in India from sugarcane-based feedstocks and food grains.
2. Flex-fuel vehicles are designed to operate on different combinations of petrol and ethanol, including high ethanol blends.
3. The Ethanol Blending Programme is implemented by the Ministry of Petroleum and Natural Gas.
4. Ethanol has a higher energy content than petrol and therefore always improves vehicle mileage.

Which of the statements given above are correct?

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

Answer:

- (a) 1, 2 and 3 only

Explanation

1. **Statement 1 – Correct**
2. Ethanol in India is produced mainly from sugarcane derivatives and approved food grains such as maize and surplus rice.
3. **Statement 2 – Correct**
4. Flex-fuel vehicles can run on varying petrol-ethanol mixtures, including E85 and E100.
5. **Statement 3 – Correct**
6. The Ethanol Blending Programme is implemented by the Ministry of Petroleum and Natural Gas through Oil Marketing Companies.
7. **Statement 4 – Incorrect**
8. Ethanol has **lower energy density than petrol**, and higher blends may reduce mileage in conventional vehicles unless

engines are specifically designed for them.

Possible UPSC Mains Question

Q2. "India's push towards higher ethanol blending is driven by the twin objectives of energy security and sustainable development. Examine the benefits, challenges, and lessons from Brazil's ethanol model for India's biofuel transition." (250 words)

Drone Warfare Reshapes Modern Conflicts: Lessons from Ukraine and West Asia for India's Defence Strategy

Source: Indian Express (IE)

Key News

1. Recent conflicts in **Ukraine, Lebanon, and West Asia** have demonstrated that drones have evolved from support assets into decisive instruments of modern warfare.
2. Low-cost, mass-produced drones are increasingly replacing expensive conventional platforms for surveillance, precision strikes, electronic warfare, and logistics.
3. Ukraine has pioneered industrial-scale drone warfare, while Iran has integrated drones into its broader strategy of deterrence and regional power projection.
4. The changing character of warfare highlights the importance of domestic drone manufacturing, counter-drone capabilities, and technological innovation for countries such as India.
5. Experts believe future military superiority will increasingly depend on the ability to produce, deploy, and neutralize drones at scale.

Major Key Data / Facts

1. **Russia-Ukraine War:** Began on **24 February 2022** and is regarded as the world's first large-scale drone-intensive conflict.

2. **First-Person View (FPV) drones** are low-cost commercial drones modified into precision strike weapons.
3. **Fibre-optic FPV drones** transmit commands through fibre-optic cables, making them resistant to radio-frequency jamming.
4. India promotes indigenous defence innovation through initiatives such as **iDEX (Innovations for Defence Excellence)** and the **Make in India** programme.

Static Introduction: Drone Warfare

What is Drone Warfare?

Drone warfare refers to the military use of **Unmanned Aerial Vehicles (UAVs)** for reconnaissance, surveillance, precision strikes, electronic warfare, logistics, and intelligence gathering without placing pilots at immediate risk. Modern drones have transformed warfare by providing persistent battlefield awareness, precision targeting, and cost-effective combat capabilities.

What are Drones (UAVs)?

Definition

An **Unmanned Aerial Vehicle (UAV)** is an aircraft operated remotely or autonomously without an onboard human pilot.

Major Components

1. Airframe
2. Navigation system
3. Communication link
4. Sensors
5. Cameras
6. Payload (if armed)

Types of Military Drones

Type	Primary Role
Reconnaissance UAV	Intelligence, Surveillance & Reconnaissance (ISR)
Combat UAV (UCAV)	Precision strikes
Loitering Munition	Search and destroy targets

FPV Drone	Short-range precision attack
Logistics Drone	Transport of supplies
Electronic Warfare Drone	Jamming and communication disruption

Major Military Applications of Drones

Intelligence, Surveillance and Reconnaissance (ISR)

1. Border monitoring.
2. Real-time battlefield awareness.
3. Enemy movement tracking.

Precision Strike

1. Targeted attacks on military infrastructure.
2. Elimination of high-value targets.
3. Reduced collateral damage.

Electronic Warfare

1. Communication jamming.
2. GPS disruption.
3. Radar suppression.

Logistics Support

1. Delivery of ammunition.
2. Medical evacuation support.
3. Supply transport to remote areas.

Emerging Concepts in Drone Warfare

First-Person View (FPV) Drones

Definition

Commercial racing drones modified for military operations and controlled through live video feeds.

Advantages

1. Low cost.
2. High manoeuvrability.
3. Precision attacks.
4. Easy mass production.

Loitering Munitions

Definition

Weapons capable of hovering over a target area before striking once a suitable target is identified.

Examples

1. Harop (Israel)
2. Shahed series (Iran)
3. RAM II (Ukraine)

Fibre-Optic Drones

Key Feature

Instead of radio signals, commands are transmitted through ultra-thin fibre-optic cables.

Advantages

1. Resistant to electronic jamming.
2. Secure communication.
3. Greater effectiveness in contested electromagnetic environments.

Why Drone Warfare is Transforming Modern Conflicts**Military Advantages**

1. Low procurement cost.
2. Precision targeting.
3. Reduced risk to personnel.
4. Rapid deployment.
5. Persistent surveillance.

Strategic Advantages

1. Enables asymmetric warfare.
2. Challenges conventional military superiority.
3. Increases operational flexibility.

Challenges of Drone Warfare**Security Challenges**

1. Swarm attacks.
2. Terrorist use of commercial drones.
3. Cross-border infiltration.
4. Protection of critical infrastructure.

Technological Challenges

1. Electronic warfare.
2. GPS spoofing.
3. Cyber vulnerabilities.
4. Counter-drone detection.

Legal and Ethical Issues

1. Civilian casualties.
2. Autonomous weapons.
3. Compliance with International Humanitarian Law (IHL).
4. Attribution of responsibility.

Counter-Drone Technologies**Kinetic Measures**

1. Anti-aircraft guns.
2. Surface-to-air missiles.
3. Directed-energy weapons.

Non-Kinetic Measures

1. Radio-frequency jammers.
2. GPS spoofing.
3. Electronic warfare systems.
4. Laser-based interception.

India's Drone Ecosystem**Government Initiatives****Drone Rules, 2021**

1. Simplified regulations.
2. Liberalised drone operations.
3. Promoted indigenous manufacturing.

Production-Linked Incentive (PLI) Scheme

1. Encourages domestic drone production.

Innovations for Defence Excellence (iDEX)

1. Supports defence startups and indigenous technologies.

Make in India

1. Promotes self-reliance in defence manufacturing.

India's Strategic Concerns**Western Border**

1. Drone-based infiltration.
2. Weapon and narcotics smuggling.
3. Surveillance activities.

Northern Border

1. China's advanced UAV capabilities.
2. High-altitude surveillance requirements.

Maritime Domain

1. Monitoring the Indian Ocean Region.
2. Coastal security.
3. Anti-piracy operations.

Global Trends**United States**

1. MQ-9 Reaper.
2. AI-enabled autonomous systems.

Israel

1. Pioneer in UAV technology.
2. Heron and Harop platforms.

Turkey

1. Bayraktar TB2.
2. Widely exported combat drones.

China

1. Wing Loong and CH-series UAVs.

2. Large-scale indigenous production.

UPSC Value Addition

Difference Between UAV, UCAV and Loitering Munition

Platform	Purpose
UAV	Surveillance and reconnaissance
UCAV	Armed combat operations
Loitering Munition	Search, wait and strike target

Important Indian Drone Systems

Drone	Organisation
TAPAS BH-201	DRDO
Rustom-II	DRDO
Archer-NG	HAL
Heron	Indian Armed Forces (Israeli origin)
MQ-9B Predator (proposed/inducted in phases)	Indian Armed Forces

UPSC Prelims Practice Question

Q3. Consider the following statements regarding drone warfare:

1. Unmanned Aerial Vehicles (UAVs) can be used for intelligence gathering, surveillance, logistics, and precision strikes.
2. Loitering munitions are capable of remaining over a target area before attacking.
3. Fibre-optic drones are less vulnerable to radio-frequency jamming than conventional radio-controlled drones.

4. The Drone Rules, 2021 were introduced to simplify regulations governing drone operations in India.

Which of the statements given above are correct?

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

Answer: (a) 1, 2, 3 and 4

Explanation

1. Statement 1 – Correct

UAVs perform a wide range of military roles, including ISR, logistics, and precision attacks.

2. Statement 2 – Correct

Loitering munitions hover over a target area before engaging the target.

3. Statement 3 – Correct

Fibre-optic drones use physical fibre-optic links, making them resistant to radio-frequency jamming.

4. Statement 4 – Correct

The Drone Rules, 2021 simplified India's regulatory framework to encourage drone adoption and manufacturing.

Possible UPSC Mains Question

Q4. "Drone warfare has fundamentally altered the nature of modern conflicts by reducing the cost of precision warfare and empowering asymmetric actors. Examine the strategic implications for India and suggest measures to strengthen indigenous drone and counter-drone capabilities." (250 words)

Student Notes

જાણ IAS, IPS, જેવી પદવી ઝાંઝા કરી સાચા રાષ્ટ્ર સેવક
બને અને સમાજ તથા દેશની સેવા કરે.

All Individuals, by pursuing titles such as IAS and IPS, truly become
'Rashtra Sevaks' and serve society and the nation.

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