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Illegal Coal Mining Tragedy in Meghalaya

Coal Mining in India

What is Coal Mining ?

Coal mining refers to the process of extracting coal deposits from the earth for use in power generation and industrial activities. It is carried out through surface (open-cast) or subsurface (underground) techniques and is governed in India by a framework of central mining, labour, and environmental legislations.

Importance of Coal

Coal continues to be India's dominant baseload energy resource, sustaining thermal electricity generation, steel manufacturing, and cement production. While it plays a crucial economic role, coal mining also carries significant environmental and social consequences.

Relevance

GS-1 (Geography & Society):

- Mineral geography of the North-East region, fragile hill ecosystems, and mining-induced human–environment interactions.
- Exposure and vulnerability of migrant and informal labourers working in high-risk sectors.

GS-3 (Economy, Environment, Disaster Management):

- Trade-offs between coal-based economic activity and sustainable development.
- Environmental degradation such as deforestation and acid mine drainage.
- Mine-related disasters and the adequacy of safety regulations.

Rat-Hole Mining

Definition

Rat-hole mining involves excavating extremely narrow horizontal passages, often less than a metre in height, through which workers crawl to manually extract coal. This practice is prevalent in the hilly coal-rich regions of Meghalaya.

Why Practised ?

It is adopted because coal seams are thin, land ownership is private, capital requirements are minimal, and returns are quick, despite the extreme dangers to human life, health, and the environment.

Legal Status

The National Green Tribunal prohibited rat-hole mining in 2014 due to its destructive environmental impact and unsafe labour conditions. Nevertheless, illegal operations persist owing to enforcement failures and economic dependence at the local level.

Geological and Regional Factors

Meghalaya's Coal Geology

The state possesses tertiary coal deposits occurring in discontinuous seams within ecologically fragile hill systems. These geological features discourage mechanised mining and promote unsafe manual extraction practices.

Terrain Constraints

Steep gradients, intense rainfall, and unstable soil conditions heighten the likelihood of tunnel collapses, flooding, and landslides, converting unscientific mining locations into extremely hazardous workplaces.

Safety and Labour Dimension

Mine Safety Basics

Scientific mining requires ventilation systems, structural reinforcement, gas detection mechanisms, and emergency exits. Such safeguards are largely absent in illegal rat-hole mines, significantly increasing accident risks.

Labour Profile

The workforce mainly consists of migrant labourers and economically marginalised groups who accept dangerous working environments due to limited livelihood alternatives and informal employment structures.

Use of Explosives

The unregulated use of explosives like dynamite raises the probability of accidental blasts, toxic gas exposure, and tunnel destabilisation, particularly in the absence of certified handlers and safety norms.

Environmental Impacts

Land and Forests

Unregulated mining accelerates deforestation, soil erosion, and irreversible landscape damage, undermining ecological balance in fragile hill regions.

Water Pollution

Coal extraction produces acid mine drainage that introduces heavy metals and acidity into rivers, harming aquatic ecosystems and deteriorating water quality for downstream populations.

Governance and Regulation

Constitutional Position

While mining and mineral development fall under Union jurisdiction through laws such as the MMDR Act, land ownership and on-ground enforcement are state responsibilities, necessitating coordinated governance.

Enforcement Challenges

Illegal mining continues due to inadequate monitoring, complex local political economy, difficult terrain, and dependence on mining for livelihoods, weakening the effectiveness of formal prohibitions.

Disaster Management Basics

Response Framework

Rescue efforts involve the State Disaster Response Force, police, and medical units, focusing on evacuation, emergency healthcare, and stabilisation of unsafe underground sites.

Preventive Approach

Effective prevention demands strict licensing, routine inspections, worker registration, closure of illegal mines, and creation of alternative livelihood options to reduce reliance on unsafe mining.

Ethical and Developmental Angle

Development vs Safety

The tragedy highlights the tension between economic survival and human safety, where poverty and desperation push workers into life-threatening informal occupations.

State Responsibility

Welfare state principles obligate governments to ensure safe working conditions, environmental protection, and sustainable employment, rather than limiting action to post-disaster compensation.

Cyberchondria and Health Misinformation

Context :

Triggering Incident

A filicide case in Bhilwara, Rajasthan—where a mother killed her children after believing online medical misinformation about terminal illness—demonstrated the extreme dangers of unchecked digital health content.

Broader Relevance

With over one billion internet subscriptions, social media has become a primary health information source in India, raising concerns over anxiety-driven self-diagnosis, misinformation, and declining trust in medical institutions.

Relevance

GS-2 (Governance & Social Sector):

- Public health communication, digital governance, and platform accountability.
- Mental health as a growing policy priority.

GS-3 (Science & Technology):

- Algorithmic amplification and AI-driven recommendation mechanisms.
- Digital literacy challenges and misinformation spread.

Cyberchondria

Definition

Cyberchondria describes compulsive, anxiety-fuelled online searches for medical information, leading individuals to fear serious illness despite limited or absent clinical evidence.

Origin of Term

The term merges “cyber” (digital environment) and “hypochondria” (illness anxiety), reflecting technology-intensified health fears rather than a distinct psychiatric disorder.

Clinical Nature

It is viewed as a behavioural-cognitive pattern associated with health anxiety, obsessive checking, and reassurance-seeking, sometimes overlapping with anxiety or obsessive-compulsive disorders.

Hypochondria vs Cyberchondria

Traditional Hypochondria

Hypochondria involves persistent fear of illness despite medical reassurance, traditionally triggered by bodily sensations, anecdotal accounts, or media exposure.

Digital Amplification

Cyberchondria intensifies these fears as search engines and social platforms deliver vast, decontextualised information that often highlights worst-case medical outcomes.

How Algorithms Influence Health Anxiety ?

Recommendation Systems

Social media algorithms prioritise engagement, amplifying sensational or fear-inducing health content that generates higher watch time and interaction.

Personalisation Loops

AI systems monitor user behaviour such as clicks and viewing duration, repeatedly recommending similar content and forming anxiety-reinforcing echo chambers.

Engagement Bias

Studies indicate that misleading medical information often attracts more engagement than accurate content, causing algorithms to unintentionally boost misinformation.

Medical Misinformation

What is Medical Misinformation ?

Medical misinformation consists of inaccurate, misleading, or unverified health claims presented without scientific consensus, often simplified to appear credible and relatable.

Source Patterns

Much misleading health content originates from non-experts, influencers, or anecdotal narratives rather than qualified medical professionals.

Doctor–Patient Disconnect

Limits of Online Diagnosis

Online searches cannot substitute for clinical examinations, patient histories, and diagnostic tests essential for distinguishing benign symptoms from serious illness.

Anxiety Spiral

Because many diseases share common symptoms, search results often emphasise severe conditions like cancer, triggering catastrophic thinking among vulnerable users.

Psychological Dimension

Conspiratorial Thinking

When medical systems appear opaque, individuals may gravitate toward simplified or conspiratorial explanations that provide emotional reassurance and perceived control.

Authority Bias

Users often trust content that appears authoritative online, even when credibility is weak, increasing susceptibility to persuasive but inaccurate claims.

Public Health and Governance Angle

Digital Health Literacy

Low levels of health and digital literacy hinder people's ability to evaluate sources, understand probabilities, or differentiate correlation from causation.

Platform Responsibility

Although platforms maintain misinformation policies, enforcement remains uneven, as algorithms are designed primarily to maximise engagement rather than public health outcomes.

Ethical and Social Angle

Mental Health Impact

Cyberchondria heightens anxiety, stress, unnecessary healthcare utilisation, and mistrust in doctors, placing strain on individuals and health systems.

Family and Social Consequences

Extreme anxiety-driven actions can harm families and children, underscoring that misinformation poses social and ethical risks beyond information accuracy.

Preventive Understanding

Responsible Health Seeking

Consulting verified medical sources, seeking second opinions, and engaging qualified professionals are essential to counter algorithm-driven misinformation.

Role of Awareness

Public campaigns promoting digital health literacy and mental well-being can reduce susceptibility to misinformation-induced panic.

Sodium-Ion Battery Technology

Context

Strategic Debate in India

India is re-evaluating its battery strategy due to dependence on imports and risks linked to critical minerals in lithium-ion technology, with sodium-ion batteries emerging as a promising alternative.

Energy Transition Relevance

Since batteries underpin EVs, grid storage, and digital infrastructure, technological choices directly influence India's energy security, self-reliance, and clean-energy objectives.

Relevance

GS-3 (Science & Technology, Economy, Environment):

- Innovation in energy storage and battery chemistry.
- Dependency on critical minerals and supply-chain resilience.
- Clean energy transition and EV ecosystem development.

Batteries

What is a Battery ?

A battery is an electrochemical device that stores energy via reversible chemical reactions, converting chemical energy into electrical energy through ion movement between electrodes.

Key Components

Every battery consists of an anode, cathode, electrolyte, and current collectors that together facilitate ion transport internally and electron flow through an external circuit.

Lithium-Ion Batteries (Li-ion)

Working Principle

Lithium-ion batteries operate by shuttling lithium ions between a graphite anode and metal-oxide cathode, delivering high energy density and long cycle life.

Strengths

Their high energy density, low self-discharge, and mature manufacturing ecosystem have made Li-ion the dominant technology in EVs and consumer electronics.

Structural Constraints

Li-ion batteries depend on lithium, cobalt, nickel, and graphite—minerals concentrated in a few regions—creating supply, pricing, and geopolitical vulnerabilities.

Sodium-Ion Batteries (Na-ion)

What is Sodium-Ion Technology ?

Sodium-ion batteries function similarly to Li-ion systems but use sodium ions as charge carriers, sourced from abundant materials such as salt deposits and soda ash.

Material Advantage

Sodium's abundance, wide geographic availability, and low cost reduce reliance on critical minerals and exposure to global commodity volatility.

Current Collectors

Na-ion batteries use aluminium collectors for both electrodes, unlike Li-ion systems that require copper on the anode, lowering costs, weight, and corrosion risks.

Energy Density

Specific Energy (Wh/kg)

Specific energy measures energy stored per unit mass. Na-ion batteries have lower values because sodium atoms are heavier than lithium.

Practical Gap

Optimised cell design can narrow this gap, and certain Na-ion chemistries approach the performance of lithium iron phosphate (LFP) batteries.

Safety Characteristics

Thermal Stability

Na-ion cells exhibit lower peak temperatures during thermal runaway, reducing fire and explosion risks compared to conventional Li-ion batteries.

Transport Safety

Li-ion batteries are classified as dangerous goods requiring charge limits during transport, whereas Na-ion batteries can be stored safely at zero voltage.

Manufacturing Compatibility

Production Lines

Existing Li-ion manufacturing facilities can be adapted for Na-ion production with minimal changes, lowering capital costs and enabling dual-chemistry flexibility.

Moisture Sensitivity

Na-ion manufacturing demands deeper vacuum drying, as residual moisture has a greater impact on performance than in Li-ion cells.

Global Industry Status

Capacity Trends

Global Na-ion capacity stands at roughly 70 GWh (2025) and is projected to reach nearly 400 GWh by 2030, indicating commercial momentum.

Cost Outlook

Long-term projections suggest Na-ion batteries could become cheaper than Li-ion by 2035, particularly for stationary storage and low-range mobility.

Indian Policy Context

PLI Scheme

India's PLI scheme for Advanced Chemistry Cells (2021) allocated around 40 GWh capacity but remains largely lithium-focused, with limited upstream processing.

Import Dependence

Scarce domestic lithium reserves and refining capacity mean continued import reliance, increasing strategic vulnerability.

Application Suitability

Best Use Cases

Na-ion batteries are well-suited for grid storage, two- and three-wheelers, and stationary applications where cost, safety, and durability outweigh ultra-high energy density.

Strategic Significance for India

Energy Security

Sodium-based technologies reduce dependence on imported critical minerals, strengthening supply-chain resilience.

Industrial Opportunity

Early adoption enables India to build a domestic battery ecosystem and avoid the late-entry disadvantages experienced in Li-ion manufacturing.

Way Forward

Policy Support

Technology-neutral incentives, research funding, and standards recognition can foster a diversified battery ecosystem.

Ecosystem Development

Building domestic materials, components, and recycling capacity is essential for long-term sustainability.

Motion of Thanks in Parliament

Context

Recent Instance

The Lok Sabha adopted the Motion of Thanks on the President's Address amidst repeated adjournments and Opposition disruptions, even as the Prime Minister was absent for a portion of the debate. The episode revived debate on parliamentary propriety and executive accountability.

Procedural Significance

The developments brought renewed focus on parliamentary conventions, the constitutional role of the executive, and the rules governing the Motion of Thanks—one of the most significant procedures in India's parliamentary functioning.

Relevance

GS-2 (Polity):

- Article 87 of the Constitution, parliamentary practices, and mechanisms of executive accountability.
- Authority of the Speaker, conventions versus codified rules, and the functioning of deliberative democracy.

President's Address — Constitutional Basis

Article 87

Article 87 of the Constitution requires the President to address both Houses of Parliament at the first session after a general election and at the commencement of the first session every year.

Purpose of Address

The Address sets out the government's policy direction, priorities, and proposed legislative agenda, acting as a formal communication of executive intent to Parliament.

Motion of Thanks

What is Motion of Thanks ?

The Motion of Thanks is a formal resolution moved in each House to express gratitude to the President for the Address and to deliberate on its contents.

Nature of Discussion

The discussion is wide-ranging, allowing Members of Parliament to evaluate government performance, point out omissions, and critique policy choices across sectors.

Procedural Features

Moving and Seconding

The motion is proposed and seconded by members of the ruling party, following which MPs from all political parties participate in the debate and suggest amendments.

Amendments

Members may introduce amendments drawing attention to policy shortcomings or ignored issues; acceptance of an amendment serves as a political signal of disapproval.

Prime Minister's Reply

By established convention, the Prime Minister responds to the debate, addressing concerns raised and presenting the government's consolidated position.

Political and Constitutional Importance

Confidence Dimension

Although not constitutionally defined as a confidence motion, defeat of the Motion of Thanks is regarded as a serious indication of loss of majority support.

Accountability Tool

The debate offers Parliament an early opportunity in the session to scrutinise the executive's agenda and hold it accountable.

Role of Speaker and House Discipline

Speaker's Authority

The Speaker is responsible for regulating proceedings, maintaining order, and using adjournments or disciplinary powers to uphold parliamentary decorum.

Parliamentary Privilege

Actions such as shouting slogans or entering the Well of the House may be treated as breaches of privilege, though political protest remains a frequent feature.

Conventions vs Rules

Conventions

Continuous presence of the Prime Minister during the debate is a strong convention, but it is not legally mandated by the Constitution.

Democratic Norms

Effective parliamentary democracy depends on dialogue, dissent, and mutual respect, not merely on numerical strength.

Comparative Perspective

Westminster Model

The Motion of Thanks traces its origins to British parliamentary traditions, where the monarch's speech is similarly debated and scrutinised.

Broader Democratic Significance

Deliberative Democracy

The Motion of Thanks exemplifies deliberative democracy by enabling comprehensive policy discussion at the start of the parliamentary year.

Opposition's Role

The Opposition uses this platform to articulate alternative viewpoints, expose governance gaps, and strengthen democratic oversight.

Artificial Intelligence Racing Ahead of Regulation

Context

Global Governance Push

The United Nations announced the formation of an Independent International Scientific Panel on Artificial Intelligence to advise on global governance, reflecting growing anxiety over AI's cross-border risks and fragmented national regulations.

Technological Leap

At the same time, the rise of bot-only digital platforms—where AI agents interact exclusively with each other—signals a rapid expansion of autonomous digital ecosystems that outpace existing regulatory frameworks.

Relevance

GS-3 (Science & Technology):

- Governance of artificial intelligence, regulation of emerging technologies, AI agents, and deepfake threats.

GS-2 (International Relations & Governance):

- UN-led multilateral norm-setting and global technology governance.
- Strategic competition and geopolitics surrounding AI leadership.

Artificial Intelligence

What is AI ?

Artificial Intelligence refers to computational systems capable of performing tasks that normally require human cognitive abilities, such as learning, reasoning, language understanding, perception, and decision-making.

Core Subfields

AI encompasses machine learning, deep learning, natural language processing, and computer vision, which allow systems to identify patterns and improve performance using data.

AI Governance

Meaning

AI governance includes the legal, policy, ethical, and technical frameworks that guide the development, deployment, and use of AI systems to ensure accountability and safety.

Why Needed ?

Given AI's influence on elections, economies, security, and individual rights, unchecked deployment can generate large-scale social harm and cross-border spillovers.

Global Governance Frameworks

UN Role

The UN functions as a forum for consensus-building and norm-setting, similar to climate or nuclear governance, rather than imposing binding global AI regulations.

Pact for the Future

The AI panel operates under the UN's Pact for the Future, with a mandate to provide science-based guidance on emerging technologies as global public goods.

AI Race — Strategic Dimension

Geopolitical Competition

Nations increasingly regard AI as strategic infrastructure that shapes economic competitiveness, military capability, and technological dominance.

Investment Surge

Rising public and private investments highlight AI's role in productivity growth, digital transformation, and national security architectures.

Risks Associated with AI

Misinformation

Generative AI can produce deepfakes, synthetic content, and automated propaganda, undermining information integrity and democratic processes.

Labour Disruption

Automation threatens both routine cognitive and manual jobs, leading to transitional unemployment and skill mismatches.

Surveillance

AI-powered analytics enable large-scale monitoring and profiling, raising serious concerns over privacy and civil liberties.

Bias and Ethics

AI systems trained on biased datasets may reinforce discrimination in hiring, lending, law enforcement, and welfare delivery.

AI Agents — Basic Concept

What are AI Agents ?

AI agents are autonomous software programs capable of sensing their environment, making decisions, and executing tasks with minimal human input.

Functional Scope

They perform activities such as drafting documents, analysing data, scheduling tasks, and coordinating systems as digital assistants.

Bot-to-Bot Ecosystems

Concept

Bot-only platforms facilitate AI-to-AI communication, where agents generate, assess, and respond to content without human involvement.

Significance

Such ecosystems raise questions regarding oversight, accountability, emergent behaviour, and loss of human control.

Regulation vs Innovation Gap

Pace Mismatch

Technological innovation advances rapidly due to market forces, while regulatory processes move slower due to consultation and legislative requirements.

Jurisdiction Limits

AI systems operate across national borders, making domestic regulations insufficient to govern global platforms.

Ethical and Societal Dimension

Human Oversight

Ethical AI frameworks emphasise human-in-the-loop decision-making to maintain accountability and value alignment.

Digital Autonomy Risks

Fully autonomous systems weaken traditional liability structures and reduce transparency in decision-making chains.

Way Forward

Multi-Stakeholder Governance

Effective AI governance requires collaboration among governments, industry, academia, and civil society.

Principle-Based Regulation

Core principles such as safety, transparency, fairness, and accountability can guide regulation amid rapid innovation.

India AI Stack

Context

Policy Push

India is developing a population-scale AI Stack under the IndiaAI Mission, integrating data, models, computing power, infrastructure, and energy to democratise AI and reduce dependence on foreign technology ecosystems.

Development Significance

The AI Stack approach treats artificial intelligence as public digital infrastructure—similar to Aadhaar or UPI—aimed at inclusive, sovereign, and scalable development.

Relevance

GS-3 (Science & Technology, Economy):

- Digital public infrastructure, AI ecosystem development, compute capacity, and semiconductor initiatives.
- Applications of AI in agriculture, healthcare, and governance.

GS-2 (Governance):

- IndiaAI Mission, digital sovereignty, and inclusive technology policy.

AI Stack — Basic Concept

What is an AI Stack ?

An AI stack refers to the complete technological and infrastructural ecosystem required to build, train, deploy, and scale AI applications from data acquisition to end-user delivery.

Purpose

It enables AI systems to function reliably at population scale, translating research innovation into practical services across sectors.

Layer 1 — Application Layer

Meaning

The application layer consists of user-facing AI services such as chatbots, diagnostic tools, translation platforms, and advisory systems that deliver AI benefits directly to citizens.

Agriculture Use

AI-based advisories assist in crop planning, pest management, and input optimisation, with state-level deployments reporting productivity gains of 30–50%.

Healthcare Use

AI tools aid early detection of tuberculosis, cancers, and neurological disorders, strengthening preventive healthcare and reducing diagnostic delays in underserved regions.

Education Use

Integration through NEP 2020, DIKSHA, and YUVAi enhances digital and AI literacy, preparing students for technology-driven labour markets.

Governance Use

AI applications in e-Courts Phase III and IMD forecasting improve translation services, case management, and disaster prediction, enhancing transparency and service delivery.

Layer 2 — AI Model Layer

Meaning

This layer houses the core intelligence where algorithms learn from data to generate predictions, language outputs, recognition systems, and decision support.

Sovereign Models

India is building indigenous foundation and multimodal models to ensure alignment with domestic languages, culture, and policy priorities.

IndiaAIKosh

IndiaAIKosh serves as a national AI repository hosting over 5,700 datasets and 250 models to support startups, researchers, and public-sector innovation.

Language Inclusion

Initiatives like Bhashini and Sarvam AI promote Indian-language AI, enabling multilingual voice interfaces and inclusive governance services.

Layer 3 — Compute Layer

Meaning

The compute layer supplies the high-performance processing power required for training large AI models using GPUs, TPUs, and specialised chips.

IndiaAI Compute

The IndiaAI Compute Portal provides access to 38,000 GPUs and 1,050 TPUs at subsidised rates, reducing entry barriers for startups and academia.

Supercomputing

Facilities such as PARAM Siddhi-AI and AIRAWAT support applications in natural language processing, climate modelling, and drug discovery.

Semiconductor Push

The ₹76,000 crore Semiconductor Mission and indigenous processors like SHAKTI and VEGA aim to establish long-term hardware self-reliance.

Layer 4 — Data Centres & Networks

Meaning

This layer comprises data centres, fibre networks, broadband infrastructure, and 5G connectivity essential for rapid data transmission and AI deployment.

Connectivity Scale

5G coverage now spans 99.9% of districts and 85% of the population, supporting real-time AI and IoT-based services.

Data Centre Capacity

India's data centre capacity stands at around 960 MW (3% of global share) and is projected to reach 9.2 GW by 2030.

Investment Momentum

Significant investments by global firms in Indian data centres enhance digital sovereignty and domestic AI hosting capacity.

Layer 5 — Energy Layer

Meaning

AI systems require uninterrupted, high-volume electricity, making power availability and affordability critical for scaling AI infrastructure.

Power Availability

India's installed power capacity exceeds 500 GW, with an energy shortage of only 0.03%, ensuring reliability for data centres.

Clean Energy Link

More than 51% of installed capacity comes from non-fossil sources, aligning AI expansion with climate commitments.

Grid Stability

Pumped storage and battery systems improve grid flexibility, supporting AI operations alongside renewable energy variability.

Strategic Significance

Digital Sovereignty

A domestic AI stack reduces dependence on foreign platforms, ensuring data control and regulatory alignment.

Inclusive Growth

Population-scale AI enables targeted welfare delivery, productivity enhancement, and improved service efficiency.

Way Forward

Ecosystem Integration

Coordinated action across policy, research, industry, and energy sectors is necessary to avoid fragmented AI development.

Responsible AI

Strong ethical safeguards, data protection frameworks, and transparency mechanisms are vital to sustain public trust.

07th February 2026: Daily MCQs

Q1. With reference to *rat-hole mining in Meghalaya*, consider the following statements:

1. It is mainly practised due to thin coal seams and private land ownership patterns.
2. It was declared illegal by the Supreme Court under the Mines and Minerals (Development and Regulation) Act.
3. It poses higher risks of flooding and tunnel collapse in regions with high rainfall.

Which of the statements given above is/are correct?

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

Answer: (a)

Why tricky?

- Ban was by **NGT (2014)**, not Supreme Court → Statement 2 ✗
- Statements 1 & 3 test **geology + governance** integration → both ✓

Q2. Consider the following statements regarding *cyberchondria*:

1. It is formally classified as an independent psychiatric disorder in the DSM-5.
2. It is driven by repetitive online health searches reinforced by algorithmic recommendation systems.
3. It can increase distrust in qualified medical professionals.

Which of the statements given above is/are correct?

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

Answer: (a)

Why tricky?

- DSM classification is a **classic trap** → Statement 1 ✗
- Algorithms + doctor–patient disconnect = real risk → 2 & 3 ✓

Q3. With reference to *sodium-ion batteries*, consider the following statements:

1. They eliminate dependence on all critical minerals.
2. They can use aluminium as current collectors for both electrodes.
3. They are more suitable than lithium-ion batteries for long-range electric vehicles.

Which of the statements given above is/are correct?

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

Answer: (a)

Why tricky?

- Sodium reduces **lithium dependence**, not *all* minerals → Statement 1 ✗
- Lower energy density → poor for long-range EVs → Statement 3 ✗

Q4. With reference to the *Motion of Thanks in Parliament*, consider the following statements:

1. Its defeat has the same constitutional effect as a no-confidence motion.
2. Amendments to it can be moved by opposition members.
3. The Prime Minister's reply during the debate is a constitutional obligation.

Which of the statements given above is/are correct?

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

Answer: (a)

Why tricky?

- Political effect ≠ constitutional effect → Statement 1 ✗
- PM reply = **convention**, not obligation → Statement 3 ✗
- Opposition amendments → ✓

Q5. Consider the following with reference to the *India AI Stack*:

1. It conceptualises AI as public digital infrastructure.
2. Compute and energy layers are critical for population-scale AI deployment.
3. It aims to fully replace foreign AI models in the short term.

Which of the statements given above is/are correct?

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

Answer: (a)

Why tricky?

- Strategic autonomy ≠ immediate replacement → Statement 3 ✗
- Infrastructure logic tested, not fact recall → 1 & 2 ✓

Mains: India's external relations are being guided more by practical considerations than by rigid ideological commitments. Examine how this pragmatic orientation has influenced India's interactions with major global powers as well as regional groupings. (250 words)