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# UPSC CURRENT AFFAIRS

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# Contents

# 1. India's first publicly articulated national counter terror strategy document, PRAHAAR

- The Ministry of Home Affairs (MHA) has released PRAHAAR, India's first publicly articulated national counter-terror (CT) strategy document. Running into eight pages, the document consolidates India's long-standing anti-terror framework into a single, formal policy statement.
- While it introduces no sweeping new laws or agencies, it marks a significant political and strategic articulation of intent — projecting a unified, zero-tolerance stance against terrorism.

## What is PRAHAAR?

- PRAHAAR presents a comprehensive national vision to tackle terrorism in an evolving threat environment. It frames India's terrorism challenge within:
- Decades of cross-border violence
- Global jihadist networks such as Al-Qaeda and Islamic State

- Emerging technological threats including:
  - Drone-based attacks
  - Encrypted communications
  - Dark web operations
  - Crypto-financing
  - Cyber warfare
- Attempts to access CBRNED (Chemical, Biological, Radiological, Nuclear, Explosive, Digital) materials
- Importantly, PRAHAAR avoids focusing on any single theatre of conflict and instead situates terrorism within a broad and evolving national security landscape.

## The Seven Pillars of PRAHAAR

- **The strategy proposes a seven-pillar response framework:**

### 1. Intelligence-led Prevention

- Strengthening real-time inter-agency coordination
- Disrupting propaganda, sleeper cells, funding channels, and arms networks
- Leveraging mechanisms such as the Multi-Agency Centre (MAC)

### 2. Swift and Proportionate Response

- Local police as first responders
- Backing by specialised forces such as the National Security Guard (NSG)
- Rapid neutralisation of threats

### 3. Capacity Aggregation

- Police modernisation initiatives
- Standardised counter-terror training
- Skill development through agencies like the Bureau of Police Research and Development (BPR&D)

### 4. Rule of Law and Human Rights

- Firm adherence to constitutional safeguards
- Clear rejection of religious profiling
- Emphasis that terrorism is not linked to any religion or identity

### 5. De-radicalisation and Community Engagement

- Focus on youth and women
- Graded de-radicalisation strategies
- Linking counter-terror policy with poverty alleviation, housing, education, and employment schemes

### 6. International Cooperation

- Intelligence sharing
- Legal assistance and extradition
- Multilateral designations of terrorist entities

### 7. Recovery and Resilience

- Whole-of-society approach
- Civil administration, NGOs, professionals, and communities as stakeholders
- Strengthening resilience post-attack

## What's New — And What Isn't?

### Not Entirely New Measures

- Most instruments mentioned in PRAHAAR already exist:
  - National Investigation Agency (NIA)
  - National Security Guard (NSG)
  - Unlawful Activities (Prevention) Act (UAPA)
  - Central Armed Police Forces (CAPFs)
- Intelligence-sharing mechanisms

### The Real "Newness"

- First consolidated public articulation of India's CT doctrine
- Elevation of human rights and rule of law as explicit pillars
- Explicit linkage of development and counter-radicalisation
- Strong diplomatic messaging that India does not associate terrorism with any community

## How the West Approaches Counter-Terrorism

### United States

- **The United States Department of Homeland Security (DHS) and the White House have published detailed strategies such as:**
  - The US National Strategy for Counterterrorism (2018)
  - Strategic Framework for Countering Terrorism and Targeted Violence (2020)
- **Key features:**
  - 34-page detailed blueprint
  - "Lines of effort" with measurable objectives
  - Focus on border security, terror finance disruption, intelligence sharing

### Annual reporting to Congress

### United Kingdom

- **The UK's CONTEST 2023 strategy, updated under the Sunak ministry, spans 78 pages and operates under four strands:**
  - Prevent – Stop radicalisation
  - Pursue – Stop attacks
  - Protect – Strengthen infrastructure
  - Prepare – Mitigate impact
- **It includes:**
  - A dedicated Counter-Terrorism Operations Centre
  - Clearly defined local government roles
  - Formal reporting structures

## Oversight mechanisms

### How PRAHAAR Compares

#### Length and Detail

- **PRAHAAR:** 8 pages
- **US Strategy:** 34 pages
- **UK CONTEST:** 78 pages
- PRAHAAR lays out broad principles but avoids granular operational details.

#### Oversight and Metrics

- No public commitment to annual review
- No defined performance indicators
- No publicly articulated oversight mechanisms
- In contrast, US and UK models incorporate measurable outcomes and regular reporting.

#### Ideological Scope

- PRAHAAR focuses largely on cross-border and jihadist threats
- Western strategies also address extreme right-wing and hybrid extremism
- Officials suggest tactical details were deliberately excluded to avoid revealing vulnerabilities.

## Implementation Challenges

- Experts flag several gaps between policy articulation and ground execution:

#### State-Level Translation

- Need for state-wise operational guidelines
- Clear demarcation of roles between local police, ATS units, and NSG

#### Capacity Building

- Upgrading district-level police training
- Expanding state-specific counter-terror forces

#### De-radicalisation Framework

- No national deradicalisation policy
- States like Telangana and Maharashtra have local models, but scaling remains limited

#### Inter-Agency Coordination

- The NIA's structure highlights coordination challenges:
- Unlike the FBI, the NIA lacks independent intelligence-gathering powers
- Intelligence collection lies with MAC and the Intelligence Bureau
- Success depends heavily on seamless coordination

## Strengths of PRAHAAR

- Public consolidation of India's CT doctrine
- Explicit zero-tolerance political stance

- Rejection of religious profiling
- Formal embedding of human rights safeguards
- Integration of development and security narratives
- Whole-of-society approach

## Weaknesses and Gaps

- Lack of granular operational detail
- No public oversight or reporting metrics
- Absence of a national deradicalisation framework
- Unclear implementation roadmap for states
- Heavy dependence on coordination without structural reform

## The Way Forward

- **For PRAHAAR to move beyond symbolic value:**
  - MHA must issue operational guidelines translating pillars into daily policing
  - Strengthen ATS and district-level capacity
  - Develop measurable performance indicators
  - Institutionalise review mechanisms
  - Scale successful state-level de-radicalisation models

## QUESTIONS

**1.** Consider the following statements regarding India's counterterrorism legal framework:

1. The Unlawful Activities (Prevention) Act allows banning terrorist organisations and seizing their assets.
2. The National Investigation Agency Act created a central agency to investigate terrorism-related offences across states.
3. The National Security Act permits preventive detention only during wartime emergencies.

Which of the statements given above is/are correct?

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

**2.** With reference to India's counterterrorism institutional and operational mechanisms, consider the following statements:

1. The Multi-Agency Centre (MAC) functions as a real-time intelligence-sharing platform linking central and state agencies.
2. The National Technical Research Organisation (NTRO) provides technical intelligence including cyber and satellite monitoring.

3. The National Security Guard (NSG) is primarily responsible for border guarding duties along India's international borders.
4. Anti-Terrorism Squads (ATS) operate at the state level and coordinate with central agencies.

Which of the statements given above are correct?

A. 1, 2 and 4 only
B. 1 and 3 only
C. 2 and 4 only
D. 1, 2, 3 and 4

**3.** Consider the following statements regarding the PRAHAAR strategy:

1. PRAHAAR represents India's shift from a reactive approach to a proactive, intelligence-driven counter-terrorism doctrine.
2. One of its pillars focuses on aligning international efforts to counter terrorism.
3. The strategy prioritizes military retaliation as the primary response to terror attacks.

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

**4.** With reference to the prevention and response components under PRAHAAR, consider the following statements:

1. The Multi Agency Centre (MAC) enables real-time intelligence sharing among central and state agencies.
2. Local police serve as first responders, supported by specialized state forces and CAPFs.
3. The National Security Guard (NSG) is the primary investigative agency for terror offences.
4. The National Investigation Agency (NIA) works with state police to ensure high prosecution rates after incidents.

Which of the statements given above are correct?

A. 1, 2 and 4 only
B. 1 and 3 only
C. 2 and 3 only
D. 1, 2, 3 and 4

**5.** Consider the following statements regarding the human rights and soft-power dimensions of PRAHAAR:

1. The strategy emphasizes adherence to the Rule of Law and international human rights commitments.
2. It includes de-radicalization initiatives involving community leaders and NGOs.
3. Radicalised youth are to be treated only through punitive legal measures under the policy.
4. The policy addresses prison radicalisation by separating ideologues from vulnerable inmates.

Which of the statements given above is/are correct?

A. 1, 2 and 4 only
B. 1 and 3 only
C. 2 and 4 only
D. 1, 2, 3 and 4

# 2. Moral and Ethical Systems, Accountable Governance, National Sovereignty, Accessible and Inclusive AI, and Valid and Legitimate Systems (M.A.N.A.V)

- At the India AI Impact Summit 2026, held at Bharat Mandapam from February 16–20, global technology leaders and policymakers convened to deliberate on the future of artificial intelligence.
- During his inaugural address on February 19, Prime Minister Narendra Modi presented a human-centric AI framework titled M.A.N.A.V., positioning AI not as an autonomous force, but as an extension of human aspirations, ethics, and dignity.


## What is M.A.N.A.V.? India's Five-Pillar AI Vision

### 1. M – Moral & Ethical Systems

- AI must be rooted in fairness, transparency, and human oversight.
- National Education Policy 2020 integrates AI literacy and computational thinking across education levels.
- India secured a Guinness World Record with 250,946 public pledges for responsible AI use within 24 hours, reinforcing ethical AI as a national commitment.

### 2. A – Accountable Governance

- Trust in AI must be backed by transparent rules and strong oversight.
- The IndiaAI Mission, approved with an outlay exceeding Rs. 10,300 crore, strengthens compute infrastructure, skilling, datasets, and embeds governance standards.
- India's AI Governance Guidelines promote trust, equity, accountability, and fairness in AI deployment.

### 3. N – National Sovereignty

- Sovereignty now extends to data, algorithms, and digital infrastructure.
- The India Semiconductor Mission and secure digital public infrastructure initiatives aim to build indigenous AI and chip-making capacity.
- Focus on domestic compute strength ensures global collaboration without strategic dependency.

### 4. A – Accessible & Inclusive AI

- AI must empower society, not remain limited to elites.
- India's Digital Public Infrastructure enables scalable AI in healthcare, agriculture, education, and governance.

- **Platforms such as:**
  - MeghRaj GI Cloud
  - IndiaAI Compute Portal
- These democratize access to GPUs and TPUs for startups, researchers, and institutions.
- National Supercomputing Mission strengthens high-performance computing capacity nationwide.

### 5. V – Valid, Verified & Legitimate Systems

- Emphasis on trust, safety, and legality in AI systems.
- The Information Technology (Intermediary Guidelines and Digital Media Ethics Code) Amendment Rules, 2026 regulates synthetic and AI-generated content to counter deepfakes.
- **Under the IndiaAI Mission's "Safe and Trusted AI" pillar, India supports:**
  - Bias mitigation
  - Privacy-preserving AI design
  - Algorithmic auditing tools
  - Risk assessment frameworks

## India's Global AI Leadership Moment

- With one-sixth of the world's population and the largest youth cohort, India positions itself as both a major AI creator and adopter.
- The M.A.N.A.V. framework presents a civilisational perspective on AI, aligning innovation with ethics, governance with accountability, sovereignty with openness, inclusion with scale, and legitimacy with trust.
- India signals that its AI strategy is not only technologically ambitious, but also socially responsible and globally collaborative.

### Bottom Line:

- At the India AI Impact Summit 2026, India articulated a bold, human-first AI doctrine—placing humanity, democratic values, and global responsibility at the core of technological progress.
- India's demographic advantage is powering its AI transformation, with over 65% of the population under the age of 35 positioned at the centre of the country's digital and innovation strategy.
- AI skilling is accelerating at scale, supported by national initiatives spanning schools, vocational platforms, advanced research fellowships, and industry partnerships.
- Affordable AI infrastructure and policy support under the IndiaAI Mission are democratising access to compute, data, and innovation opportunities beyond metropolitan cities.
- Youth-led innovation is moving from experimentation to global impact, positioning India as an emerging hub for responsible, inclusive, and use-case driven AI leadership.

## Empowering Youth at the India-AI Impact Summit 2026

- The India AI Impact Summit 2026 has positioned youth and inclusive talent development at the centre of India's AI transformation journey.
- Through global challenges, innovation showcases, and policy dialogues, the Summit is highlighting how young innovators and women entrepreneurs are shaping responsible, scalable AI solutions for public good.

### Youth at the Core of India's Sovereign AI Vision:

- At the India AI Impact Summit 2026, youth empowerment is embedded within the broader vision of advancing India's Sovereign AI capabilities.
- The session on "Scaling Impact from India's Sovereign AI and Data" highlighted the need to cultivate deep research talent, sustained innovation ecosystems, and indigenous AI models tailored to India's linguistic and developmental contexts.

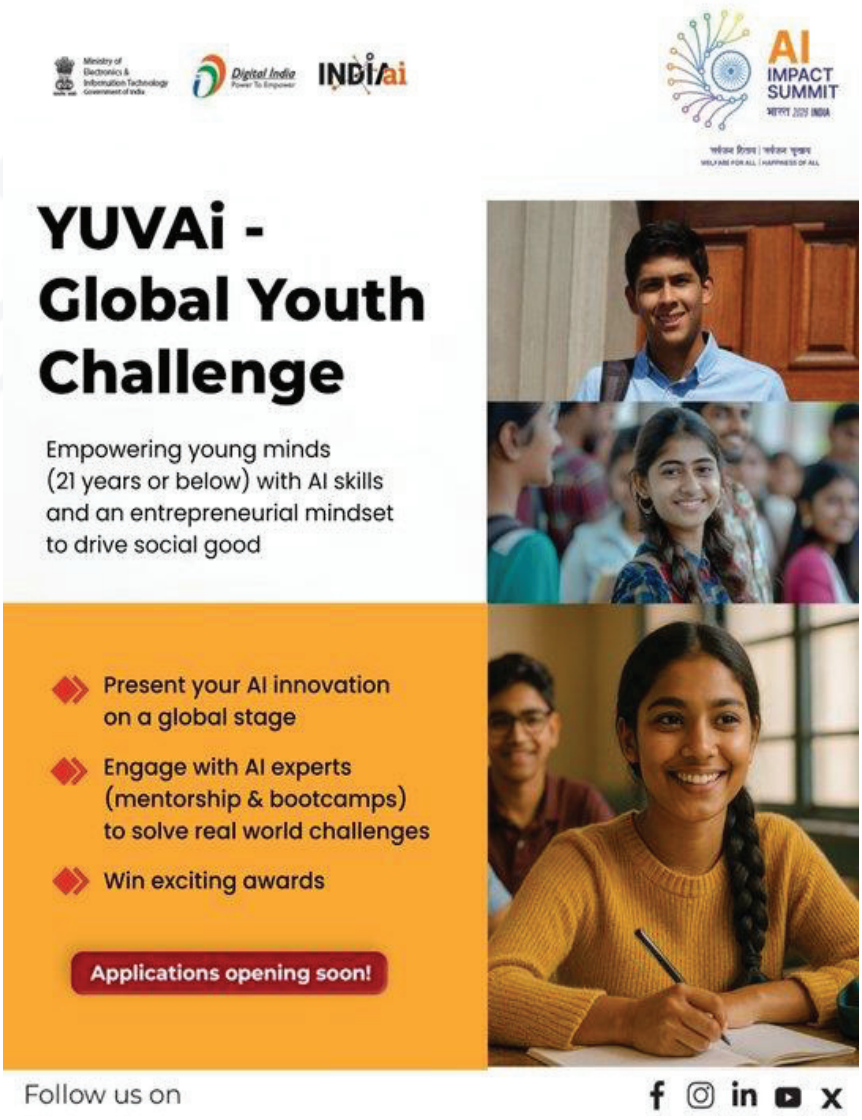
- Leaders stressed that young innovators must be equipped to build transparent, explainable, and nationally aligned AI systems that address real challenges.
- By connecting advanced AI research with priority sectors such as agriculture, healthcare, education, and financial inclusion, the Summit is positioning India's youth as key drivers of globally competitive and socially impactful AI solutions.

## From Algorithms to Outcomes:

- At the Summit, youth engagement is being reinforced through a strong emphasis on building AI that delivers measurable public impact.
- In the session "From Algorithms to Outcomes," Shri S. Krishnan, Secretary, MeitY, highlighted that the India AI Mission is designed to address real-world challenges by translating compute, models, and data into deployable applications.
- With over 600 startups and companies showcasing AI solutions across healthcare, agriculture, education, and manufacturing, the Summit offers young innovators direct exposure to scalable use cases and public sector problem-solving.
- Discussions with global experts underscored the importance of rigorous evaluation, responsible scaling, and evidence-based implementation, positioning youth not just as technologists, but as contributors to outcome-driven and citizen-centric AI systems.

## YUVAi Global Youth Challenge:

- YUVAi Global Youth Challenge, a flagship initiative under the IndiaAI Mission is empowering young innovators aged between 13–21 to build AI solutions aligned with the objectives- People, Planet and Progress.
- With over 2,500 applications from 38 countries, the Challenge showcased 70 high-potential teams addressing critical sectors such as healthcare, agriculture, climate resilience, accessibility, digital trust and smart mobility.
- Winning teams received national recognition along with financial awards and structured ecosystem support, including mentorship, incubation and industry linkages.
- Through rigorous evaluation focused on technical robustness, deployment readiness and social impact, the Summit is demonstrating how youth-led AI innovation can transition from prototype to scalable public-good solutions, strengthening India's leadership in responsible and inclusive AI.



### AI by HER Global Impact Challenge:

- The AI By HER Global Impact Challenge positioned women and young innovators at the forefront of India's responsible AI movement.
- Through panel discussions, startup showcases, and rapid spotlight pitches, the programme demonstrated how empathy-driven innovation can translate into scalable solutions across healthcare, climate resilience, education, fintech, security, and digital public infrastructure.
- From school-level problem solvers to deep-tech founders, participants highlighted how AI anchored in trust, sector-specific design, and strong digital public infrastructure can deliver measurable societal outcomes.
- The announcement of a dedicated capacity-building programme for 150 women-led AI startups further reinforced the Summit's commitment to moving from access to acceleration, ensuring that youth and women innovators are supported from ideation to scale.

### Global Dialogue on AI Usage – Data for Labour Market Resilience:

- The session on "Global Dialogue on AI Usage – Data for Labour Market Resilience" on the second day of the India AI Impact Summit 2026 focused on the changing nature of work and job scenarios in the context of accelerating artificial intelligence adoption and the policy choices required to manage this transition.
- Drawing on emerging international evidence, the discussion noted differentiated impacts across age groups, sectors, and geographies, with early trends indicating employment pressures for younger workers in roles with higher AI exposure.

### AI Impact Startup Book:

- The launch of the AI Impact Startup Book marked a significant step in empowering young entrepreneurs by providing a consolidated repository of over 100 AI solutions developed across India.
- The compendium highlights innovation across healthcare, agriculture, education, foundation models, and edge AI, showcasing the growing maturity and global footprint of Indian startups.
- By creating a structured mechanism to evaluate and scale impactful use cases across ministries and states, the initiative enables young innovators to transition from pilot projects to population-scale deployment.
- Emphasising the goal of making India the "use-case capital" over the next 12–18 months, the Summit reinforced its commitment to converting youth-led AI innovation into measurable, real-world outcomes.
- Collectively, these initiatives reaffirm India's commitment to building a future-ready, inclusive AI ecosystem powered by youth leadership and gender diversity.
- By combining innovation platforms with policy engagement and ecosystem support, the Summit strengthened pathways for young talent to drive sustainable growth and global AI impact.

## QUESTIONS

**6.** Consider the following statements regarding AI integration in India's education system:

1. Under NEP 2020, CBSE offers an AI skill module beginning from Class VI.
2. DIKSHA platform uses AI-enabled features such as read-aloud tools to improve accessibility.
3. YUVAi programme is designed exclusively for engineering students to develop AI solutions.

Which of the statements given above is/are correct?

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

**7.** With reference to the M.A.N.A.V. vision articulated at the India AI Impact Summit, consider the following statements:

1. The vision emphasizes Moral and Ethical Systems in AI design and deployment.
2. National Sovereignty under MANAV includes control over data, algorithms, and digital infrastructure.
3. Accessible AI under MANAV prioritizes exclusive access for strategic sectors only.

Which of the statements given above are correct?

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

**8.** Consider the following statements regarding governance and regulation of AI in India:

1. The IndiaAI Mission includes governance mechanisms for responsible development and deployment of AI.
2. India's AI Governance Guidelines promote transparency, accountability, and fairness.
3. The IT (Intermediary Guidelines and Digital Media Ethics Code) Amendment Rules, 2026 regulate synthetically generated content.

Which of the statements given above is/are correct?

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

**9.** With reference to India's inclusive AI and digital infrastructure initiatives, consider the following statements:

1. MeghRaj GI Cloud and IndiaAI Compute Portal provide shared computing resources.
2. IndiaAI Kosh provides datasets and AI models across sectors.
3. National Supercomputing Mission focuses only on defence applications.

Which of the statements given above are correct?

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

**10.** Consider the following statements regarding recent AI initiatives in India:

1. Bhashini provides multilingual AI tools to improve access to digital services.
2. BharatGen AI is India's government-funded multimodal large language model supporting multiple Indian languages.
3. Sarvam AI's sovereign LLM ecosystem is designed exclusively for private sector use.
4. AI Data Labs under the IndiaAI Mission support foundational AI and data training.

Which of the statements given above are correct?

A. 1, 2 and 4 only
C. 2 and 4 only
B. 1 and 3 only
D. 1, 2, 3 and 4

# 3. NIELIT to Establish India's First Dedicated Quantum & AI University Campus in Amaravati


- At the India AI Impact Summit, the National Institute of Electronics & Information Technology (NIELIT), under the Ministry of Electronics & Information Technology (MeitY), Government of India, signed a Memorandum of Understanding (MoU) with the Government of Andhra Pradesh to establish India's first dedicated Quantum and Artificial Intelligence University campus in Amaravati.
- This landmark collaboration marks a significant step toward strengthening India's deep-tech ecosystem and aligns with Andhra Pradesh's vision to build a globally competitive quantum innovation hub through its proposed Andhra Quantum Mission.
- Amaravati is poised to emerge as the nucleus of the state's ambitious Quantum Valley initiative.
- "The NIELIT Quantum-AI University at Amaravati Quantum Valley will anchor India's next wave of deep-tech talent by converging quantum science, artificial intelligence, and industry-aligned skilling to build a globally competitive innovation ecosystem."
- NIELIT is a premier autonomous scientific society under MeitY, mandated to advance education, skilling, training, research, and capacity building in emerging technologies across India.
- NIELIT has been granted the status of a Deemed-to-be University, with 12 approved campuses across the country.
- Under this framework, the upcoming Amaravati initiative will be developed as a specialized Quantum & AI-focused university campus, dedicated exclusively to frontier domains.

- While anchored within NIELIT's Deemed-to-be University ecosystem, the Amaravati campus will represent India's first institutionally dedicated academic hub focused solely on Quantum and Artificial Intelligence.
- **The proposed campus will focus on cutting-edge domains including:**
  - Quantum Computing and Quantum Algorithms
  - Artificial Intelligence and Machine Learning
  - Quantum Communication and Cybersecurity
  - Quantum Hardware and Systems Engineering
  - High-Performance Computing
  - AI–Quantum Convergence Research
- **The campus will integrate:**
  - Undergraduate, Postgraduate, and PhD programs
  - Advanced research laboratories
  - Industry-linked Centres of Excellence (CoEs)
  - Deep-tech incubation and entrepreneurship support
  - Global academic and R&D collaborations
- This initiative is expected to significantly strengthen India's capabilities in quantum technologies and AI, positioning the country as a global leader in next-generation innovation and deep-tech education.

## About NIELIT

- National Institute of Electronics & Information Technology (NIELIT), an Autonomous Scientific Society of the Ministry of Electronics and Information Technology (MeitY), Government of India, has been a pioneer in skill development and digital empowerment.
- With its extensive presence through 56 NIELIT centers, over 750 accredited institutes, and 9,000+ facilitation centers, NIELIT has skilled and certified millions of students in emerging technologies in the E&ICT domain.
- NIELIT has been conferred the status of "Deemed to be University" under the distinct category by the Ministry of Education having its main campus at Ropar (Punjab) and eleven constituent campuses located in Aizawl, Agartala, Aurangabad, Calicut, Gorakhpur, Imphal, Itanagar, Ajmer (Kekri), Kohima, Patna, and Srinagar, aims to revolutionize higher education in E&ICT domain using digital technologies.

## What is Quantum and AI University?

- A "Quantum and AI University" usually refers to a university (or a specialized institute within a university) that focuses on Quantum technologies and Artificial Intelligence (AI) education, research, and innovation.

### 1. What "Quantum" Means

- In this context, quantum refers to quantum science and technology, which is based on the principles of quantum physics.
- **This includes fields like:**

  **Quantum Computing** – Computers based on quantum mechanics (e.g., work done by IBM and Google)
  - Quantum Communication
  - Quantum Cryptography
  - Quantum Sensors
  - Quantum Information Science
- Quantum computing is different from classical computing because it uses qubits instead of regular bits, allowing certain complex problems to be solved much faster.

## 2. What "AI" Means

- **AI (Artificial Intelligence) is the field of creating machines that can:**
  - Learn from data
  - Recognize patterns
  - Make decisions
  - Understand language
  - See images
- **Examples of AI applications include:**
  - Chatbots like ChatGPT
  - Self-driving car systems (e.g., Tesla AI systems)
  - Image recognition
  - Recommendation systems (like Netflix)

## 3. So What Is a "Quantum and AI University"?

- **It usually means a university that:**
  - Offers degrees in Quantum Computing, AI, Data Science, Machine Learning
  - Conducts research in advanced computing technologies
  - Partners with tech companies
  - Focuses on future technologies
  - Trains students for high-tech careers
- **It could be:**
  - A full university
  - A specialized research institute
  - Or a private tech-focused university

## QUESTIONS

**11.** Consider the following statements regarding the proposed Quantum and Artificial Intelligence University in Amaravati:

1. It is being established through an MoU between NIELIT and the Government of Andhra Pradesh.
2. The initiative aligns with Andhra Pradesh's vision to develop a global quantum innovation hub.
3. The university will function under the Ministry of Science & Technology.

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

**12.** With reference to quantum computing, consider the following statements:

1. Classical computers process information using bits that exist as either 0 or 1.
2. Quantum computers use qubits that can exist in multiple states simultaneously.
3. Quantum systems always follow deterministic laws similar to classical physics.

Which of the statements given above are correct?

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

**13.** Consider the following statements regarding key features of quantum mechanics:

1. Superposition allows a qubit to represent multiple states simultaneously.
2. Entanglement ensures that changes in one qubit affect another instantly regardless of distance.
3. Decoherence strengthens quantum states, making them more stable and measurable.

Which of the statements given above is/are correct?

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

**14.** With reference to applications of quantum technology, consider the following statements:

1. Quantum computing can accelerate drug discovery by simulating molecular behavior.
2. Quantum cryptography enables theoretically unbreakable encryption.
3. Quantum technology is limited to computing and has no applications in disaster management.

Which of the statements given above are correct?

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

**15.** Consider the following statements regarding India's National Quantum Mission (NQM):

1. It is implemented under the Ministry of Science & Technology.
2. The mission aims to develop quantum computers with 50–1000 physical qubits.
3. India is the first country to launch a national quantum mission.
4. The mission includes development of satellite-based secure quantum communication.

Which of the statements given above are correct?

A. 1, 2 and 4 only
C. 2 and 4 only
B. 1 and 3 only
D. 1, 2, 3 and 4

**16.** Which one of the following is the context in which the term **"qubit"** is mentioned?

A. Cloud services
B. Quantum computing
C. Visible light communication technologies
D. Wireless communication technologies

# 4. PM Modi visits Tel Aviv

## 1. Visit Overview

- Prime Minister Narendra Modi will visit Israel on February 25–26.
- This marks his first visit since his historic 2017 trip — the first-ever standalone visit by an Indian Prime Minister to Israel.
- The visit comes amid heightened geopolitical tensions in West Asia, including fragile ceasefire conditions in Gaza and rising US-Iran confrontation.

## 2. Why the Visit Matters Now

- **The region is on edge due to:**
  - A delicate truce in Gaza after the October 7, 2023 Hamas attack and subsequent war.
  - Escalating tensions between Israel and Iran.
  - Growing US military presence near Iran following the June 2025 Israel-Iran conflict.
  - Modi's decision to travel during such instability signals strategic intent and diplomatic balancing by New Delhi.

## 3. Historical Evolution of India-Israel Relations

### Early Recognition and Delay

- India recognized Israel in 1948 but established full diplomatic ties only in 1992.
- A key turning point came during Palestinian leader Yasser Arafat's January 1992 visit to India.
- Arafat publicly supported India's sovereign decision to exchange ambassadors with Israel.
- Diplomatic ties were formally established on January 29, 1992.

## 4. Defence Ties: From Quiet Support to Strategic Partnership

### Early Military Cooperation

- Israel provided limited military support to India during the 1962 India-China war.

### Kargil War Boost

- During the 1999 Kargil conflict, Israel supplied precision-guided munitions to India within days.
- This rapid support strengthened trust between the two nations.

### Political Engagement in 2000

- External Affairs Minister Jaswant Singh led the first bilateral ministerial visit to Israel.
- Home Minister L K Advani also visited.
- The NDA government balanced optics by arranging visits from leaders across political lines.

## 5. Expansion of Strategic Relations (2003–2014)

- Israeli Prime Minister Ariel Sharon visited India in 2003, reinforcing defence ties.
- Under the UPA government, relations continued but sensitive defence cooperation remained low-profile.
- External Affairs Minister S M Krishna visited Israel in 2012, focusing on science, agriculture, and trade rather than defence.

## 6. Modi Era: Bringing Ties into the Open

### Post-2014 Engagement

- Modi met Israeli Prime Minister Benjamin Netanyahu in New York in 2014 — the first such meeting in a decade.
- Several high-level visits followed:
    - **Rajnath Singh (2014)**
    - **President Pranab Mukherjee (2015)**
    - **Sushma Swaraj (2016)**

### Landmark 2017 Visit

- Modi became the first Indian PM to visit Israel.
- He notably skipped Palestine, breaking with previous diplomatic protocol.
- The visit marked a visible strategic shift.

### Reciprocal Visit

- Netanyahu visited India in January 2018.
- Since Netanyahu's re-election, the two leaders have spoken frequently.
- In November 2025, defence agreements were signed and free trade negotiations were launched.

## 7. Expanding Areas of Cooperation

### India and Israel now collaborate across multiple sectors:

- Defence and advanced weapon systems
- Cybersecurity (highlighted during Pegasus revelations)
- Artificial Intelligence
- Agriculture and water technology
- Innovation and startups
- India-Middle East-Europe Economic Corridor (IMEC)

### Israel is considered:

- A critical defence supplier
- A strategic innovation partner
- An important economic stakeholder in regional connectivity projects

## 8. Regional Shifts and Diplomatic Balancing

### Abraham Accords

- Israel's normalization with Arab states under US mediation has reshaped West Asian diplomacy.

### Gaza Conflict

- The October 7 Hamas attack led to a devastating two-year war in Gaza.
- A fragile truce now exists, contingent on Hamas disarmament.

### Iran Factor

- US-Iran tensions have escalated following Israeli strikes and US bombing of Iranian nuclear facilities.
- Iran and other regional powers are closely watching India's engagement with Israel.

## 9. Strategic Risks and Gains for India

### Potential Gains:

- Strengthened defence cooperation.
- Greater leverage in emerging regional trade corridors.
- Reinforcement of India's image as an independent strategic actor.

### Potential Risks:

- Strain in relations with Iran.
- Sensitivities among Arab partners.
- Domestic political implications.

## 10. Political Significance for Netanyahu

- Netanyahu, facing opposition pressure at home, is projecting Modi's visit as a diplomatic achievement.
- The visit underscores Israel's continued global partnerships despite regional instability.

## QUESTIONS

**17.** Consider the following statements regarding the evolution of India–Israel diplomatic relations:

1. India recognised Israel in 1950 but established full diplomatic relations only in 1992.
2. The delay in establishing full diplomatic ties was partly due to India's support for the Palestinian cause and Cold War alignments.

3. Full diplomatic relations were established immediately after Israel supplied arms to India during the 1962 war.

Which of the statements given above is/are correct?

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

**18.** With reference to India–Israel relations in the defence and strategic domain, consider the following statements:

1. Israel supplied precision-guided munitions to India during the Kargil conflict.
2. Israel is among India's top defence suppliers.
3. Defence cooperation between the two countries began only after the 2017 visit of the Indian Prime minister.

Which of the statements given above are correct?

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

**19.** Consider the following statements regarding recent geopolitical developments affecting India–Israel relations:

1. The Abraham Accords led to normalization of relations between Israel and several Arab nations.
2. The October 2023 Hamas attack triggered a prolonged conflict in Gaza.
3. The India–Middle East–Europe Economic Corridor (IMEC) excludes Israel due to regional tensions.

Which of the statements given above is/are correct?

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

**20.** Consider the following countries:

1. Lebanon
2. Syria
3. Jordan
4. Egypt
5. Iran

Which of the countries listed above share a land border with Israel?

A. 1, 2, 3 and 4 only
C. 2, 4 and 5 only
B. 1, 3 and 5 only
D. 1, 2, 3, 4 and 5

**21.** Consider the following statements:

**Statement I:** Israel has established diplomatic relations with some Arab States.

**Statement II:** The 'Arab Peace Initiative' mediated by Saudi Arabia was signed by Israel and the Arab League.

Which one of the following is correct in respect of the above statements?

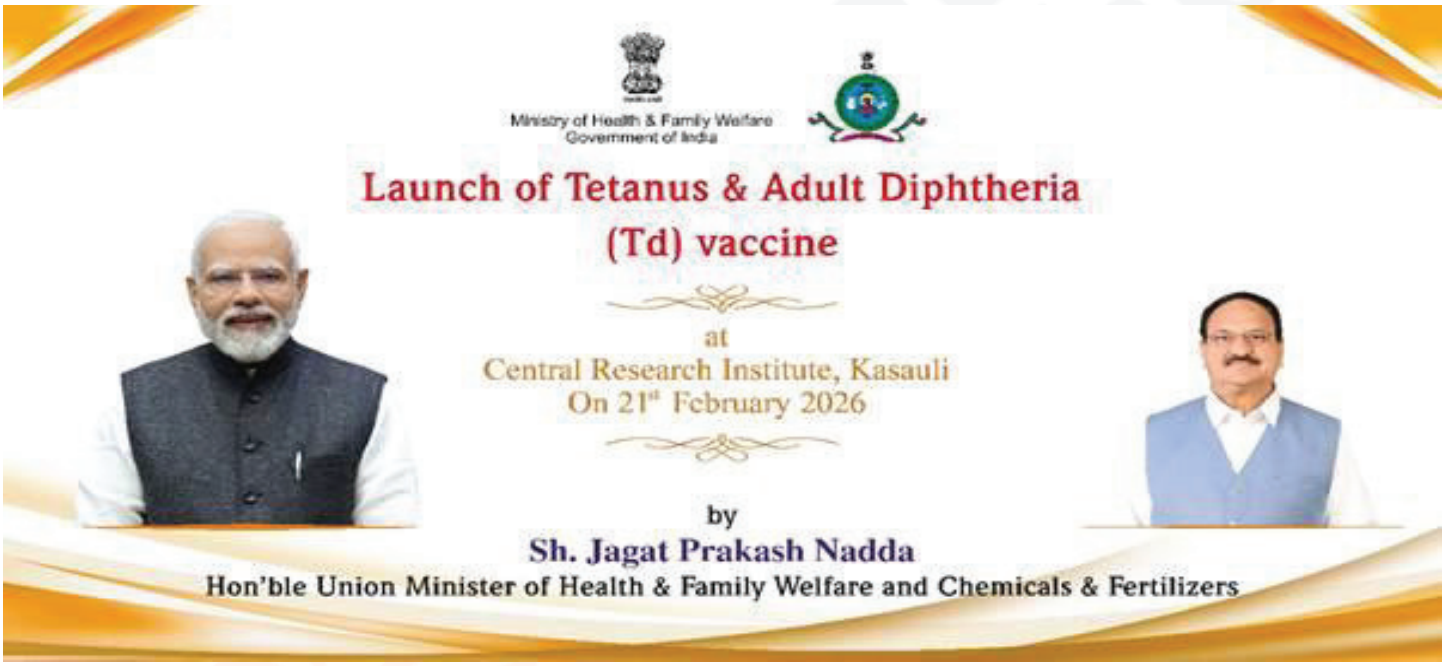
A. Both Statement I and Statement II are correct and Statement II is the correct explanation for Statement I.

B. Both Statement I and Statement II are correct and Statement II is not the correct explanation for Statement I.

C. Statement I is correct but Statement II is incorrect.

D. Statement I is incorrect but Statement II is correct.

# 5. Tetanus and adult Diphtheria (Td) vaccine under the Universal Immunisation Programme (UIP)




- India has taken a major public health step by introducing the indigenously manufactured Tetanus and adult Diphtheria (Td) vaccine under the Universal Immunisation Programme (UIP).
- The vaccine was formally launched by Union Health Minister J. P. Nadda at the Central Research Institute (CRI), Kasauli.
- This move replaces the earlier Tetanus Toxoid (TT) vaccine and marks a strategic shift toward closing long-standing gaps in adult immunisation and waning immunity against diphtheria.

## 1. Why the Shift from TT to Td Matters

### Waning Immunity Over Time

- Childhood DPT vaccinations significantly reduced tetanus and diphtheria cases.
- However, immunity—especially against diphtheria—declines without booster doses.
- Many adults remain unknowingly susceptible due to lack of periodic boosters.

### WHO Recommendation

- In 2006, the World Health Organization (WHO) recommended replacing TT with Td.
- This guidance was reaffirmed in the 2017 Tetanus Vaccine Position Paper.
- India's National Technical Advisory Group on Immunization (NTAGI) endorsed the transition across age groups, including pregnant women.

### Dual Protection Advantage

- TT protected only against tetanus.
- Td protects against both tetanus and diphtheria.
- This ensures sustained immunity and reduces risk of diphtheria outbreaks among adolescents and adults.

## 2. Current Disease Burden: Why Vaccines Still Matter

### Tetanus

- Causes painful muscle stiffness, spasms, breathing difficulties, and can be fatal.
- Though maternal and neonatal tetanus cases have declined globally, thousands still die annually.
- Newborns in low- and middle-income countries remain particularly vulnerable.

### Diphtheria

- Can cause airway obstruction, heart failure, paralysis, and death.
- Outbreaks occur where vaccine coverage drops or immunity wanes.

### Persistent Deaths Despite Vaccines

- Low adult booster coverage.
- Poor wound management practices.
- Misconception that childhood vaccination provides lifelong protection.
- Limited prioritisation of preventive healthcare in adulthood.

## 3. India's Progress and Remaining Gaps

- Under the Universal Immunisation Programme, widespread childhood immunisation significantly reduced disease incidence.
- Pregnant women routinely receive tetanus-containing vaccines.
- **However:**
    - Non-pregnant adults rarely receive boosters.
    - Immunity weakens approximately 10 years after the last dose.
    - Many adults cannot recall their vaccination history.

## 4. High-Risk Populations

- Agricultural workers
- Construction workers
- Daily wage labourers
- Migrant workers
- Elderly individuals
- These groups face higher exposure to contaminated wounds and often lack access to routine preventive healthcare.

## 5. Science Behind the Td Vaccine

- **Contains:**
  - Purified tetanus toxoid
  - Reduced-dose diphtheria toxoid
  - Adsorbed onto aluminium phosphate (adjuvant) to enhance immune response.
  - Administered intramuscularly in the deltoid muscle.
  - Provides safe and effective dual immunity.

## 6. Importance of Proper Wound Care

### Tetanus commonly follows:

- Puncture wounds
- Animal bites
- Soil-contaminated injuries

### Key preventive measures:

- Immediate cleaning of wounds
- Removal of damaged tissue if necessary
- Timely booster dose if vaccination is outdated

### Misconceptions to address:

- Tetanus does not occur only from rusty nails.
- Antibiotics alone do not prevent tetanus.
- Home remedies are not sufficient.

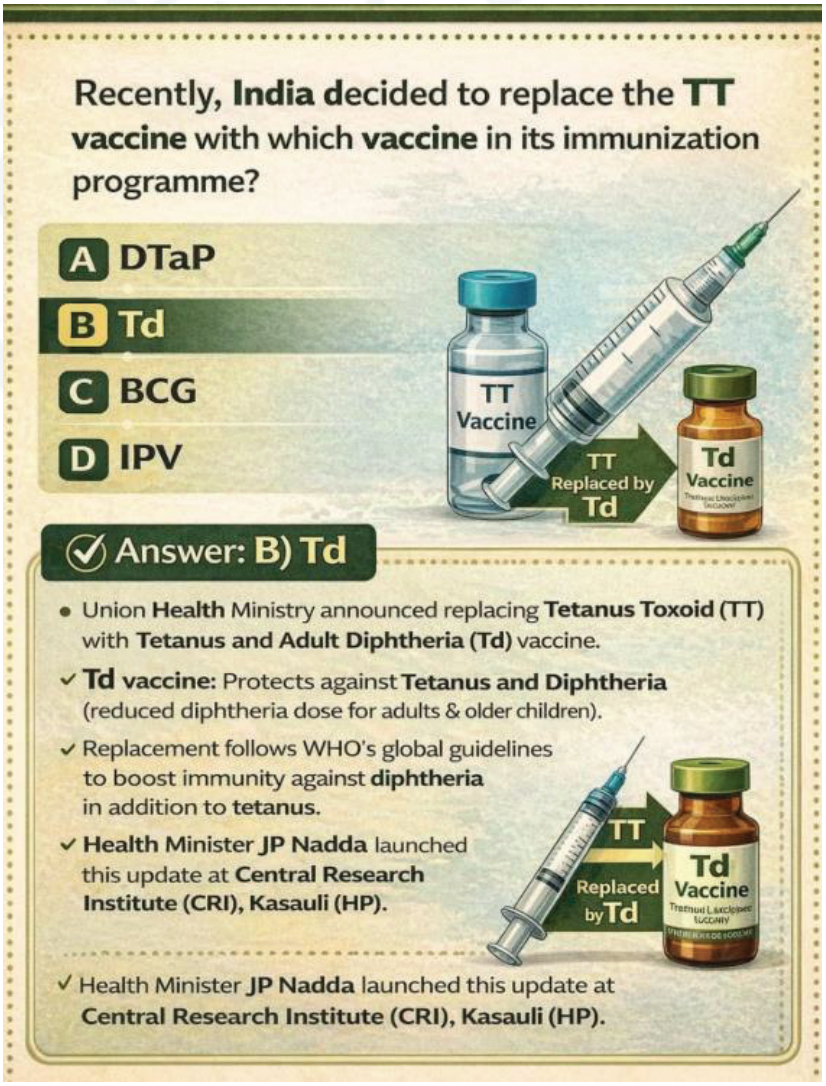
## 7. Production and Supply Milestones

### The Central Research Institute will:

- Supply 55 lakh Td doses to UIP by April 2026.
- Gradually scale up production in subsequent years.
- Manufacture under Good Manufacturing Practices (GMP) standards.
- Be the first government institute to produce vaccines under GMP compliance.

### The CRI has:

- Completed developmental studies.
- Secured regulatory approvals and marketing authorisation.
- Initiated commercial manufacturing.



## 8. Strengthening India's Vaccine Leadership

- India is widely recognised as the "pharmacy of the world."
- It is among the largest global vaccine manufacturers.
- During the COVID-19 pandemic, India developed two indigenous vaccines within nine months and administered over 220 crore doses, including boosters.
- The Td launch strengthens national health security and public-sector manufacturing capacity.

## 9. Universal Immunisation Programme: Global Scale

- The Universal Immunisation Programme is the world's largest immunisation programme.
- Provides 11 vaccines protecting against 12 vaccine-preventable diseases.
- The introduction of Td enhances the programme's comprehensiveness and adult coverage.

## 10. Roadmap for Better Adult Protection

### Experts recommend:

- Integrating Td boosters every 10 years into routine adult health check-ups.
- Workplace vaccination drives for high-risk occupations.
- Digital reminder systems for booster doses.
- Training healthcare workers to assess tetanus risk in all wound cases.
- Public awareness campaigns correcting myths about tetanus and diphtheria.

## QUESTIONS

**22.** Consider the following statements regarding the Tetanus and Adult Diphtheria (Td) vaccine:

1. The Td vaccine provides protection against both tetanus and diphtheria.
2. The diphtheria component in Td contains a reduced antigen dose suitable for adults and adolescents.
3. The Td vaccine replaces the DPT vaccine in childhood immunization schedules.

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

**23.** Consider the following statements regarding India's immunization ecosystem:

1. The U-WIN platform digitally tracks vaccination events to ensure beneficiaries receive scheduled doses.
2. The Universal Immunisation Programme (UIP) is the world's largest immunization programme.
3. UIP currently provides vaccines protecting against 12 vaccine-preventable diseases.
4. The introduction of the Td vaccine strengthens adult immunization coverage under UIP.

Which of the statements given above are correct?

A. 1 and 2 only
B. 1, 2 and 4 only
C. 2, 3 and 4 only
D. 1, 2, 3 and 4

**24.** Consider the following statements regarding India's immunization strategy:

1. The World Health Organization has recommended replacing the Tetanus Toxoid (TT) vaccine with the Td vaccine.
2. India's National Technical Advisory Group on Immunization (NTAGI) has recommended Td vaccination for all age groups, including pregnant women.
3. The Td vaccine has been inducted into the Universal Immunization Programme (UIP).

Which of the statements given above is/are correct?

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

**25.** With reference to tetanus, consider the following statements:

1. Tetanus is a communicable disease transmitted through respiratory droplets.
2. It is caused by spores of *Clostridium tetani* commonly found in soil and animal feces.
3. Recovery from tetanus infection provides lifelong immunity.

Which of the statements given above are correct?

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

**26.** With reference to maternal and neonatal tetanus (MNT), consider the following statements:

1. Neonatal tetanus commonly occurs due to the use of non-sterile instruments to cut the umbilical cord.
2. Maternal vaccination plays a key role in preventing neonatal tetanus.
3. India achieved elimination of neonatal tetanus by reducing cases to zero nationwide.

Which of the statements given above are correct?

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

**27.** Consider the following diseases:

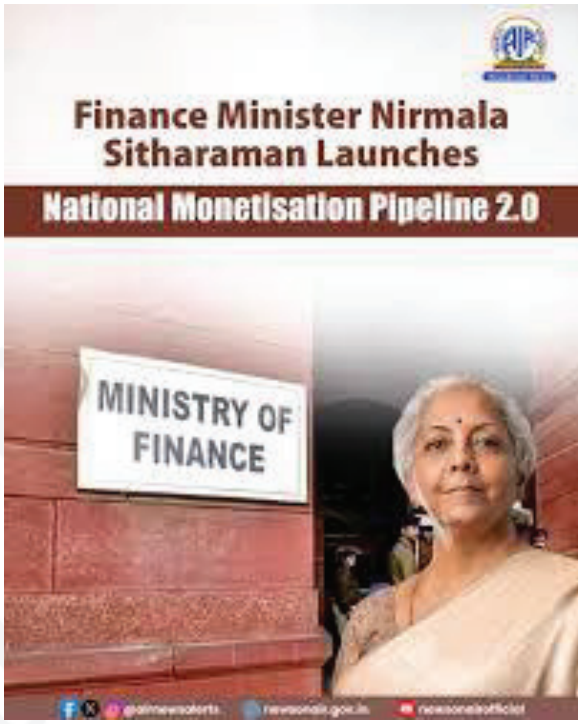
1. Diphtheria
2. Chickenpox
3. Smallpox

Which of the above diseases has/have been eradicated in India?

A. 1 and 2 only
C. 1, 2 and 3
B. 3 only
D. None

# 6. Union Finance Minister Smt. Nirmala Sitharaman launches National Monetisation Pipeline 2.0 (NMP 2.0)

- National Monetisation Pipeline 2.0 Launched: Rs. 16.72 Lakh Crore Target Set for FY26–FY30.
- Union Minister for Finance and Corporate Affairs Nirmala Sitharaman today launched the second phase of India's asset monetisation programme — NMP 2.0, marking a major step toward sustainable infrastructure financing under the Union Budget 2025–26.
- Developed by NITI Aayog in consultation with infrastructure ministries, the new pipeline aims to unlock significant capital through structured monetisation of operating public infrastructure assets.




## Key Highlights of NMP 2.0

- Total Monetisation Potential: Rs. 16.72 lakh crore
- Private Sector Investment Component: Rs. 5.8 lakh crore
- Implementation Period: FY 2026–FY 2030
- Scale: 2.6 times larger than NMP 1.0 target
- Expected Major Beneficiary: Consolidated Fund of India

## Success of NMP 1.0 Sets the Foundation

- Nearly 90% of Rs. 6 lakh crore target achieved under NMP 1.0.
- Recognised as the first large-scale structured asset monetisation pipeline.
- Best practices and lessons learned to guide implementation of NMP 2.0.
- **Focus on:**
  - Process simplification
  - Standardisation
  - Time-bound execution

## Vision & Strategic Objective

- Aligned with the mission of Viksit Bharat.
- **Designed to:**
  - Recycle productive public assets
  - Unlock capital for fresh infrastructure projects
  - Boost CAPEX without increasing budgetary pressure
  - Sustain India's growth momentum

- The Finance Minister emphasised that ministries should aim to exceed the ambitious Rs. 16.7 lakh crore target through proactive execution.

## Sectors Covered Under NMP 2.0

- The monetisation pipeline spans key infrastructure sectors:
  - Highways (including MMLPs and ropeways)
  - Railways
  - Power
  - Petroleum & Natural Gas
  - Civil Aviation
  - Ports
  - Warehousing & Storage
  - Urban Infrastructure
  - Coal
  - Mines
  - Telecom
  - Tourism

## Monetisation Framework

### NMP 2.0 broadly follows the asset monetisation approach of NMP 1.0, including:

- Transfer of assets for limited periods
- Divestment of listed entities
- Securitisation of cash flows
- Strategic commercial auctions
- PPP concessions
- Infrastructure Investment Trusts (InvITs)
- The instrument chosen will depend on sector, asset nature, market timing, and investor profile.

## Allocation of Monetisation Proceeds

- Proceeds from monetisation projects will flow under four heads:

### 1. Consolidated Fund of India

- Revenues from projects implemented by Central Ministries
- Includes premium, lease rental, royalty, revenue share

### 2. PSU / Port Authorities

- Monetisation proceeds retained by respective PSUs or Port Authorities

### 3. State Consolidated Fund

- Revenues such as royalty payments from mines and coal projects

### 4. Direct Private Investment

- Capital investment by private players in projects requiring construction or major maintenance

## Institutional Oversight

- An empowered Core Group of Secretaries on Asset Monetisation (CGAM) under the Cabinet Secretary will monitor progress.
- Multi-stakeholder consultations led by NITI Aayog and the Ministry of Finance shaped the framework.
- The programme is described as a “whole-of-government initiative.”

## Expected Impact

- Improved infrastructure quality and O&M standards
- Efficient capital recycling
- Reduced fiscal burden on government
- Increased investor participation
- Accelerated infrastructure development

## National Monetisation Pipeline 1.0

- National Monetisation Pipeline (NMP) 1.0 is an initiative launched by the Government of India in 2021 to unlock the value of existing public infrastructure assets by leasing them to private players for a fixed period.

### Objective

- Mobilize funds for new infrastructure development.
- Improve efficiency in asset utilization.
- Support the National Infrastructure Pipeline (NIP) goals.

### Key Features

- **Time Period:** FY 2022–FY 2025
- **Target Amount**: Rs. 6 lakh crore
- **Model Used:** Asset monetisation through:

## Toll-Operate-Transfer (TOT)

- Infrastructure Investment Trusts (InvITs)
- Public-Private Partnerships (PPP)

### Sectors Covered

- Roads (National Highways)
- Railways
- Airports
- Ports
- Power transmission
- Gas pipelines
- Telecom
- Warehousing
- Mining
- Stadiums

### Major implementing agencies include:

- National Highways Authority of India (NHAI)
- Indian Railways
- Power Grid Corporation of India Limited

### How It Works

- The government retains ownership of assets.
- Private entities get the right to operate and earn revenue for a specified concession period.
- Revenue generated is reinvested in new infrastructure projects.

### Importance

- Reduces pressure on government borrowing.
- Attracts private sector investment.

- Enhances asset productivity.
- Helps achieve the $5 trillion economy vision.

## QUESTIONS

**28.** Consider the following statements regarding the National Monetisation Pipeline (NMP) 2.0:

1. NMP 2.0 aims to monetize operational public assets to finance new infrastructure creation.
2. It focuses on asset recycling to unlock capital from brownfield assets.
3. The programme increases government budgetary expenditure to build new infrastructure.

Which of the statements given above is/are correct?

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

**29.** With reference to the governance and implementation framework of NMP 2.0, consider the following statements:

1. Progress under NMP 2.0 is monitored by the Core Group of Secretaries on Asset Monetisation (CGAM).
2. Proceeds from monetisation projects may be credited to the Consolidated Fund of India or relevant PSU/state funds depending on the implementing agency.
3. The programme is implemented solely by NITI Aayog without involvement of ministries or PSUs.

Which of the statements given above are correct?

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

**30.** Consider the following statements regarding scope and financing under NMP 2.0:

1. The pipeline covers sectors such as roads, railways, ports, telecom, and power.
2. Monetisation transactions may use instruments such as PPP concessions and Infrastructure Investment Trusts (InvITs).
3. NMP 2.0 excludes private sector investment to retain public ownership of infrastructure assets.

Which of the statements given above is/are correct?

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

**31.** Consider the following statements:

1. The National Monetisation Pipeline (NMP) estimates that for the period 2022–2025, the top three sectors in terms of monetisation potential are roads, railways, and oil & gas pipelines.

2. Under the National Monetisation Pipeline, the instruments used for asset monetisation include Public-Private Partnership (PPP) concessions and Infrastructure Investment Trusts (InvITs).

Which of the statements given above is/are correct?

A. 1 only
C. Both 1 and 2
B. 2 only
D. Neither 1 nor 2

**32.** Consider the following statements regarding the **National Monetisation Pipeline (NMP)**:

1. The NMP aims to unlock about ₹6 lakh crore by leasing core infrastructure assets during FY 2022–25.
2. Monetisation under the NMP includes disinvestment of non-core public sector assets.
3. The pipeline is designed to support investments under the National Infrastructure Pipeline (NIP).
4. The timeline of the NMP is aligned with the implementation period of the NIP.

Which of the statements given above are correct?

A. 1 and 3 only
C. 2 and 4 only
B. 1, 3 and 4 only
D. 1, 2, 3 and 4

# 7. The silent splendour of Hoysalas

- **A quieter Hoysala trail:** Across the farmlands of Hassan district, Mandya district and Mysuru district stand remarkable yet lesser-known Hoysala-era temples and basadis built between the 11$^{th}$ and 13$^{th}$ centuries, extending beyond celebrated centres like Belur, Halebidu and Somanathapura.

- **Distinctive Hoysala style:** Crafted from soft soapstone, these shrines rest on star-shaped jagatis (platforms) and feature ekakuta, dvikuta and trikuta sanctum plans. Their sculpted walls depict celestial dancers, epic narratives and intricately carved pillars.
- **Koravangala's trio of temples:** Once a vibrant outpost, Koravangala houses the 12th-century Bucheshwara Temple (1173 CE), built by Buchi in honour of King Veera Ballala II, alongside the earlier Nageshwara Temple and Govindeshwara Temple (1160 CE), reflecting an early phase of Hoysala artistry.
- **Javagal's architectural jewel:** The Lakshminarasimha Temple (1250 CE), built during the reign of King Vira Someshwara, is a trikuta shrine famed for its refined elephant friezes and later Vijayanagara-era gateway.
- **Early ambition at Doddagaddavalli:** The Lakshmidevi Temple (1114 CE), commissioned by merchant Sahaja Devi, is among the earliest surviving Hoysala temples. Its four-shrine layout honours Lakshmi, Shiva, Vishnu and Kali, and includes a rare Mahakali shrine guarded by skeletal betalas, reflecting tantric traditions.
- **Water architecture marvel:** The 12th-century Hulikere Kalyani, a stepped tank built around 1160 CE by Lattayya under Narasimha I, features symmetrically descending steps and 26 shrines, symbolically linked to zodiac signs and nakshatras.
- **Jain serenity in Halebidu:** Near the grand Hoysaleswara Temple lies the Jain Basadi complex — Parshvanatha Basadi (1133 CE), Shantinatha Basadi (1192 CE) and Adinatha Basadi — embodying Jain ideals of restraint and contemplative design.
- **Epic carvings in stone:** The Hoysaleswara Temple showcases vivid 12th-century depictions of the Ramayana, including dramatic battle scenes between Rama and Ravana.
- **Golden-age grandeur:** The Veera Narayana Temple (c.1200 CE), built by King Veera Ballala II, is renowned for its expansive ranga-mandapa and rows of uniquely carved elephants.
- **Rare Panchakuta design:** The Panchalingeshwara Temple stands out for its unusual five-shrine (Panchakuta) layout — five east-facing Shiva sanctums aligned in a row and linked by a pillared hall.
- **Living legacy:** Together, these monuments highlight a broader Hoysala imagination — where devotion, sculpture and architecture converge — continuing to captivate visitors centuries after their creation.

## Hoysala Empire

- The Hoysala Empire was a powerful South Indian dynasty that ruled large parts of present-day Karnataka, and at times parts of Tamil Nadu and Andhra Pradesh, between the 10th and 14th centuries CE.
- **Capital**
  - **Initially:** Belur
  - **Later:** Halebidu (formerly called Dwarasamudra)
- **Important Rulers**
- **Vishnuvardhana (r. 1108–1152 CE)** – Expanded the kingdom and commissioned many famous temples.
- **Ballala II** – Made the empire a dominant power in South India.

## Architecture (Main Contribution)

- The Hoysalas are most famous for their intricate temple architecture, known for:
  - Star-shaped platforms
  - Detailed stone carvings
  - Soapstone (chloritic schist) construction
  - Sculptures of dancers, musicians, animals, and Hindu deities

- **Famous Temples:**
  - Chennakesava Temple
  - Hoysaleswara Temple
  - Keshava Temple

### Religion

- Initially supported Jainism
- Later strongly promoted Hinduism (especially Vaishnavism and Shaivism)

### Decline

- The empire declined in the 14th century due to invasions by the Delhi Sultanate and internal conflicts. Eventually, their territories were absorbed by the Vijayanagara Empire.

## QUESTIONS

**33.** Consider the following statements regarding Hoysala temple architecture:

1. Hoysala temples were commonly built using soapstone, enabling intricate carvings.
2. These temples often stand on star-shaped platforms known as jagatis.
3. Hoysala temples typically follow only a single-sanctum (ekakuta) plan.

Which of the statements given above are correct?

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

**34.** With reference to Hoysala-era monuments, consider the following statements:

1. The Lakshmidevi Temple at Doddagaddavalli is among the earliest surviving Hoysala temples.
2. The Hulikere Kalyani is a stepped tank associated with Hoysala water architecture.
3. The Jain Basadi complex near Halebidu reflects the empire's early association with Jainism.

Which of the statements given above are correct?

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

**35.** Consider the following statements regarding the Hoysala Empire:

1. The Hoysala capital shifted from Belur to Halebidu (Dwarasamudra).
2. King Vishnuvardhana expanded the empire and commissioned major temples.
3. The empire declined primarily due to European colonial expansion.

Which of the statements given above is/are correct?

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

# 8. India-Brazil critical minerals MoU

- During President Luiz Inacio Lula da Silva's state visit to India, the two countries signed a non-binding MoU to cooperate across the entire critical minerals value chain — from exploration to refining — to strengthen supply chains and competitiveness.

## 1. What Is India Doing on Critical Minerals?

### A. Building Domestic Capacity

- National Critical Mineral Mission (approved Jan 2025)
- Covers exploration, mining, beneficiation, processing, recycling
- **Duration:** 2024–25 to 2030–31
    - Published a list of 30 critical minerals (July 2023)
    - Used Mines and Minerals Development and Regulation Amendment Act 2023
    - Gives Centre greater power to auction critical mineral blocks
    - Multiple auction rounds completed by Sept 2025

### B. Expanding Overseas Partnerships

- Through Khanij Bidesh India Ltd (KABIL)
- Exploring acquisitions and partnerships
- Active in Argentina and Chile

### C. Policy & Trade Measures

- **Reduced customs duties on:**
  - Certain critical minerals
  - Scrap and waste for mineral recovery
  - **Aim:** Lower input costs and improve domestic processing

### D. Boosting Advanced Manufacturing

- Plan to start domestic rare-earth permanent magnet production by end-2026
- **Objective:**
  - Reduce imports (especially for EVs and defence)
  - Strengthen strategic autonomy

## 2. What Does the MoU Mean for India?

### A. Stronger Bargaining Power

- More sourcing options → better negotiating leverage
- Reduces risk of dependence on limited suppliers
- Helps prevent price exploitation

### B. Greater Investment Confidence

- Signals stable supply chains
- Encourages companies to invest in:
- Processing
- Manufacturing
- Reduces fear of export bans or geopolitical shocks

### C. Easier Access to Global Markets

- Potential harmonisation of environmental standards
- Helps Indian firms meet sourcing transparency norms
- Improves export competitiveness

## 3. Does the MoU Connect with Pax Silica?

- India joined Pax Silica on Feb 20, 2026
- Pax Silica aims to secure the "silicon stack" supply chain (raw materials → AI hardware → data centres)
- **Key Clarifications:**
  - The MoU complements Pax Silica goals (secure mineral access)
  - Brazil is not a Pax Silica member
  - MoU projects are not formally part of Pax Silica

## 4. What Does the MoU Mean for Brazil?

### A. Vast Mineral Reserves

- **According to the United States Geological Survey, Brazil has:**
  - 21 million tonnes rare-earth oxide equivalent
  - 2.7 billion tonnes bauxite

- 270 million tonnes manganese
- 0.4 million tonnes lithium

### B. Economic & Strategic Gains

- **Attract Indian:**
  - Capital
  - Buyers
  - Long-term purchase contracts
  - Makes new mines & processing plants easier to finance
  - Reduces reliance on speculative projects

### C. Moving Up the Value Chain

- **Focus on:**
  - Processing
  - Refining
  - Recycling
  - Helps Brazil move beyond exporting raw ores
  - Strengthens Brazil's own negotiating power globally

## Overall Significance

### For India:

- Supply diversification
- Strategic autonomy
- Stronger manufacturing ecosystem
- Better global bargaining power

### For Brazil:

- Investment inflow
- Industrial upgrading
- Stable export markets
- Enhanced global leverage

## QUESTIONS

**36.** Consider the following statements regarding the National Critical Mineral Mission (NCMM):

1. The mission was launched in 2025 for a seven-year period ending in 2030–31.
2. It aims to secure supply chains, promote mineral value chains, and strengthen technological independence.
3. The mission focuses only on domestic mining and excludes international sourcing.

Which of the statements given above are correct?

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

**37.** With reference to critical minerals, consider the following statements:

1. Critical minerals are essential for economic development, clean energy technologies, and national security.
2. Countries identify critical minerals based on their national priorities and supply vulnerabilities.
3. India identified 30 critical minerals in 2023.

Which of the statements given above are correct?

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

**38.** Consider the following statements regarding the role of critical minerals in clean energy technologies:

1. Lithium, cobalt, and nickel are essential for electric vehicle batteries and energy storage systems.
2. Silicon, gallium, and indium are used in photovoltaic cells for solar energy.
3. Neodymium and dysprosium are important for high-performance magnets used in wind turbines.

Which of the statements given above are correct?

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

**39.** Consider the following statements regarding India's policy framework for critical minerals:

1. The Mines and Minerals (Development and Regulation) Amendment Act empowers the Central Government to auction mining leases for certain critical minerals.
2. The National Critical Mineral Mission focuses only on extraction and excludes recycling and research activities.
3. Critical minerals are considered strategic because their supply chains are vulnerable and essential for clean energy and advanced technologies.

Which of the statements given above are correct?

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

**40.** Consider the following statements:

1. India has joined the Minerals Security Partnership (MSP) as a member.
2. India is a resource-rich country in all the 30 critical minerals that it has identified.
3. The Parliament in 2023 amended the Mines and Minerals (Development and Regulation) Act, 1957, empowering the Central Government to exclusively auction mining leases and composite licences for certain critical minerals.

Which of the statements given above are correct?

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

## ANSWER KEY AND EXPLANATION

**1. B 1 and 2 only**

- **Statement 1 — Correct:** UAPA is India's primary anti-terror law enabling banning of organisations, asset seizure, and preventive detention provisions.
- **Statement 2 — Correct:** The NIA Act (2008) established the National Investigation Agency to investigate terror offences across states.
- **Statement 3 — Incorrect:** The NSA allows preventive detention for threats to national security or public order, not only during wartime.

**2. A 1, 2 and 4 only**

- **Statement 1 — Correct:** MAC enables real-time intelligence sharing under the Intelligence Bureau.
- **Statement 2 — Correct:** NTRO provides technical intelligence including cyber surveillance and satellite-based monitoring.
- **Statement 3 — Incorrect:** Border guarding is primarily done by forces like BSF and ITBP; NSG is an elite counterterror and hostage rescue force.
- **Statement 4 — Correct:** ATS units operate at the state level and coordinate with central agencies on counterterror operations.

**3. A 1 and 2 only**

- **Statement 1 — Correct:** PRAHAAR marks a paradigm shift toward proactive and intelligence-led counterterrorism.
- **Statement 2 — Correct:** One pillar explicitly focuses on aligning and shaping global counter-terror efforts.
- **Statement 3 — Incorrect:** The policy emphasizes proportionate response, rule of law, and coordinated security—not military retaliation as the primary response.

**4. A 1, 2 and 4 only**

- **Statement 1 — Correct:** MAC facilitates real-time intelligence sharing.
- **Statement 2 — Correct:** Local police are first responders; CAPFs and specialized state CT forces support them.
- **Statement 3 — Incorrect:** NSG is an elite intervention force; investigation is primarily handled by NIA and police.
- **Statement 4 — Correct:** NIA works with state police to ensure effective prosecution and legal deterrence.

**5. A 1, 2 and 4 only**

- **Statement 1 — Correct:** PRAHAAR emphasizes human rights, due process, and adherence to national and international legal frameworks.
- **Statement 2 — Correct:** It promotes community-based de-radicalization involving religious leaders, NGOs, and civil society.
- **Statement 3 — Incorrect:** The policy adopts a graded approach—rehabilitation for minor cases and legal action for hardcore elements.
- **Statement 4 — Correct:** It includes measures to curb prison radicalisation by segregating ideologues from vulnerable inmates.

**6. A 1 and 2 only**

- **Statement 1 — Correct:** CBSE provides a 15-hour AI module from Class VI and AI as an optional subject from Class IX–XII.
- **Statement 2 — Correct:** DIKSHA uses AI tools like keyword search and read-aloud features for accessibility.
- **Statement 3 — Incorrect:** YUVAi targets students from Classes 8–12 and promotes inclusive AI learning, not only engineering students.

**7. A 1 and 2 only**

- **Statement 1 — Correct:** Ethical principles like fairness, transparency, and human oversight are core to MANAV.
- **Statement 2 — Correct:** Sovereignty extends to data security, domestic compute capacity, and indigenous AI development.
- **Statement 3 — Incorrect:** Accessible AI aims to democratize access and inclusion, not restrict it.

**8. D 1, 2 and 3**

- **Statement 1 — Correct:** The IndiaAI Mission embeds governance, monitoring, and responsible development standards.
- **Statement 2 — Correct:** AI governance guidelines emphasize trust, fairness, accountability, and legality.
- **Statement 3 — Correct:** The 2026 amendment rules define and regulate synthetic content to address risks like deepfakes.

**9. A 1 and 2 only**

- **Statement 1 — Correct:** These platforms democratize access to GPUs and computing infrastructure.
- **Statement 2 — Correct:** IndiaAI Kosh provides datasets and models for AI innovation.
- **Statement 3 — Incorrect:** The National Supercomputing Mission supports research, academia, science, and national capacity building—not only defence.

**10. A 1, 2 and 4 only**

- **Statement 1 — Correct:** Bhashini enables translation and speech tools in multiple Indian languages.
- **Statement 2 — Correct:** BharatGen AI is a government-funded multimodal LLM supporting Indian languages.
- **Statement 3 — Incorrect:** Sarvam AI's sovereign LLM aims to enhance governance and public service delivery, not only private use.
- **Statement 4 — Correct:** AI Data Labs provide foundational training under the IndiaAI Mission.

**11. A 1 and 2 only**

- **Statement 1 — Correct:** The MoU was signed between NIELIT (MeitY) and the Government of Andhra Pradesh.
- **Statement 2 — Correct:** It aligns with the Andhra Quantum Mission and Quantum Valley initiative.
- **Statement 3 — Incorrect:** NIELIT operates under the Ministry of Electronics & Information Technology (MeitY), not the Ministry of Science & Technology.

**12. A 1 and 2 only**

- **Statement 1 — Correct:** Classical computing uses bits representing 0 or 1.
- **Statement 2 — Correct:** Qubits can exist in superposition (multiple states simultaneously).
- **Statement 3 — Incorrect:** Quantum systems exhibit probabilistic behavior, unlike deterministic classical physics.

**13. A 1 and 2 only**

- **Statement 1 — Correct:** Superposition allows qubits to exist in multiple states simultaneously.
- **Statement 2 — Correct:** Entangled qubits share a linked state; changes affect each other instantly.
- **Statement 3 — Incorrect:** Decoherence weakens quantum states by collapsing them into classical measurable states.

**14. A 1 and 2 only**

- **Statement 1 — Correct:** Quantum simulations help in drug development and protein folding research.
- **Statement 2 — Correct:** Quantum cryptography provides highly secure encryption.
- **Statement 3 — Incorrect:** Quantum technology can improve climate modelling and disaster prediction.

**15. A 1, 2 and 4 only**

- **Statement 1 — Correct:** NQM is administered by the Department of Science & Technology under the Ministry of Science & Technology.
- **Statement 2 — Correct:** The mission targets intermediate-scale quantum computers with 50–1000 qubits.
- **Statement 3 — Incorrect:** India is the seventh country to launch a dedicated quantum mission.
- **Statement 4 — Correct:** Secure satellite-based quantum communication is a key objective.

**16. B Quantum computing**

- A **qubit** (quantum bit) is the basic unit of information in **quantum computing**. Unlike a classical bit, which can be either 0 or 1, a qubit can exist in a state of **superposition**, meaning it can represent 0 and 1 simultaneously. This property allows quantum computers to perform complex calculations much faster than classical computers.

**17. A 1 and 2 only**

- **Statement 1 — Correct:** India recognised Israel in 1950 but formal diplomatic relations were established on January 29, 1992.
- **Statement 2 — Correct:** Support for Palestine, Cold War alignments, domestic sensitivities, and West Asia interests delayed ties.
- **Statement 3 — Incorrect:** Despite defence cooperation (including 1962 support), full diplomatic ties were established only in 1992.

**18. A 1 and 2 only**

- **Statement 1 — Correct:** Israel provided precision-guided munitions during the 1999 Kargil conflict.
- **Statement 2 — Correct:** Israel remains one of India's major defence suppliers.
- **Statement 3 — Incorrect:** Defence cooperation predates 2017 and existed even before formal diplomatic ties.

**19. A 1 and 2 only**

- **Statement 1 — Correct:** The Abraham Accords normalized Israel's ties with several Arab countries.
- **Statement 2 — Correct:** The October 7, 2023 Hamas attack triggered the Gaza conflict.
- **Statement 3 — Incorrect:** Israel is a key node in IMEC; it is not excluded.

**20. A 1, 2, 3 and 4 only**

- **Lebanon** — shares Israel's northern border.
- **Syria** — borders Israel to the northeast (Golan Heights region).
- **Jordan** — borders Israel to the east.
- **Egypt** — borders Israel to the southwest (Sinai Peninsula).
- **Iran** — does **not** share a border with Israel; Jordan lies between them.

Therefore, only countries **1, 2, 3, and 4** share land borders with Israel.

**21. C Statement I is correct but Statement II is incorrect.**

- **Statement I — Correct:**

  Israel has established diplomatic relations with several Arab countries over time.

  - **Egypt** became the first Arab state to recognize Israel through the **Camp David Accords (1979)**.
  - **Jordan** signed a peace treaty and normalized relations in **1994**.
  - Under the **Abraham Accords (2020)**, the **United Arab Emirates (UAE)** and **Bahrain** established full diplomatic ties with Israel.
  - **Morocco** and **Sudan** also moved toward normalization in 2020.

  These developments demonstrate Israel's expanding diplomatic engagement with Arab states.

- **Statement II — Incorrect:**

  The **Arab Peace Initiative (2002)**, proposed by **Saudi Arabia** and endorsed by the **Arab League**, offered normalization of relations with Israel **in exchange for**:

  - Israel's withdrawal from territories occupied since 1967, and
  - the establishment of a Palestinian state.

  Israel did **not sign** or formally accept the initiative. Therefore, Statement I is correct, while Statement II is incorrect.

**22. A 1 and 2 only**

- **Statement 1 — Correct:** Td protects against both tetanus (T) and diphtheria (d).
- **Statement 2 — Correct:** The reduced diphtheria toxoid dose minimizes side effects while boosting immunity.
- **Statement 3 — Incorrect:** Td replaces TT (Tetanus Toxoid), not childhood DPT vaccines.

**23. D 1, 2, 3 and 4**

- **Statement 1 — Correct:** U-WIN digitally tracks vaccination events for beneficiaries to ensure timely completion of scheduled doses.
- **Statement 2 — Correct:** India's Universal Immunisation Programme is the largest immunization programme in the world.

- **Statement 3 — Correct:** UIP provides 11 vaccines protecting against 12 vaccine-preventable diseases.
- **Statement 4 — Correct:** The inclusion of the Td vaccine expands coverage by strengthening adult and booster immunization. Therefore, all statements are correct.

**24. D 1, 2 and 3**

- **Statement 1 — Correct:** WHO recommends replacing TT with Td to ensure diphtheria protection.
- **Statement 2 — Correct:** NTAGI has recommended Td for all age groups, including pregnant women.
- **Statement 3 — Correct:** The Td vaccine has been inducted into India's UIP.

**25. A 2 only**

- **Statement 1 — Incorrect:** Tetanus is **non-communicable** and enters through contaminated wounds.
- **Statement 2 — Correct:** It is caused by *Clostridium tetani* spores present in soil and animal feces.
- **Statement 3 — Incorrect:** Infection does **not** provide natural immunity; vaccination is still required.

**26. A 1 and 2 only**

- **Statement 1 — Correct:** Non-sterile cord cutting practices are a major cause of neonatal tetanus.
- **Statement 2 — Correct:** Maternal immunization protects newborns through passive immunity.
- **Statement 3 — Incorrect:** India achieved elimination as a public health problem (less than 1 case per 1,000 live births in every district), not zero cases nationwide.

**27. B 3 only**

- **Diphtheria — Not eradicated**

  Diphtheria is a vaccine-preventable bacterial disease caused by *Corynebacterium diphtheriae*. Cases still occur in India, particularly in areas with low immunization coverage. Hence, it is **not eradicated**.

- **Chickenpox — Not eradicated**

  Chickenpox (caused by the varicella-zoster virus) continues to occur in India. While vaccines exist, universal vaccination is not part of India's UIP. Therefore, it is **not eradicated**.

- **Smallpox — Eradicated**

  Smallpox was globally eradicated in **1980** following a WHO-led vaccination campaign. India reported its last case in **1975** and was declared smallpox-free thereafter.

**28. A 1 and 2 only**

- **Statement 1 — Correct:** NMP 2.0 monetizes operational public assets to fund infrastructure expansion.
- **Statement 2 — Correct:** It promotes asset recycling by leveraging private sector efficiency to unlock value from brownfield assets.
- **Statement 3 — Incorrect:** The objective is to **avoid increasing government budgetary outgo**, not increase expenditure.

**29. A 1 and 2 only**

- **Statement 1 — Correct:** CGAM, chaired by the Cabinet Secretary, monitors progress.

- **Statement 2 — Correct:** Proceeds are allocated based on implementing agency (Consolidated Fund, PSU/Port Authority, State Consolidated Fund).
- **Statement 3 — Incorrect:** Ministries, PSUs, and state entities are key participants; NITI Aayog provides the framework.

**30. A 1 and 2 only**

- **Statement 1 — Correct:** NMP 2.0 covers key infrastructure sectors including roads, railways, power, ports, telecom, and more.
- **Statement 2 — Correct:** Monetisation tools include PPP concessions, InvITs, and securitisation of cash flows.
- **Statement 3 — Incorrect:** Private sector participation is central; monetisation leverages private investment while ownership often remains public.

**31. C Both 1 and 2**

- **Statement 1 — Incorrect:**

  Under **NMP 1.0 (2021–2025)**, the largest monetisation potential was identified in:

  - **Roads** (largest share)
  - **Railways**
  - **Power transmission**

  These sectors were prioritized because they have operational brownfield assets with predictable revenue streams suitable for monetisation.

- **Statement 2 — Correct:**

  The NMP uses multiple monetisation instruments, including:

  - **PPP concessions** (toll-operate-transfer models, long-term leases)
  - **Infrastructure Investment Trusts (InvITs)**
  - securitisation of revenue streams and other structured financing tools

  These mechanisms allow private participation while ownership typically remains with the government.

**32. B 1, 3 and 4 only**

- **Statement 1 — Correct:** NMP 1.0 targeted approximately ₹6 lakh crore through leasing of core infrastructure assets between FY 2022–25.
- **Statement 2 — Incorrect:** NMP focuses on monetising **core operational assets**, not disinvestment of non-core assets.
- **Statement 3 — Correct:** Proceeds from monetisation are intended to finance new infrastructure under the National Infrastructure Pipeline.
- **Statement 4 — Correct:** The NMP timeline was designed to be co-terminus with the NIP implementation period. Thus, statements **1, 3, and 4** are correct.

**33. A 1 and 2 only**

- **Statement 1 — Correct:** Soapstone (chloritic schist) was widely used because it allowed fine detailing.

- **Statement 2 — Correct:** Star-shaped jagatis are a distinctive feature of Hoysala architecture.
- **Statement 3 — Incorrect:** Hoysala temples include **ekakuta, dvikuta, trikuta**, and even **panchakuta** layouts.

**34. D 1, 2 and 3**

- **Statement 1 — Correct:** Lakshmidevi Temple (1114 CE) is one of the earliest surviving Hoysala temples.
- **Statement 2 — Correct:** Hulikere Kalyani is a stepped tank with shrines and symbolic design elements.
- **Statement 3 — Correct:** Jain basadis near Halebidu reflect the Hoysalas' early patronage of Jainism.

**35. A 1 and 2 only**

- **Statement 1 — Correct:** Belur was the early capital; later it shifted to Halebidu.
- **Statement 2 — Correct:** Vishnuvardhana expanded the empire and patronized temple construction.
- **Statement 3 — Incorrect:** The decline was due to invasions by the **Delhi Sultanate** and internal conflicts, not European colonial expansion.

**36. A 1 and 2 only**

- **Statement 1 — Correct:** NCMM was launched in January 2025 for 2024–25 to 2030–31.
- **Statement 2 — Correct:** It seeks to secure supply chains, boost industrial growth, and support technology and energy security.
- **Statement 3 — Incorrect:** The mission aims to secure **both domestic and international supply sources**.

**37. D 1, 2 and 3**

- **Statement 1 — Correct:** Critical minerals are vital for clean energy, electronics, defence, and industry.
- **Statement 2 — Correct:** Each country defines critical minerals based on strategic needs and supply risks.
- **Statement 3 — Correct:** India released a list of **30 critical minerals** in 2023.

**38. D 1, 2 and 3**

- **Statement 1 — Correct:** Lithium-ion batteries rely on lithium, cobalt, and nickel.
- **Statement 2 — Correct:** Solar photovoltaic cells use silicon and elements like gallium and indium.
- **Statement 3 — Correct:** Rare earth elements like neodymium and dysprosium enable efficient wind turbine magnets.

**39. A 1 and 3 only**

- **Statement 1 — Correct:** The MMDR Amendment empowers the Central Government to auction mining leases and composite licences for specified critical minerals.
- **Statement 2 — Incorrect:** The NCMM covers the entire value chain including **exploration, mining, processing, recycling, R&D, and skill development**.
- **Statement 3 — Correct:** Critical minerals are strategic due to their importance in clean energy, electronics, defence, and their supply chain vulnerabilities. Therefore, statements **1 and 3** are correct.

**40. C 1 and 3 only**

- **Statement 1 — Correct**

  The **Minerals Security Partnership (MSP)** is a U.S.-led initiative aimed at securing resilient global supply chains for critical minerals used in clean energy and advanced technologies.

  India joined MSP in **June 2023** as the **14th member**, strengthening its role in strategic mineral partnerships.

- **Statement 2 — Incorrect**

  India is **not resource-rich in all critical minerals**. Many essential minerals such as lithium, cobalt, nickel, and rare earth elements are limited domestically.

  To address this:

  - India identified **30 critical minerals (2023)**.
  - Exploration efforts have been expanded through the Geological Survey of India (GSI).
  - The **National Critical Mineral Mission (NCMM)** aims to strengthen self-reliance.

- **Statement 3 — Correct**

  The **MMDR Amendment Act, 2023** empowers the **Central Government** to exclusively auction mining leases and composite licences for specified critical minerals listed in **Part D of the First Schedule**, including:

  - lithium-bearing minerals
  - niobium-bearing minerals
  - rare earth elements (excluding uranium & thorium)

  This reform aims to accelerate exploration and strategic mineral development Thus, **statements 1 and 3** are correct.