



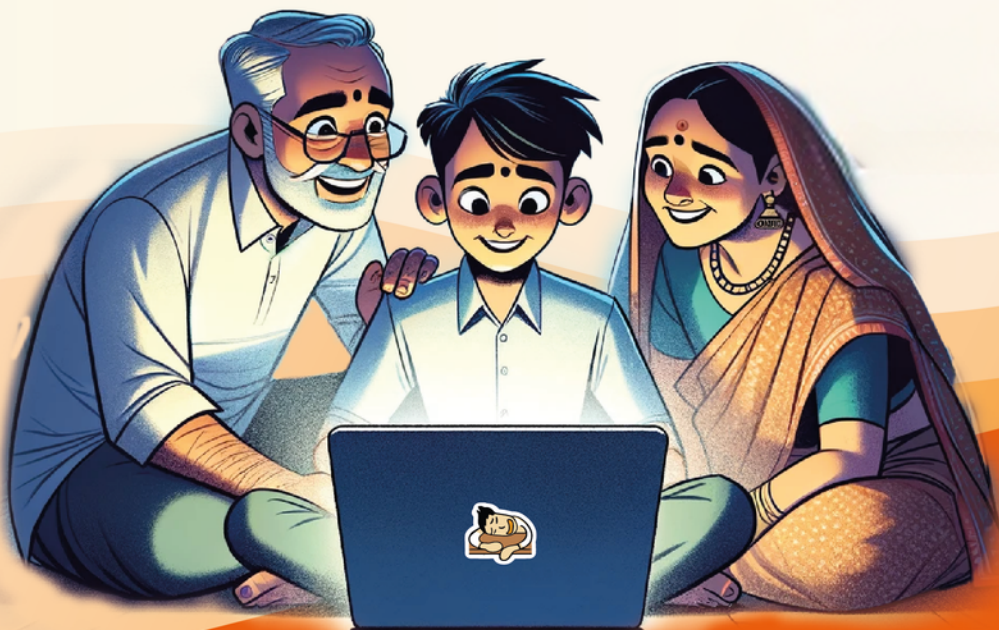
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UPSC MAINS

Solved PYQs

2022

General Studies Paper 1



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How to Maximize Your UPSC Mains Score Using These PYQs

Transform Your Preparation into Your Success Strategy

✗ "I solve PYQs but still struggle in mock exam"

Your Problem: You're treating PYQs like MCQs - solving for the sake of solving without strategic analysis.

Strategic Solution: After solving each question, spend 10 minutes analyzing: What was the examiner testing? Which keywords were crucial? How can I improve my answer structure? Create a "mistakes point list" to track recurring weaknesses.



"I can't finish questions within time limits"

Your Problem: You know the content but struggle with time management and answer structuring under pressure.

Time-Bound Practice: Set strict timers - 7 minutes for 10-mark questions, 12 minutes for 15-mark questions. Practice writing concise, impactful answers. Use bullet points and subheadings to save time while maintaining clarity.



"My answers lack depth and examples"

Your Problem: Your answers are generic and don't stand out among thousands of similar responses.

Content Enhancement: For each PYQ, create a "example bank" - collect 2-3 specific case studies, data points, or contemporary examples. Practice weaving these naturally into your answers to demonstrate comprehensive understanding.



"I don't know which topics to prioritize"

Your Problem: Without pattern analysis, you're studying everything equally instead of focusing on high-weightage areas.

Smart Analysis: Create a frequency chart of topics from last 7 years. Identify recurring themes and question patterns. Allocate 60% of your time to high-frequency topics, 40% to emerging trends. Also Sleepy Classes has a video on complete pattern analysis of UPSC mains.

⚠ Critical Mistake to Avoid

Don't just read solved answers and move on. The real learning happens when YOU attempt the question first, then compare with model answers to identify gaps.



Remember: PYQs are your blueprint, not just practice material

Every question tells you exactly what UPSC expects. Use this collection to decode the examiner's mindset, not just to test your knowledge. Your success lies in understanding the 'why' behind each question.

FREE - GS Mains PYQs Discussion

Date	Day	Topic	Year
02 June 2025	Monday	General Studies Paper 1	2024
03 June 2025	Tuesday	General Studies Paper 2	2024
04 June 2025	Wednesday	General Studies Paper 3	2024
05 June 2025	Thursday	General Studies Paper 4	2024
15 June 2025	Sunday	General Studies Paper 1 to 4	2023
22 June 2025	Sunday	General Studies Paper 1 to 4	2022
29 June 2025	Sunday	General Studies Paper 1 to 4	2021
06 July 2025	Sunday	General Studies Paper 1 to 4	2020


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History

1) Why was there a sudden spurt in famines in colonial India since the mid-eighteenth century? Give reasons. (Answer in 150 words, 10 Marks)

- The mid-eighteenth century marked a watershed in Indian history, with the advent of colonial rule under the British East India Company. Famines, while not unknown to pre-colonial India, became more **frequent, widespread, and devastating** under colonial administration due to a combination of **economic, administrative, and ecological factors**.

Economic Factors:

1. Agricultural Policies and Land Revenue Systems:

- **Agricultural Challenges:** Outdated farming methods & lack of adequate irrigation infrastructure resulted in **poor crop yield, crop failures and food scarcity**.
- **Plantation Economy and Commercialisation of Agriculture: Forced Cash Crops:** The colonial administration's agricultural policies promoted the commercialization of agriculture, encouraging farmers to focus on cash crops like **cotton, indigo, and jute for export markets rather than subsistence farming**. This shift in agricultural practices led to the **neglect of essential food crops**, reducing local food production and creating a **dependence on volatile global markets**.
 - Examples: Odisha Famine, 1866; The Great Famine, 1876 - 78, The Bengal Famine, 1943.
- **Market Distortions and Food Insecurity:** The commercial orientation of agriculture, coupled with **speculative hoarding and poor distribution systems, distorted markets**. These distortions drove up food prices and **worsened the food insecurity** of the poorest sections of society, particularly during times of famine. **For example, the Bihar Famine of 1873-1874 and the Bengal Famine of 1943 were exacerbated by such market imbalances.**
- **Land Revenue Systems:** Exorbitant, unreasonable revenue demands in cash under Permanent Settlement and Ryotwari, and **high - handedness in revenue collection** led to **Rural Indebtedness, Poverty, and left no surplus for famine reserves**, leading to starvation and deaths.
 - Examples - Bengal Famine of 1770; The Great Famine of 1876 - 78.

2. Industrial Policy:

- **Deindustrialization and Agrarian Dependency:**
 - **Destruction of Handicrafts:** British tariffs (e.g., 80% duty on Indian textiles in UK) crushed weaving, metalwork, and dyeing industries.
 - **Agrarian Overdependence:** Displaced artisans (e.g., Bihar weavers) became landless laborers, increasing pressure on agriculture. *Dadabhai Naoroji termed this the "drain of wealth"*.



- Rising population and deindustrialization shrank farm sizes, reducing productivity and resilience.

3. Infrastructure :

- **Poor Transportation and Storage: Railways** were introduced in India primarily for transporting raw materials to ports for export. Their role in distributing food to famine-affected areas was minimal. Lack of adequate food storage and distribution networks exacerbated the effects of crop failures.

4. Social Dislocation and Displacement

- Colonial policies often resulted in social dislocation and displacement, further exacerbating vulnerability to famine. The introduction of cash-based economies, coupled with the displacement of traditional livelihoods and social structures, left marginalized communities particularly susceptible to food insecurity and destitution during periods of crisis.
 - Example: The Highland Famine of 1943-1944, which affected the tribal communities of present-day Odisha, Jharkhand, and Madhya Pradesh, was exacerbated by the disruption of traditional subsistence practices and the marginalization of indigenous populations by colonial authorities.

II. Environmental Degradation and Ecological Imbalance:

- Colonial insistence on **indigo and poppy cultivation** led to **ecological imbalance**. Indigo, in particular, **depleted soil nutrients**, reducing long-term fertility and undermining food grain production. This contributed to the inability of local ecosystems to recover after monsoon failures, aggravating famine risks.
- **Deforestation, soil erosion, and the disruption of natural water systems** caused by large-scale infrastructure projects such as railways and irrigation canals worsened agricultural productivity and increased the susceptibility of regions to droughts and other natural disasters.
- **Example: The Orissa Famine of 1866** was exacerbated by **deforestation and soil erosion**, which weakened the resilience of the local ecosystem and intensified the impact of crop failures.

III. Governmental Response and Relief Effort:

- Laissez – Faire Economy and belief in Malthusian Principles, led to indifferent attitude, and often delayed and inadequate relief measures.
- Bureaucratic inefficiency, indifference and a lack of understanding of local conditions leading to widespread suffering and loss of life.
- Furthermore, the prioritization of maintaining revenue collection and quelling potential unrest over humanitarian concerns meant that the interests of the colonial state took precedence over the welfare of the affected population.

- Example: During the Deccan Famine of 1876-1878, relief efforts were hindered by bureaucratic red tape and a reluctance to provide assistance, resulting in widespread starvation and mortality among the affected populace.
- **Neglect of Traditional Relief Systems** : Indian rulers traditionally maintained **grain reserves, charitable granaries, and public works to manage food shortages**. The British dismantled many such systems and introduced market-dependent famine policies. During the **Great Bengal Famine of 1770**, officials did little to intervene, resulting in over 10 million deaths.

IV. Impact of Global Events and Policies

- Global events and policies also played a significant role in exacerbating famines in colonial India. **Wars, trade disruptions, and global economic crises** could disrupt food supplies and exacerbate existing vulnerabilities, further exacerbating the impact of famines on local populations.
- Example: The Bengal Famine of 1943, commonly known as the "Man-Made Famine," was exacerbated by the diversion of food supplies to support the British war effort during World War II, leading to widespread starvation and mortality among the civilian population.
- The surge in famines in colonial India was **not merely a natural calamity** but a consequence of **exploitative economic structures, ecological mismanagement, and apathetic governance**. The colonial state **prioritized profit and imperial interests** over food security and human welfare. This systemic neglect dismantled indigenous resilience mechanisms, **turning periodic crop failures into catastrophic famines** – marking one of the darkest legacies of British rule in India.

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2) Why did the armies of the British East India Company – mostly comprising Indian soldiers – win consistently against the more numerous and better-equipped armies of the Indian rulers?

- By 1857, the East India Company had brought nearly **63% of India's territory** and **78% of its population** under direct control—and held sway over much of the rest through indirect influence. Its transformation from a trading company to a colonial power wasn't due to numbers or brute force alone. The Company won consistently because of its **professional army, superior logistics, clever diplomacy**, and the **disunity among Indian rulers**—turning India's internal divisions into its stepping stones to empire.



I. Military & Technological Superiority

- Organized Standing Army:** Unlike **feudal levies** under Indian rulers, EIC maintained a **trained, salaried army of Indian sepoys** led by European officers. Regular pay and strict discipline ensured **loyalty and professionalism**.
 - E.g., Battle of Plassey (1757), Battle of Assaye (1803).
- European Military Drills:** Use of infantry lines, volley fire, and coordinated artillery contrasted sharply with the Indian reliance on cavalry and elephants.
 - E.g., Mysore's powerful cavalry lost to Wellesley's infantry formations.
- Superior Weapons and Logistics:** Modern **muskets, mobile artillery, Congreve rockets, and naval support** helped maintain uninterrupted campaigns, while Indian armies often demobilized during monsoons.
- Naval Power:** EIC and later British control of Indian waters allowed them to blockade enemy supply lines.
 - E.g., Mangalore Port blockaded during Anglo-Mysore Wars.

II. Institutional Strengths & Leadership

- **Merit-Based Military Appointments:** British officers were chosen based on **skill and discipline**. In contrast, Indian officers were often appointed based on **caste or personal loyalty**, leading to **incompetence and factionalism**.
- **Leadership Depth:** The British had a pool of competent leaders – **Clive, Hastings, Wellesley, Dalhousie**—backed by committed subordinates like Eyre Coote and Lord Lake. **Indian rulers lacked trained second-line commanders.**

III. Ideological & Structural Weaknesses in Indian Polities

- **Absence of National Identity:** Indian kingdoms lacked a shared political vision. **Feudal and regional loyalties** trumped any idea of national unity.
- **Lack of Strategic Naval Awareness:** Indian coastal rulers **failed to counter European sea power**, which allowed unchallenged foreign penetration.
- **Cultural Elitism and Conservatism:** Many Indian armies, despite importing European officers or weapons, became **imitative rather than innovative**, unable to adapt to modern warfare tactics effectively.

IV. Economic & Logistical Supremacy

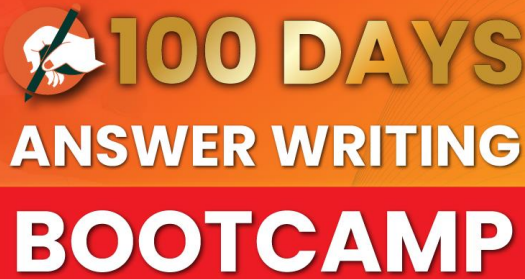
- **Access to Bengal Revenue** (Diwani, 1765): Funded Company campaigns across India.
 - E.g., £4 million annual revenue supported EIC's standing army.
- **Trade Profits: Opium, textile, and indigo profits** backed war expenditures and allowed consistent military upkeep.
- **Indian Rulers' Financial Weakness:** Marathas, for example, often had to **interrupt campaigns to raise revenue**.

V. Political Strategy & Disunity

- **Divide and Rule:** The EIC capitalized on the fragmented post-Mughal polity—pitting Marathas, Mysore, Nizam, and Sikhs against one another.
 - E.g., Anglo-Maratha Wars (1775–1818), Anglo-Sikh Wars (1845–49).
- **Tactical Betrayals:** Indian court intrigues and defections weakened resistance.
 - E.g., Mir Jafar's betrayal in Plassey; internal divisions in Maratha Confederacy.
- **Failure to Build Coalitions:** Despite brilliant leaders like Tipu Sultan and Yashwantrao Holkar, wars were often fought defensively and individually, **lacking pan-Indian unity or strategic foresight**.

Conclusion

- The East India Company's conquest of India was **not a fluke of battlefield fortune but a systemic, multi-dimensional triumph** – built on military innovation, political opportunism, economic extraction, and the fragmented nature of Indian resistance. While some Indian leaders achieved tactical victories—like the Marathas in the First Anglo-Maratha War or Tipu's use of iron rockets—these efforts were isolated and unsustainable. **Had Indian rulers formed strategic coalitions and embraced institutional modernization, the outcome of many conflicts may have been very different.**



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3) How will you explain that medieval Indian temple sculptures represent the social life of those days? (Answer in 150 words, 10 Marks)

- Medieval Indian temple sculptures serve as a **vital historical archive**, offering profound insights into the socio-cultural, religious, and economic life of the period. Through intricate carvings, these sculptures depict **not just deities and myths but also everyday activities, occupations, attire, and societal hierarchies**, making them a **mirror of contemporary social realities**.



Depiction of Daily Life

- Medieval Indian temple sculptures vividly depict scenes from everyday life, capturing the essence of daily existence. These sculptures portray agricultural activities such as plowing, sowing, and harvesting, reflecting the agrarian nature of medieval Indian society. For example, sculptures at the Hoysaleswara Temple in Halebidu, Karnataka, depict farmers engaged in various stages of cultivation, highlighting the importance of agriculture in sustaining livelihoods.
- Additionally, temple sculptures often showcase scenes of hunting, fishing, cooking, and domestic chores, providing insights into the diverse occupations and household activities of medieval Indians.

Reflection of Gender Roles and Relationships

- Temple sculptures offer insights into gender roles and relationships prevalent in medieval Indian society, depicting women in various roles as mothers, wives, daughters, and goddesses. While some sculptures portray women engaged in domestic chores or nurturing children, others depict them as powerful deities and divine consorts embodying strength, wisdom, and fertility.



- For example, sculptures at the Chennakesava Temple in Belur, Karnataka, feature intricately carved figures of celestial beings and divine consorts adorned with elaborate ornaments and symbols. These sculptures not only exemplify the idealized depiction of femininity but also serve as reflections of societal norms and values regarding gender roles and relationships.

Representation of Social Hierarchies

- Medieval Indian temple sculptures reflect the social hierarchies prevalent in society, depicting individuals from different strata occupying distinct roles.
- Scenes of royal processions, courtly gatherings, and martial displays convey the power and prestige associated with the ruling elite. At the same time, depictions of commoners engaged in agricultural labour, trade, or craft activities highlight the contributions of the labouring classes to the socio-economic fabric.
- For instance, sculptures at the Brihadeeswarar Temple in Thanjavur, Tamil Nadu, portray majestic figures of kings and queens adorned with regal attire and jewellery, symbolizing their elevated status.
- Conversely, sculptures of artisans, merchants, and labourers engaged in their respective occupations showcase the diversity of professions and social roles within medieval Indian society.

Portrayal of Religious Rituals and Devotion

- Medieval temple sculptures served as visual scriptures, conveying **mythological and moral lessons** to an illiterate populace. Scenes from the **Ramayana, Mahabharata, and Puranas** were sculpted to instill values and cultural memory.
- Religious rituals—worship, meditation, offerings—were prominently depicted, reflecting deep societal piety. For example, the Kailasanathar Temple in Kanchipuram illustrates episodes like **Samudra Manthan** and **Shiva-Parvati Kalyanam**, portraying not just deities but the **spiritual ethos and devotional practices** of medieval Indian life.

Economic and Cultural Exchanges

- **Sculptures of foreign traders** (like Arabs and Chinese) in **Ellora's Kailasa Temple** and **Mamallapuram's Shore Temple** reveal India's maritime trade links.
- Depictions of **coinage, markets, and guilds** in Belur and Halebid temples indicate a **thriving commercial economy**.

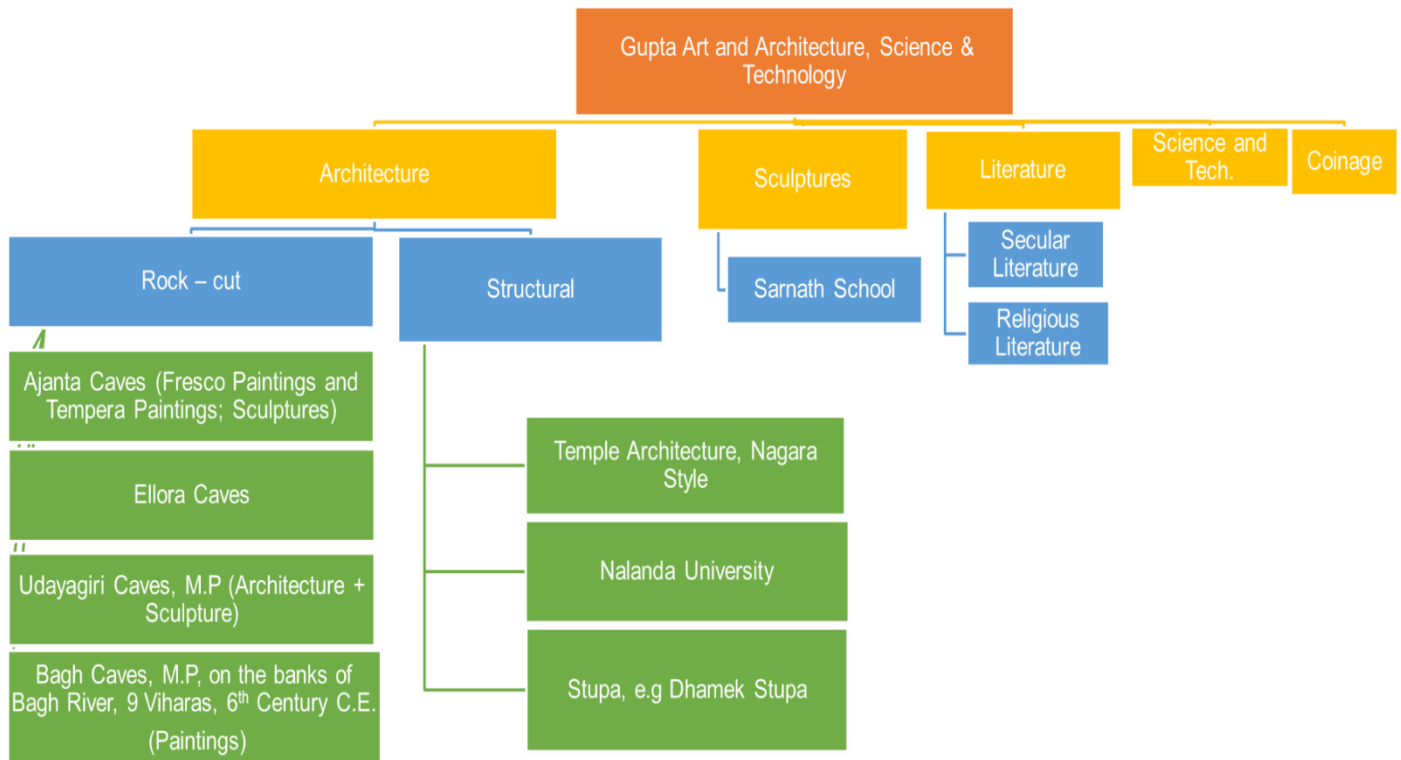
Political Narratives and Royal Patronage

- Rajarajeswara Temple inscriptions narrate **Chola military conquests**, while Kandariya Mahadeva Temple (Khajuraho) carvings symbolize **Chandela kingship**.
- Scenes of royal processions, courtly life, and warfare in Hampi's Virupaksha Temple reflect **Vijayanagara's imperial grandeur**.

- Medieval temple sculptures functioned as both **sacred art and social chronicles**. Through depictions of **daily life, social hierarchies, religious rituals, cultural diversity, and gender roles**, these sculptures provide a multifaceted portrayal of medieval Indian society. Medieval Indian temple sculptures stand as enduring monuments to the **creativity, spirituality, and diversity of medieval Indian society**, serving as windows into a bygone era.

4) Discuss the main contributions of Gupta period and Chola period to Indian heritage and culture. (15 Marks, Answer in 250 words)

- The Gupta and Chola periods are regarded as two of the **most culturally prolific epochs** in Indian history. While the Guptas presided over what is termed as **the *Golden Age of India*** in the north, **the Cholas in the south built a maritime empire and created monumental cultural landmarks**. Both dynasties made enduring contributions across fields such as **art, architecture, literature, science, administration, religion, and international relations**.

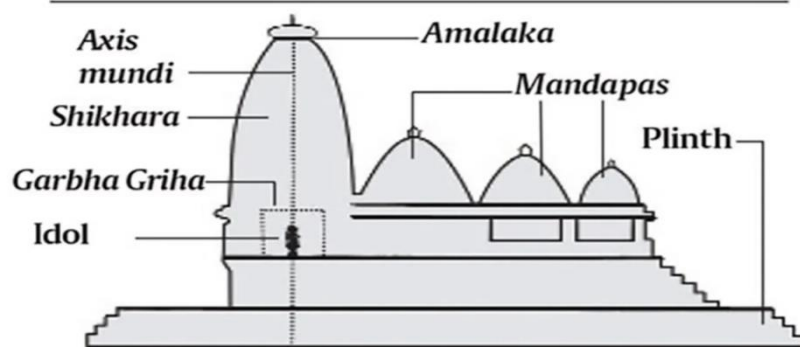


Art and Architecture

- The Gupta period laid the foundation for the classical style of Indian art and temple architecture:
- Rock-cut Architecture:**
 - Exemplified by the development of the II Phase of Ajanta Caves, known for their richly decorated pillars, brackets, door jambs, shrines and facades, and mural paintings.
 - The **Udayagiri, Bagh and Ellora Caves**, also show exquisite Gupta influence.
- Structural Temples:** The **Nagara style** of temple architecture, with curvilinear tower (Shikhara) took root with early examples like the **Dasavatara Temple at Deogarh** and temples at **Nachna-Kuthara**.



BASICS OF THE NAGARA STYLE



- **Nalanda Mahavihara**, An ancient center of higher learning (427 to 1197), in Bihar, India.
- **Stupa Architecture**: Buddhist stupas were rebuilt and embellished, such as the **Dhamek Stupa** at Sarnath.
- These structures reflected a **blend of spirituality, aesthetics, and refined engineering**.



Sculpture and Iconography

- The **Sarnath School of sculpture** became a hallmark of the Gupta aesthetic:
- Use of **cream-colored sandstone**, smooth finishes, and idealized forms.
- Sculptures of the Buddha and Jain Tirthankaras displayed serenity, symbolic gestures (mudras), and spiritual symbolism.
- The bronze **Sultanganj Buddha** and copper images at **Nalanda** show technical advancement in metal casting.
- Other than this, the colossal Buddhist sculptures of Ajanta, for e.g. **Cave no. 26, Ajanta, Mara Vijaya, Mahaparinirvana** etc and the **Hindu Icons**, for instance the **Varaha** avatar of **Vishnu**, rescuing Mother Earth from the chaos in **Udaygiri caves, Madhya Pradesh**.

Literature and Language

- The Gupta period saw a remarkable development in **Sanskrit Literature**:
- **Kalidasa**, the most celebrated poet-dramatist, authored works like *Abhijnanashakuntalam*, *Raghuvamsha*, *Meghaduta*, and *Kumarasambhava*.
- Other notable writers included **Vishakhadatta** (*Mudrarakshasa*), **Sudraka** (*Mrichchhakatika* - rich in humour and pathos, *Vina-vasavadatta*, *Padmaprabhritaka*).
- **Bharavi** (Court Poet of Simhavishnu, Founder of Imperial Pallavas) wrote Sanskrit work, *Kritarjuniya* - story of the conflict between Arjuna and Siva and **Dandin**, patronised by **Narasimhavarman – II** of Pallava Dynasty *Kavyadarsa* and *Dasakumaracharita*.
- The period saw codification of Puranas, and the final compilation of Ramayana and Mahabharata.

Buddhist Literature:

- **Arya Deva** and **Arya Asanga** of the Gupta period are the most notable writers.
- The first regular Buddhist work on logic was written by **Vasubandhu**.
- **Vasubandhu's** disciple, **Dignaga**, was also the author of many learned works.

Jain Literature

- **Vimala** produced a Jaina version of **Ramayana**.
- **Siddhasena Divakara** laid the foundation of logic among the **Jainas**.
- This literary legacy shaped Indian classical traditions for centuries.

Science and Technology

- Gupta-era scientists laid the foundations of Indian contributions to the global knowledge pool:
- **Aryabhatta**: Author of **Aryabhattiyam**, dealing with **arithmetic, geometry, and algebra**.
 - Proposed that Earth rotates on its axis, explained **solar and lunar eclipses**, calculated **π** and the Earth's circumference.
- **Varahamihira**: Wrote *Brihat Samhita*, an encyclopaedia of astronomy, weather, astrology, architecture, and botany.
- **Brahmagupta**: Introduced **zero as a number**, negative numbers, rules of arithmetic and algebra. Wrote *Brahmasphutasiddhanta*.
- Advances in **medicine** (Navanitakam), **veterinary science** (*Hastyayurveda*), and **chemistry** (use of mercury and metals in medicine) were notable.
- The **Iron Pillar at Mehrauli**, which hasn't rusted in 1500 years, exemplifies Gupta metallurgy.

Education and Learning

- The Guptas patronized higher education:
- **Nalanda University**, founded by **Kumaragupta I**, became a global centre of learning in Buddhist studies, medicine, mathematics, and more.
- Hosted students and scholars from **China, Korea, Japan, Tibet, Persia, and Southeast Asia**. Chinese monk **Xuanzang (Hsuan Tsang)** studied and taught here.
- Institutions emphasized both **religious and secular education**.

Coinage and Economy

- The Guptas issued **highly refined gold coins (dinaras)** and **silver coins**, showcasing the empire's economic prosperity and artistic finesse.
- **Obverse** typically featured **royal portraits**, while the **reverse** bore images of **deities, symbols, or motifs**, blending political power with religious legitimacy.
- Gupta Coinage is a **window into the Gupta worldview**, showcasing their achievements in **statecraft, religion, economy, and aesthetics**.



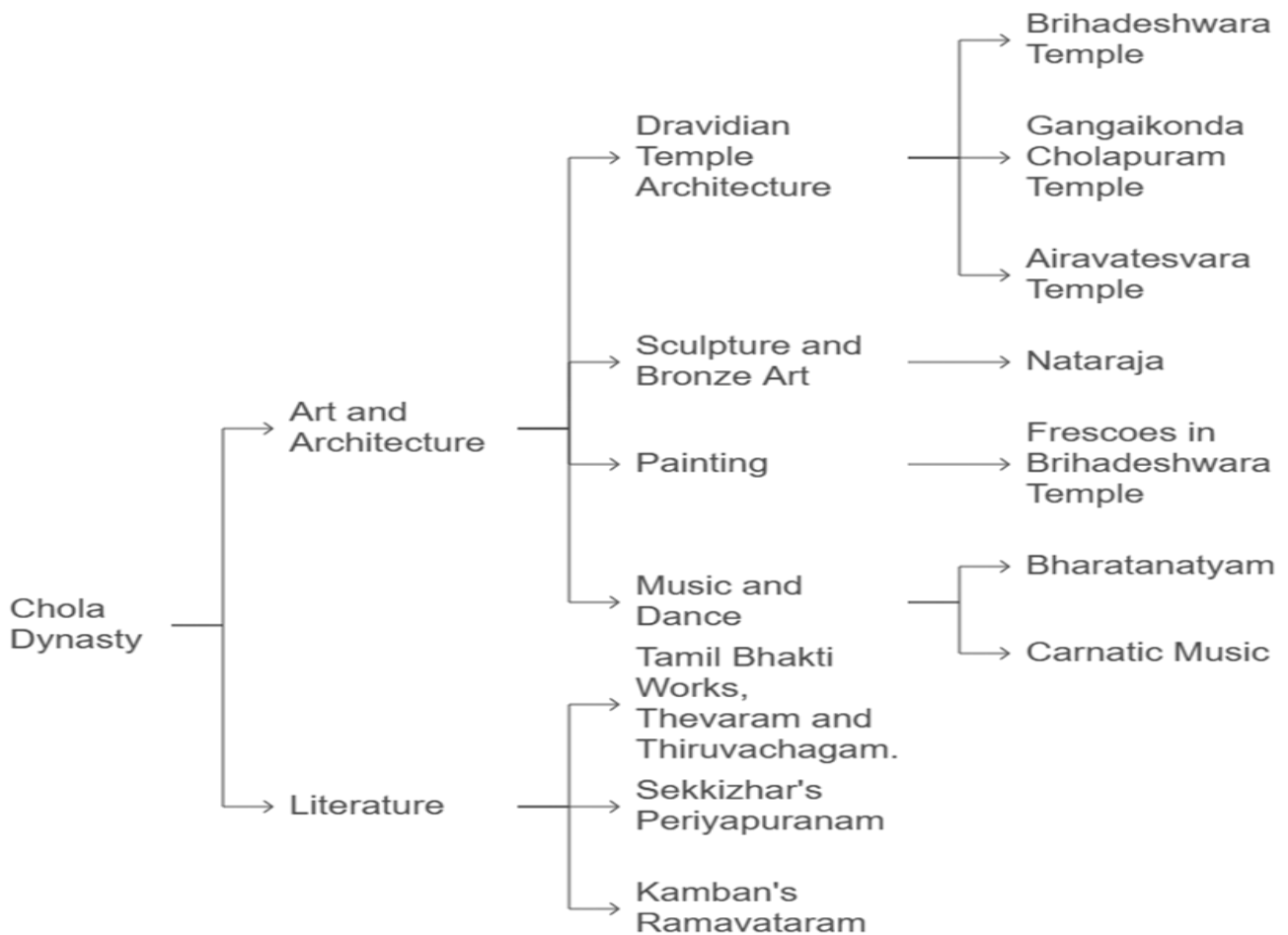
Gupta Paintings

- Ajanta Paintings: They depict various events in the life of Gautama Buddha and the previous Buddhas.
- These paintings are lifelike and natural.
- They are marked by the brilliance of their colours, which have not faded even after 14 centuries or so.
- The paintings at Ajanta is the tempera, “dry fresco / Fresco secco”.

Contribution to Art and Architecture



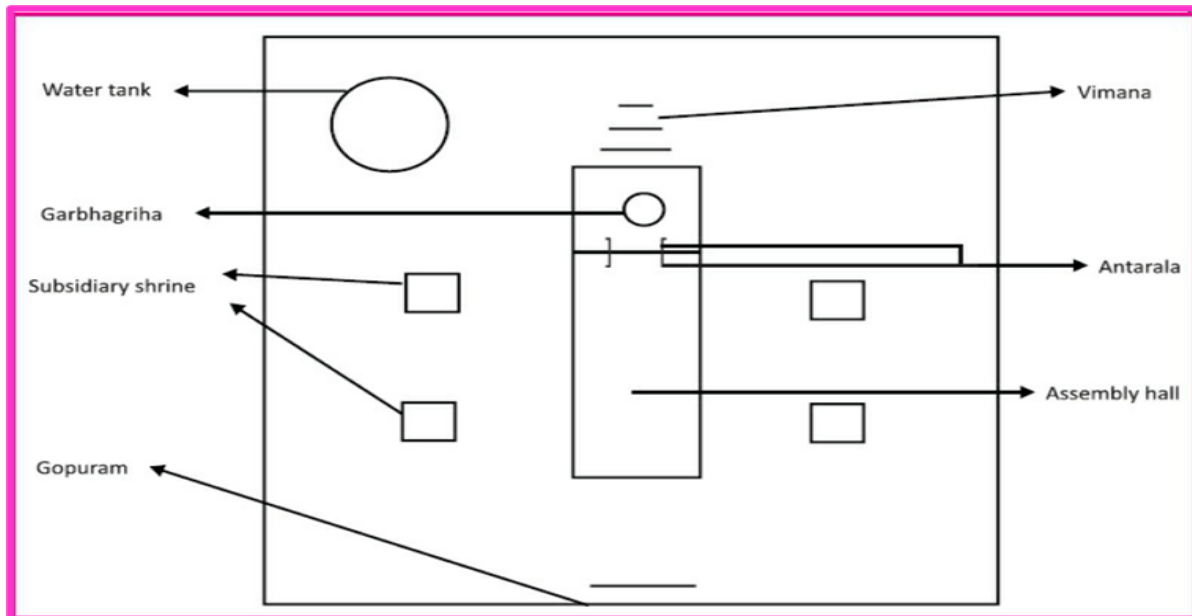
Chola Dynasty's Cultural Contributions



- When world leaders gathered at Bharat Mandapam for the **G-20 Summit in 2023**, they were welcomed by a majestic bronze statue of **Lord Nataraja** – not just a sculpture, but a timeless symbol of India's artistic soul. This masterpiece, rooted in the **legacy of the Cholas**, reflects an era when **art, devotion, and statecraft** flourished together. **The Group of Monuments at Mahabalipuram and the Great Living Chola Temples are internationally recognized for their historical and cultural significance.**

1. Temple Architecture

- Cholas gave a definitive form to Dravidian temple architecture.
- e.g Brihadeshwara Temple (Thanjavur, built by Rajaraja I, 1010 CE):
 - UNESCO World Heritage Site.
 - 216 ft high Vimana (shikhara) made from granite without mortar.
 - Massive Nandi monolith and axial layout symbolizing cosmic geometry.
- **Gangaikonda Cholapuram Temple** (Rajaraja Chola's successor, Rajendra I):
- **Airavatesvara Temple** (Darasuram, Rajaraja II).



2. Sculpture and Bronze Art

- Cholas excelled in bronze casting using the lost-wax technique (Cire Perdue).
- The Nataraja (cosmic dance of Shiva) became a cultural symbol—dynamic yet balanced, spiritual yet technical.
- Temple walls depict vivid and expressive sculptures of gods, devotees, and dancers.



3. Painting

- Though few Chola paintings survive, **frescoes in Brihadeshwara Temple** show vibrant scenes from Hindu mythology.
- Influenced later Nayaka and Vijayanagara mural traditions.

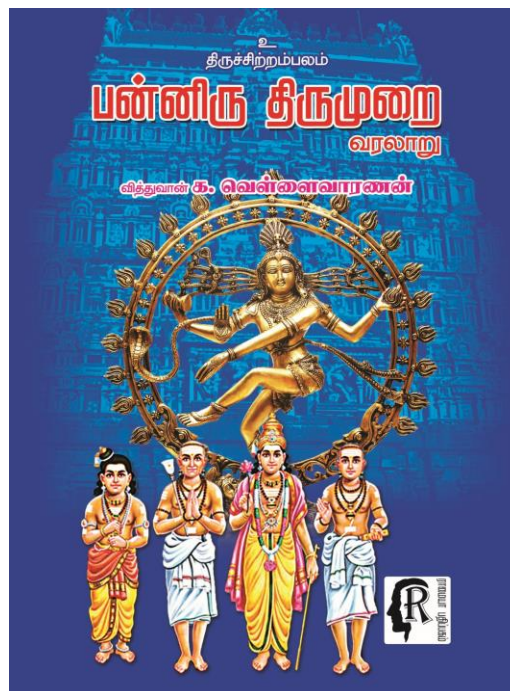
4. Music and Dance

- Temples functioned as **cultural hubs** for Bharatanatyam and Carnatic music.
- **Devadasi system**, though controversial later, originated in this period and preserved dance traditions.

- Cholas supported **temple orchestras**, with inscriptions detailing instruments and musicians' roles.

5. Contribution to Literature

- Literature flourished in both Tamil and Sanskrit.
- Tamil Bhakti works, especially Thevaram and Thiruvachagam, were revived, compiled, and set to music in temples.
- Sekkizhar's Periyapuranam (12th century): Biographies of 63 Nayanmars, composed in royal courts.
- Kamban, the greatest Tamil poet of the period, composed the Ramavataram (Kamban Ramayanam), a retelling of Valmiki's Ramayana in Tamil, blending Bhakti, classical aesthetics, and Dravidian ethos.



Governance and Maritime Expansion

- Local Self-Government: **Kudavolai System**
- Naval Power: **Expeditions to Southeast Asia**, spread Indian culture (e.g., Angkor Wat influenced Chola architecture).

Conclusion:

- The Gupta and Chola periods represent the **zenith of classical Indian civilization**, each in its region and context. The Guptas nurtured a pan-Indian cultural identity rooted in **Sanskritic learning, science, and universal aesthetics**, while the Cholas demonstrated how **regional language, art, and administration** could flourish with global influence. Together, their contributions formed the bedrock of India's **heritage, spiritual diversity, and cultural continuity**, resonating across centuries and shaping the subcontinent's civilizational identity.



5) Discuss the significance of the lion and bull figures in Indian mythology, art and architecture.

- Animal symbolism has been a **central feature of Indian civilization** since the Harappan era. Among the most enduring symbols are the lion and the bull, which appear repeatedly across mythology, religious traditions, sculpture, and architecture. These animals **represent power, protection, fertility, dharma, and cosmic order**, and their depiction across time reflects India's evolving but continuous cultural ethos.



Bull Capital, Rampurva, Bihar



Lion Capital, Sarnath Pillar.



Nandi, Lepakshi Temple.



Lion Capital, National Emblem on Indian Currency.

Aspects	Lion	Bull
Mythology	Hinduism: The lion (Simha) is associated with Goddess Durga, who rides a lion in her battle against Mahishasura, representing divine justice and strength. Narasimha, the man-lion avatar of Vishnu, symbolizes fierce protection of righteousness.	Hinduism: Primarily the devoted vahana (mount) and gatekeeper of Lord Shiva. Nandi symbolizes unwavering devotion (bhakti), righteous duty (dharma), strength, and virility.
Mythology	Jainism: The lion is the symbol of Mahavira, the 24th Tirthankara, representing spiritual courage and renunciation.	Jainism: Bull (Vrishabha/Rishabha) is the primary emblem of the first Tirthankara, Rishabhanatha (Adinatha). The bull signifies Rishabhanatha's association with strength, determination, and the establishment of dharma (righteous order) in the current cosmic cycle.
Mythology	Buddhism: The quintessential symbol of the Buddha himself, known as Shakyasimha (Lion of the Shakyas). The Buddha's teachings, described as the "Simhanada" or lion's roar – fearless and far-reaching.	Buddhism: While less central than the lion, the bull occasionally appears. It can represent the Buddha's clan (Shakya) or, more abstractly, steadfastness and diligence on the path. In some Jataka tales (stories of Buddha's past lives), he takes the form of a bull.

Mythology	Symbolic Meaning: Lion: Strength, sovereignty, courage, protection, divine wrath (Narasimha), feminine power (Durga), and Dharma (Buddha's roar).	Symbolic Meaning: Bull: Fertility, patience, devotion (Nandi), agricultural prosperity, and foundational cosmic order.
Art and Architecture	Pillars : Lion Capital of Ashokan Pillar at Sarnath - National Emblem of India - Symbol of authority and righteous rule.	IVC - Terracotta bull figurines, seals depicting humped bulls (zebu), and bull motifs on pottery suggest that the bull held a symbolic or sacred position in Harappan society.
Art and Architecture	Throne Bases : (Simhasana): Integral platforms for Buddha/Tirthankara images, signifying spiritual sovereignty through carved lion supports. Torana Guardians: Lions prominently guarded stupa and temple gateways (e.g., Sanchi toranas).	Pillars and Stupas : Bull Capital, Ashokan Pillar at Rampurva, Bihar. The bull is depicted with remarkable realism, muscular structure, and natural posture.
Art and Architecture	Temple Architecture: Exquisite depictions of Durga slaying Mahishasura and Narasimha illustrate the fusion of art with religious narrative. The Yali, a lion-like mythical creature, also features widely in South Indian temple sculpture.	Temple Architecture - Free-standing Nandi figures, often colossal and exquisitely carved (e.g., Lepakshi, Thanjavur Brihadeeswarar Temple), face Shiva shrines. They range from serene and contemplative to powerfully robust, always embodying devotion and strength.

The lion and bull are profound, multi-layered symbols in Indian tradition. The **lion roars as the voice of dharma, spiritual authority (Buddha, Mahavira), royal power, and fierce protection (Narasimha, Durga).** The **bull stands as the emblem of unwavering devotion (Nandi), foundational dharma (Rishabhanatha), and enduring strength.** From Ashokan capitals to temple gateways, from lion thrones to Nandi mandapas, their presence in sculpture and architecture reflects India's **deep-rooted values of power, devotion, and cosmic balance.**

6) The political and administrative reorganization of states and territories has been a continuous ongoing process since the mid-nineteenth century. Discuss with examples.

Colonial Period (1857 - 1947)

1. Administrative Reorganization

(A) Centralization and Bureaucratic Expansion

- 1858: Government of India Act – power transferred from East India Company to British Crown.
- Creation of Indian Civil Services (ICS) as the administrative backbone.
- Introduction of centralized budgeting, judiciary, and codified laws (e.g., Indian Penal Code, 1860).

(B) Provincial Administration and Reorganization

☒ Formation of New Provinces & Reorganization of Existing Ones

Year	Change	Details
1861	Indian Councils Act	Initiated legislative councils in provinces like Bombay, Madras, Bengal.
1874	Assam separated	From Bengal and made a separate province.
1905	Partition of Bengal	Bengal split into East (Muslim majority) and West (Hindu majority); later annulled in 1911 due to nationalist protest.

B. Provincial Administration and Reorganization

☒ Formation of New Provinces & Reorganization of Existing Ones

1911	Capital shifted to Delhi	From Calcutta for strategic and symbolic reasons.
1912	Bihar and Orissa separated	From Bengal and made a new province.
1936	Orissa and Sindh made separate provinces	As part of Government of India Act 1935 implementation.

	1937	Burma separated	No longer part of British India; made a Crown Colony.
C. Princely States vs. British Provinces	• Around 565 princely states ruled indirectly under British paramountcy. • Political integration was absent – states had their own laws and administrations. Chamber of Princes (1921): Forum to manage relations but with limited powers.		
Revenue and Law Administration	• Permanent Settlement (in Bengal) vs. Ryotwari (Madras, Bombay) vs. Mahalwari (UP). • Uniform codes for civil and criminal procedure to centralize control. Creation of High Courts (from 1861 onward) in Calcutta, Bombay, Madras.		

2. Political Reorganization

A. Legislative Reforms and Central-Provincial Division	• 1892 Indian Councils Act: First limited Indian representation in legislature. • 1909 Morley-Minto Reforms: Introduced separate electorates for Muslims. • 1919 Government of India Act: • Dyarchy in provinces: Transferred subjects (e.g., education) vs. Reserved subjects (e.g., police). • Legislative councils expanded, but real power still with the British.
B. Rise of Provincial Autonomy (1935 Act)	• Government of India Act, 1935: • Abolished dyarchy at the provincial level. • Introduced provincial autonomy – elected Indian ministries formed in provinces. • Provinces like Madras, Bombay, UP, Bengal, Bihar, and Central Provinces got elected governments (till WWII). • Created two new provinces – Orissa and Sindh. • Proposed Federation of India (not implemented).

	Year	States Formed	From
B. Creation of New States (1990s–2000s)	2000	Chhattisgarh	Madhya Pradesh
	2000	Jharkhand	Bihar
	2000	Uttarakhand	Uttar Pradesh
	These reflected demands for administrative efficiency, tribal identity, and developmental focus.		
C. Union Territories Restructuring (2019–2020)	- Jammu & Kashmir Reorganisation Act, 2019: - J&K downgraded to UT with legislature; Ladakh made UT without legislature. - Article 370 abrogated. 2020: Daman & Diu merged with Dadra & Nagar Haveli.		

II. Political Reorganization (1947–2025)

	Region	Demand	Outcome
Reorganization due to Identity Movements	Gorkhaland	Nepali-speaking identity in Darjeeling	Ongoing demand, Gorkhaland Territorial Administration (2011).
	Bodoland	Bodo ethnicity	Bodoland Territorial Region formed in Assam (2020).
	Vidarbha, Bundelkhand	Developmental neglect	Demands persist but not granted.

Conclusion (Approx. 50–60 words)

- India's territorial and political map has never been static. From colonial motives of control to post-independence **aims of integration, equity, and autonomy**, the reorganization of states and territories has reflected the country's **diversity and evolving democratic ethos**. As India grows, demands for newer alignments will continue, making reorganization a **living process** of federal evolution.

Geography

7) What are the forces that influence ocean currents? Describe their role in the fishing industry of the world.

Introduction

- Ocean currents are like river flow in oceans. They represent a regular volume of water in a definite path and direction.

Factors that influence ocean Currents:

Ocean currents are influenced by two types of forces namely :

- primary forces that initiate the movement of water;
- secondary forces that influence the currents to flow.

The primary forces that influence the currents are:

- heating by solar energy;
- wind;
- gravity;
- coriolis force.
- **Heating by solar energy** causes the water to expand. That is why, near the equator the ocean water is about 8 cm higher in level than in the middle latitudes. This causes a very slight gradient and water tends to flow down the slope.
- **Wind** blowing on the surface of the ocean pushes the water to move. Friction between the wind and the water surface affects the movement of the water body in its course.
- **Gravity** tends to pull the water down the pile and create gradient variation.
- **The Coriolis force** intervenes and causes the water to move to the right in the northern hemisphere and to the left in the southern hemisphere. These large accumulations of water and the flow around them are called Gyres. These produce large circular currents in all the ocean basins.
- **Differences in water density** affect vertical mobility of ocean currents. Water with high salinity is denser than water with low salinity and in the same way cold water is denser than warm water. Denser water tends to sink, while relatively lighter water tends to rise. Cold-water ocean currents occur when the cold water at the poles sinks and slowly moves towards the equator. Warm-water currents travel out from the equator along the surface, flowing towards the poles to replace the sinking cold water.

Role in the Fishing Industry:

- **Upwelling Zones** – Cold currents (e.g., Humboldt, Benguela) bring nutrient-rich water to the surface, fostering phytoplankton growth and supporting large fish populations.
- **Regional Fishing Grounds** – Major fishing grounds (e.g., New foundland) are located where warm and cold currents converge, enhancing biological productivity.
- **Economic Impact** – Countries with access to such zones (e.g., Japan, Peru) have thriving fishing industries

Additional Points:

- **Fish Migration and Distribution:** Many fish species, including commercially important ones, rely on currents for migration, spawning, and dispersal of eggs and larvae.
- **Climate Change :** Climate change-induced alterations in ocean currents may shift fish distribution patterns and affect their abundance, necessitating changes in fishing practices and resource management strategies.

Conclusion

- Therefore ,proactive adaptation and sustainable management are essential to preserve marine resources and secure the future of global fisheries.

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8) Discuss the meaning of colour-coded weather warnings for cyclone prone areas given by India Meteorological Department.

Introduction

- The India Meteorological Department (IMD) uses a colour-coded warning system to convey the severity of weather events, to aid timely preparedness and response.

The meaning and significance of the color-coded weather warnings

Color-coded Weather Warnings

	NO SEVERE WEATHER EXPECTED Keep up to date with latest forecast
	BE AWARE Remain alert and keep up to date with latest forecast
	BE PREPARED Remain vigilant, keep up to date with latest forecast and take precautions where possible
	TAKE ACTION Remain extra vigilant, keep up to date with latest forecast. Follow orders and any advice given by authorities and be prepared for extraordinary measures

What Do These Colour Codes Mean?

- Green - No advisory:** A green alert means that although there might be a weather event, it doesn't require any kind of advisory to be issued.
- Yellow - Be aware:** A yellow alert denotes bad weather conditions and the probability of the conditions might become worse, which can cause disruptions to daily life.
- Orange - Be prepared:** An orange alert is being issued when extremely bad weather is expected which might cause a disruption to transport, rail, road, and air. Disruption to the power supply is also expected.
- Red - Take action:** A red alert is an alert issued when an extremely bad weather condition is expected to disrupt transport and power supply. It might also pose a risk to life.

Example :

- The IMD had declared code orange alerts, indicating heavy to very heavy rains, in seven districts of Kerala. In the backdrop of the likely formation of Cyclone Tauktae (2021) in the Arabian Sea, **an orange alert has been issued in Kottayam, Idukki, Thrissur, Malappuram, Palakkad, Kozhikode, and Wayanad.**

Note - Significance

- Enhances community preparedness and reduces disaster vulnerability.

- Enables timely evacuation of people and deployment of emergency services.
- Helps in inter-agency coordination (IMD, NDRF, SDRF, local governments).
- Reduces economic losses by protecting assets and infrastructure.
- Promotes public awareness using simple, visual communication

Challenges:

- **Last-mile communication gaps**, especially in remote or rural areas.
- **Low public understanding or trust** in forecasts in some regions.
- **Overwarning or false alarms** may lead to complacency.
- **Limited infrastructure** to act swiftly on red/orange alerts in certain districts.
- **Inadequate coordination** between forecasting and ground-level execution.

Conclusion

- The IMD's colour-coded warning system is a vital instrument in India's climate risk governance. With growing frequency and intensity of cyclones due to climate change, strengthening its accuracy, outreach, and local responsiveness is essential for building a resilient coastal India.

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9) Troposphere is a very significant atmosphere layer that determines weather processes. How?

Introduction:

- The troposphere, the lowest layer of the atmosphere, is where all major weather phenomena occur. Its composition and dynamics make it central to both weather processes and the regulation of Earth's climate.

Significance:

- The troposphere contains majority of the atmospheric water vapor due to its proximity to Earth's surface, which facilitates evaporation from oceans, lakes, and land. This water vapor forms clouds and precipitation, central to the water cycle and weather systems. Water vapor also contributes to global warming by absorbing infrared radiation and trapping heat in the atmosphere. Thus, troposphere has a crucial role in regulating earth's climate as well.
- Temperature decreases with altitude in the troposphere (average lapse rate: $6.5^{\circ}\text{C}/\text{km}$), which drives convection currents. These vertical air movements are essential for the development of storms, cloud formation, and precipitation.
- The dynamics of the troposphere allow for atmospheric instability, which is necessary for the development of severe weather events such as thunderstorms, tornadoes, and hurricanes.
- Differences in heating (land vs ocean, equator vs poles) create pressure differences, setting up winds and atmospheric circulation patterns like trade winds, westerlies, and monsoons. These are confined to the troposphere and directly influence regional and global weather.
- Jet streams, which flow at the upper levels of the troposphere, guide mid-latitude cyclones, affecting weather systems like cold fronts and rainfall.
- Pollution, greenhouse gases, and aerosols introduced into the troposphere impact temperature, cloud properties, and precipitation patterns, further emphasizing its role in modulating weather and climate variability.

Conclusion

- The troposphere is directly in contact with the Earth's surface, making it highly responsive to changes such as albedo. Since all climate change-related patterns—such as global warming, shifting rainfall trends, and increased frequency of extreme weather events—manifest and impact primarily within this layer, the troposphere becomes the most sensitive and affected part of the atmosphere.

10) Mention the significance of straits and isthmus in international trade.

Introduction:

- A **strait** is a narrow water body connecting two larger seas, while an **isthmus** is a narrow land strip connecting two larger landmasses and separating two water bodies. Both facilitate faster, cost-effective, and high-volume trade movement.

Significance of Straits in International Trade

- **Shorten maritime routes**, allowing quicker and cost-effective shipping. *Ex_- The Strait of Malacca* is the shortest sea route between the Indian and Pacific Oceans. A ship traveling from the Middle East to East Asia via the *Strait of Malacca* saves over **1,000 km** compared to the alternative route via the **Lombok Strait**, significantly reducing travel time, fuel consumption, and freight costs.
- **High trade volume passage**: Major proportion of global sea trade, including oil, passes through straits like *Hormuz* and *Gibraltar*. Ex- Strait of Gibraltar - This narrow passage between Europe and Africa connects the Atlantic Ocean with the Mediterranean Sea, serving as a vital trade link between Europe, Africa, and Asia.
- **Essential for global supply chains**, especially for energy, raw materials, and containerized goods. Ex - The *Strait of Hormuz* allows **Very Large Crude Carriers (VLCCs)** to transport oil directly from the Persian Gulf to global markets. Bypassing this strait would require detours of several thousand kilometers around Africa or via less efficient routes, sharply increasing shipping time and costs.

Significance of Isthmus in International Trade

- **Reduce shipping time and cost via canals built on isthmuses.**
 - *Ex:* The *Panama Canal* on the Isthmus of Panama cuts travel by over 13,000 km between Atlantic and Pacific.
- **Reduce maritime distance and cost by enabling shortcuts between oceans**
 - *Ex:* The *Isthmus of Panama* hosts the **Panama Canal**, allowing ships to avoid the long route around South America, cutting travel by over 13,000 km between the Atlantic and Pacific Oceans.
- **Enhance connectivity between major trade regions**
 - *Ex:* The *Isthmus of Suez* is home to the **Suez Canal**, which links the Mediterranean Sea and the Red Sea, providing the fastest sea route between Europe and Asia by avoiding the Cape of Good Hope.
- **Provide scope for new trade routes.**
 - *Ex:* The *Isthmus of Kra* in Thailand could host a future canal to reduce congestion in the Strait of Malacca

Conclusion:

- Straits and isthmuses are trade arteries that ensure smoother, faster, and more economical global commerce.



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11) Describe the characteristics and type of primary rocks.

Introduction:

- Primary rocks, also known as *igneous rocks*, are called *primary* because they are the **first rocks to form** during the Earth's geological history, originating directly from the solidification of molten magma or lava. All other rock types – sedimentary and metamorphic – are derived from them, making them the foundational or parent rocks of the rock cycle.

Characteristics of Primary (Igneous) Rocks:

- **Origin:** These rocks originate from the cooling and solidification of molten magma or lava, making them the earliest form of rocks to develop in the Earth's crust.
- **Texture and Grain Size:** The texture varies based on the cooling rate – rapid cooling produces fine-grained rocks, while slow cooling beneath the surface results in coarse-grained rocks.
- **Absence of Fossils:** As they are formed from molten material, primary rocks do not preserve any fossils.
- **Mineral Composition:** Dominated by silicate minerals like quartz, feldspar, mica, etc.

Types of Primary Rocks

Intrusive rocks and Extrusive rocks.

- When this molten lava comes on the earth's surface, it rapidly cools down and becomes solid. Rocks formed in such a way on the crust are called extrusive igneous rocks. They have a very fine grained structure. **For example, basalt. The Deccan plateau is made up of basalt rocks.**
- Sometimes the molten magma cools down deep inside the earth's crust. Solid rocks so formed are called intrusive igneous rocks.
- Since they cool down slowly they form large grains. **Granite is an example of such a rock.**

Acidic Rocks& Basic rocks

- Acidic rocks are characterised by high content of silica (quartz and feldspar) – up to 80 per cent. The rest is divided among aluminium, alkalis, magnesium, iron oxide, lime etc.
- These rocks have a lesser content of heavier minerals like iron and magnesium. Hence, they are less dense and are lighter in colour than basic rocks.
- These rocks constitute the sial portion of the crust. Due to the excess of silicon, acidic magma cools fast, and it does not flow and spread far away.

Basic Rocks

- These rocks are poor in silica (about 40 per cent); magnesia content is up to 40 per cent, and the remaining is spread over iron oxide, lime, aluminium, alkalis, potassium etc.
- Due to low silica content, the parent material of such rocks cools slowly and thus, flows and spreads far away. This flow and cooling give rise to plateaus.

- Presence of heavy elements imparts to these rocks a dark colour. Not being very hard, these rocks are weathered relatively easily.

Significance:

- Serve as the base for soil formation.
- Contain valuable minerals (e.g., granite for construction, basalt for roads).
- Form the structural foundation of continents and ocean floors.
- Help in understanding Earth's interior and volcanic activity.

Conclusion:

- Primary rocks lay the groundwork of the Earth's crust and form the source material for all other rock types, playing a vital role in the rock cycle.

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12) Examine the potential of wind energy in India and explain the reasons for their limited spatial spread.

Introduction

- Wind energy, a key pillar of India's renewable energy strategy, has seen significant growth but remains geographically concentrated despite the country's vast theoretical potential.

Potential of wind energy in India

- The country currently has the fourth highest wind installed capacity in the world.
- India has a long coastline (7,500+ km) and elevated plateaus — ideal for wind installations.
- The wind resource assessment conducted by the National Institute of Wind Energy indicates an estimated wind power potential of about 695.5 GW at 120 meter and 1,164 GW at 150 meter above ground level in the country. **However, the wind resource is highly site-specific and its commercially exploitable potential is available majorly in eight states.** High Potential States: Tamil Nadu, Gujarat, Karnataka, Maharashtra, and Rajasthan dominate the sector
- **India has crossed a significant milestone, with wind power capacity surpassing 51 gigawatts (GW) as of May**, consolidating its position as the fourth-largest wind energy market globally.
- **Gujarat has emerged as the national frontrunner**, with installed capacity rising to 12,677 MW by March 2025 from 11,722 megawatts (MW) in March 2024 — an annual growth of 8.14 per cent.
- Tamil Nadu, long seen as India's wind energy pioneer, maintained its second-place status, registering a steady 10.71 per cent growth to 11,739 MW from 10,603 MW.
- It is found by **the National Institute for Wind Energy (based in Chennai) that western states have larger potential in terms of a stable, steady, and speedy wind flow.**
- **Hybrid Potential:** States like Rajasthan and Andhra Pradesh offer combined wind-solar opportunities.
- **Repowering Scope:** Older wind farms with sub-1.5 MW turbines in Tamil Nadu, Gujarat, Maharashtra offer high efficiency upgrades.

Factors Contributing to Limited Spatial Spread

Wind Resource Concentration:

- Most viable wind zones are located in the southern and western coastal states where wind speeds are consistently high.
- Many central and northern regions lack commercially viable wind velocity.

Land Acquisition and Terrain Constraints:

- Wind farms require contiguous open land.
- Hilly, forested, or densely populated areas face land availability issues.

Underutilised Manufacturing Capacity:

- Installed only 4.15 GW in 2024–25 vs. 18 GW domestic capacity.
- Inconsistent domestic demand and policy uncertainty have pushed OEMs to pivot towards export markets.
- Note - India's wind turbine manufacturing sector is marked by a striking paradox: While domestic capacity stands at a robust 18 GW annually across 14 original equipment manufacturers (OEM), only 4.15 GW was installed in 2024-25, less than a quarter of available capacity. Yet this manufacturing strength remains largely untapped. Inconsistent domestic demand and policy uncertainty have pushed OEMs to pivot towards export markets, including the United States, Brazil, Australia and parts of Europe. While exports offer temporary reprieve, they underscore a deeper mismatch between domestic manufacturing capabilities and market absorption.

Transmission Bottlenecks:

- In Tamil Nadu, 70 million units of renewable energy went unutilised due to grid issues.
- Grid development continues to lag behind the pace of renewable installations, creating a bottleneck that could stall the energy transition.

Lack of Private Investment in New Regions:

- Developers prefer proven wind corridors with existing infrastructure and ROI assurance.
- Higher project risks in new areas deter investment.

Policy and Regulatory Challenges

The regulatory framework also plays a pivotal role in shaping the spatial distribution of wind energy projects. Inconsistent policies and regulatory hurdles at the state level can deter investors and developers.

- States with old, low-capacity turbines (e.g., Tamil Nadu) have large untapped repowering potential.
- Absence of clear incentives and streamlined procedures limits adoption..

Note - Note - Wind repowering offers a viable opportunity for enhancing generation without acquiring additional land. By replacing older, low-capacity turbines with newer, high-efficiency models, output can potentially double or triple from the same site. States like Tamil Nadu, Maharashtra and Gujarat, home to India's oldest wind farms, many with sub-1.5 MW turbines, are ripe for repowering. However, policy support for repowering remains nascent and must be made economically attractive to drive adoption. Without clear incentives or streamlined procedures, developers remain hesitant to invest in upgrading older sites, many of which operate with turbines below 1.5 MW capacity

Regulatory Volatility:

- Shift from feed-in tariffs to competitive bidding lowered margins and deterred OEM-led development.
- Inconsistent tendering execution impacts investor confidence

Note - India's wind sector has long been affected by policy uncertainty and abrupt regulatory shifts. The move from feed-in tariffs to competitive bidding slashed tariffs, squeezed margins for manufacturers and shifted project development from OEMs to independent power producers. While this transition aimed to drive efficiency, it introduced volatility that continues to unsettle investor confidence.

Import Dependence and High Costs:

- Key components still imported (mostly from China).
- Indian turbines 30–60% costlier than Chinese reducing competitiveness
 - Note- Despite strong manufacturing capacity, India's wind sector struggles with high costs and import dependence. Indian turbines are 30–60% costlier than Chinese ones due to expensive inputs and reliance on imported components like gearboxes and bearings, undermining global competitiveness.
- No dedicated PLI scheme for wind components, limiting the sector's ability to scale and reduce costs effectively.

Cybersecurity Risks:

- Data from imported turbines stored abroad raises concerns
- New MNRE rules mandate **local data storage and centres**, but increase compliance costs.

Note - Imports from countries like China raise significant data security concerns, including OEMs' data collection servers located outside India and vulnerabilities in power system network operations. Real-time operational data must remain domestic and remote control operations must be handled exclusively from within the country. While these measures strengthen data sovereignty, they could further restrict technology options and impose new compliance burdens on OEMs.

Way Forward:

- Upgrade transmission infrastructure.
- Introduce targeted incentives like PLI schemes.
- Localise component manufacturing.
- Ensure policy stability and streamline repowering.

Conclusion

- Only by addressing these core challenges can India unlock the full potential of its wind energy sector and position itself as a global leader in the transition to clean, renewable power.

13) Discuss the natural resource potential of 'Deccan trap'.

Introduction

- The Deccan Trap, formed by extensive volcanic activity, is a basalt-rich region spread across central and peninsular India. Its geological features have given rise to diverse natural resources vital for agriculture, industry, and energy.

Potential Natural Resources

Minerals & Hydrocarbons:

- The Deccan Plateau has significant mineral deposits, including **coal, iron ore, bauxite, limestone, and manganese**.
- The National Geophysical Research Institute (NGRI) has discovered reserves of **oil and natural gas in the Deccan region, which spans across parts of Karnataka, Telangana, and Maharashtra**.

Hydropower Potential:

- Major peninsular rivers like the **Godavari and Krishna**, originating from the Western Ghats, have considerable **hydroelectric potential** due to their elevated gradient and steady flow, supporting energy and irrigation infrastructure.

Building Materials:

- Basalt rocks are extensively quarried for **construction aggregate, road metal, and dimension stones**.

Fertile Soils

- **Fertile black cotton soil (Regur)** derived from weathered basalt supports intensive cotton cultivation.

Geothermal Potential:

- The Deccan Trap's volcanic origin has resulted in a high geothermal gradient, giving rise to hot springs such as those at Bhandara and Tapola in Maharashtra. These indicate subsurface thermal activity and reflect untapped potential for geothermal energy development.

Biodiversity and Forest Resources:

- Parts of the Deccan Trap fall within the Western Ghats, a UNESCO biodiversity hotspot, rich in endemic flora and fauna. The region supports tropical deciduous forests and contributes significantly through timber and non-timber forest products like medicinal plants, gums, and resins.

Tourism Potential:

- The Deccan region's lava plateaus, basalt rock formations offer scope for eco-tourism and geo-heritage tourism, turning geological and fossil resources into avenues for economic development and conservation awareness.

Conclusion

- While the Deccan Trap holds significant resource potential, scientific exploration and sustainable utilisation are key to overcoming geological and ecological challenges and ensuring long-term regional development.



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14) Describing the distribution of rubber-producing countries indicate the major environmental issues faced by them.

Introduction

- Rubber is a major commercial crop cultivated extensively to meet rising global demand, leading to large-scale plantations, especially in Asia and parts of Africa and South America. However, the expansion of rubber plantations has raised serious environmental concerns, particularly related to deforestation, biodiversity loss, and ecological degradation.

Global Distribution of Rubber-Producing Countries:

Example:

- **Asia (dominates 90% of production)** – Thailand, Indonesia, Vietnam, India, Malaysia
- **Africa** – Côte d'Ivoire, Nigeria, Cameroon
- **South America** – Brazil, Guatemala

Major Environmental Issues in Rubber-Producing Regions

Deforestation and Biodiversity Loss:

- Large tracts of tropical forests are cleared for monoculture plantations, especially in Southeast Asia (e.g., Thailand, Indonesia, Vietnam)

Monoculture and Soil Degradation:

- Continuous monoculture reduces soil fertility, affects microbial diversity, and increases dependency on chemical inputs.

Water Resource Stress

- Rubber plants require more water, that reduces ground water and also take away from the share of other plants.
- Soil and ground water contaminating in many rubber processing centre and the latex processing industries discharging partly treated or untreated waste water in the surrounding places which contaminate environment .
- In Nigeria, rubber plantations contribute to water scarcity and local water pollution due to high water use and agrochemical runoff.

Biodiversity loss :

- Conversion of natural forests to rubber monocultures leads to substantial biodiversity loss, including the decline of endemic and threatened species in regions such as Thailand, Cambodia, Laos, and Vietnam.

Climate Change Contribution and Vulnerability:

- Forest clearance releases stored carbon; rubber plantations sequester less carbon than natural forests.

Conclusion

- Rubber cultivation brings economic benefits but causes ecological damage. Sustainable practices—like agroforestry and better land-use planning—are essential to reduce its environmental footprint

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Social Issues

15) Explore and evaluate the impact of 'Work from Home' on family relationships.

Introduction:

- WFH or remote work – key operative word in Post COVID world. As per Forbes , As of 2024, 12.7% of full-time employees in India work from home, while 28.2% work a hybrid model.
- Body Part 1 : Positive impacts – Strengthen emotional bonds+ Active parenting+ More opportunities to women+ Flexibility
- Body Part 2 : Negative Aspects : Blurring of professional/personal boundaries+ Quantity versus quality of family time+Stress+increased screen time+Lack of human interactions+Dual burden on women continues

Conclusion :

- In future, Work-life balance policies with scheduled hours and mandatory digital detoxes.
- Redesign of urban housing to include dedicated workspaces.

16) How is the growth of Tier 2 cities related to the rise of a new middle class with an emphasis on the culture of consumption?

Introduction :

- Tier 2 cities, or emerging urban centres like Amritsar, Bhopal, Chandigarh, Jaipur etc are experiencing transformative infrastructure, cultural and social developments. Middle class seems to be at the forefront of this discourse.

Body Part 1 :

- Reasons for Middle Class Rise - LPG reforms+Higher Education + Skill Development+Global Investment+Remittances + Government initiatives

Body Part 2 :

- Culture of Consumption as Driver of growth : Retail consumerism- Malls + Social media - Startups + Credit availability - Fintech + Social Signalling - Weddings, festival, events etc+ increased disposable income+moderate cost of living in comparison to tier 1 +Rise of Digital Payments

Conclusion :

- Fostering growth and development in Tier 2 and 3 cities is vital for India's journey toward becoming a developed country. By focusing on infrastructure, industries, education, and sustainability, these cities can play a pivotal role in driving economic growth, creating jobs, and improving living standards for millions of people.

17) Given the diversities among tribal communities in India in which specific context should they be considered as a single category?

Tribes definition

- Tribe is a social group having many clans, nomadic bands and other sub groups living on a definite geographical area having separate language, separate and singular culture

Diversity in Tribes

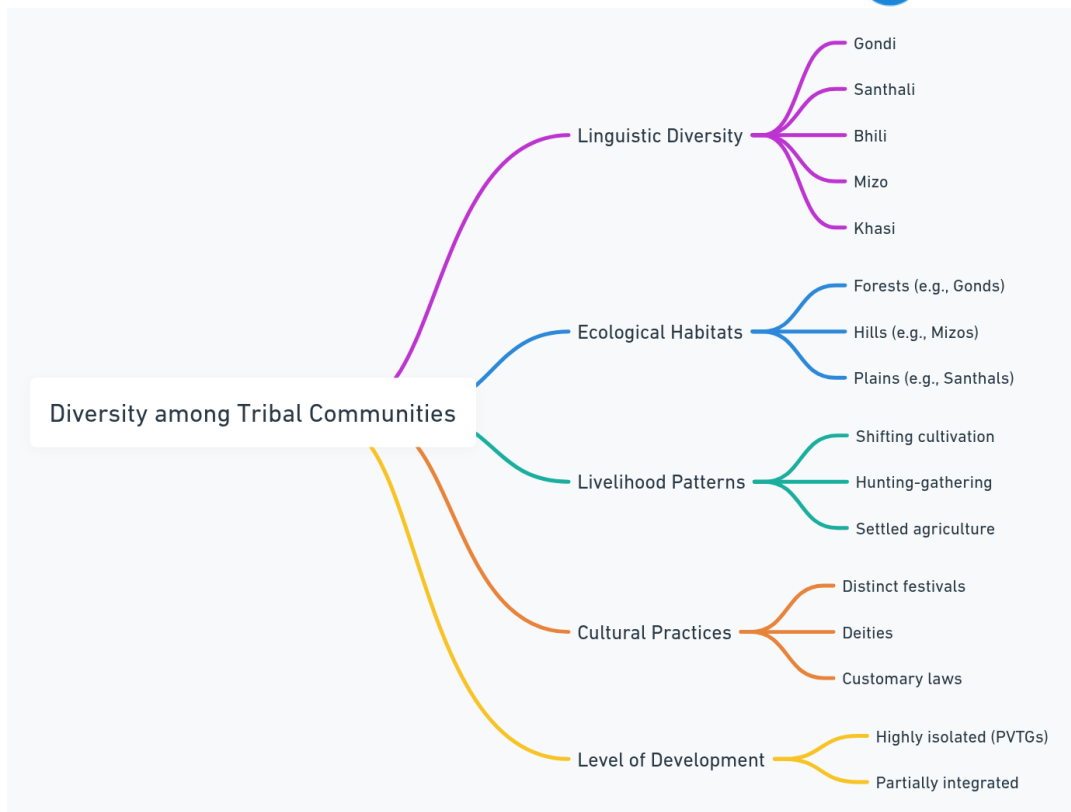
- Different Tribes
- Geographical
- Language
- Culture
- Worship
- Customs

Status of tribal population in India

- According to 2011 census, the tribal population in India is over 104 million which is spread across 705 tribes and accounts for 8.6% of country's population.
- More than 90% of tribal people live in rural areas.
- M.P. has highest tribal population followed by Maharashtra, Odisha and Rajasthan.

The socio-economic condition of tribals:

- **Livelihood status** - 40.6% of tribals live below poverty line vis-a-vis 20.5% non tribals.



CASTE VS TRIBE

- A tribe theoretically is a territorial group while a caste is a socio-cultural group.
- Each tribe has its own distinct language than the other but it is not the case with a caste.





- The tribes have egalitarian system and are not mutually inter-dependent like the castes which show a system of stratification and organic solidarity.



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- A tribe never imposes restrictions on its members regarding the choice of occupation but a caste usually promotes hereditary occupations and the principle of birth.



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- A caste or tribe may change its name and also its mode of livelihood and still retains its collective identity.
- Marriage within the clan is forbidden both in the tribe as well as in the caste.
- Both generally condemn marriage outside the group.



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Single Category (similarities)

- Constitutional and Legal Safeguards
- Socio Economic Backwardness :
- Political Representation
- Displacement and Land alienation
- Cultural autonomy demands
- While it is important to recognize and respect the **diversities within tribal communities**, treating them as a **single category** is both necessary and justified in the **constitutional, legal, political, and developmental** context. However, policies must also remain **sensitive to intra-tribal diversities** to ensure **inclusive and effective implementation**.

18) Analyse the salience of 'sect' in Indian society vis-a-vis caste, region and religion.

Introduction :

- Sect - Refers to group of people who share common beliefs, practices and rituals that distinguish them from other groups+ also refer to religious groups that have separated themselves from an established religion and now follow their own rules.
- **Body part 1 : Sect and Caste - promote common identity, brotherhood, and shared goals during societal transformation.+ socio-economically assertive sub-castesGujjars, Jats, Patidars+ cultural homogeneity and traditional norms**
- **Body Part 2 : Sect and Region- Geographic identity influences sect formation – e.g., Gaddis (nomadic hill tribe), Shaikhs (with sub-sects like Siddiqi, Farooqi, Usmani, Abbasi). + Maharashtra, sects emerged due to:Religious inequality, Muslim invasions, and Political dominance of Muslim rulers over Hindu society.**
- **Body Part 3 : Sect and Religion - Hinduism + Islam+Buddhism+ Christianity**

Conclusion

- **caste, region, and religionsect plays a critical intermediary role + Tool to understand Indian society**

19) Are tolerance, assimilation and pluralism the key elements in the making of an Indian form of secularism? Justify your answer.

Introduction:

- civilisational ethos and social diversity. Indian secularism is rooted in the values of tolerance, assimilation, and pluralism
- Tolerance : Historical Legacy + Constitutional Ethos + Modern Relevance
- Assimilation : Composite culture+languages(urdu)+Cuisine(Hyderabadi biryani, Samosa)+Dressing(Sherwani, banarasi Saree)+Festivals +Music +Architecture
- Pluralism : Constitutional provisions (Art 29 , 30)+Sarva Dharma Sambhaav +

Conclusion

- functional pillars + inclusive governance+ social harmony+constitutional morality

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20) Elucidate the relationship between globalization and new technology in a world of scarce resources with special reference to India.

Introduction :

- Define Globalisation : Globalization means growing interdependence and integration of economies, societies and cultures from across the world. It is brought about by cross border trade of goods, services and technology and flow of investment and people.

New Technology :

- Show in diagram - Generative AI+Quantum Computing+ UAV+5G+Biotechnology +Nueralink +Green Energy+Telemedicine+Nano Tech+Space Tourism

Resource Scarce World :

- Technology transfer + Resource optimization+Circular Economy +Digital connectivity + Research and Development +Drones

Challenges

- Digital Divide + new modes of warfare+surveillance+Deglobalisation and protectionism+Climate Change Scepticism

Conclusion-

- mutually reinforcing driversleveraging global opportunitiesnurturing local innovationeconomic growth remains ecologically sustainablesocially inclusive