
Prelims Exam Topics

SUSHRUTA

Context

The Royal College of Surgeons of Edinburgh, regarded as the world's oldest surgical institution, recently installed a 90-kg bronze statue paying tribute to Sushruta, the ancient Indian medical figure.

About Sushruta

- He lived around 600 BCE.
- He is globally recognized as the founding figure of both surgery and plastic surgery.
- His legacy is preserved in the Sushruta Samhita, a comprehensive medical text from antiquity that continues to hold significant scholarly and historical value today.

TUNGABHADRA RIVER

Context

Karnataka, Andhra Pradesh and Telangana have agreed to enhance cooperation on irrigation projects and equitable water sharing in the Tungabhadra Basin, highlighting a collaborative approach to inter-State river management.

About the Tungabhadra River

- It is the **largest tributary** of the Krishna River.
- The river is regarded as **sacred by Hindus** and is referred to as **Pampa** in the Ramayana.
- The **Tunga River** originates near **Varaha Parvatha** at **Kurasa**, while the **Bhadra River** rises at **Gangamoola** near **Kudremukh** in Karnataka's **Chikkamagaluru district**.
- The river joins the Krishna River at Sangamaleshwaram.
- Of its total length, **382 km** flows through Karnataka, **58 km** forms the Karnataka–Andhra Pradesh boundary, and the remaining **91 km** flows within Andhra Pradesh.
- The land between the **Tungabhadra** and **Krishna** rivers is known as the **Raichur Doab**.
- Hampi, the former capital of the Vijayanagara Empire, is situated on the banks of the Tungabhadra River.

RARE TORNADO IN TAMIL NADU

Context

A rare tornado-like funnel cloud touched down in Thoothukudi, Tamil Nadu during a thunderstorm, an exceptionally rare occurrence in southern India during the southwest monsoon season. Meteorologists identified it as likely a landspout rather than a classic tornado.

What is a tornado?

- Tornadoes are violently rotating columns of air, extending from a thunderstorm, which are in contact with the ground. Tornadoes develop when wind variations with height support rotation in the updraft.
- **Conditions Required for Tornado Formation:**
 - Atmospheric Instability: Warm, moist air near the surface and cool, dry air at higher altitudes create strong rising air currents (updrafts).
 - Wind Shear: Change in wind speed and/or direction with height strengthens the updraft and initiates rotation.
 - Tornado Formation: The combination of strong updrafts and rotating winds can develop into a tornado.

NETRA AIRBORNE EARLY WARNING AND CONTROL (AEW&C) SYSTEM

Context

The Defence Research & Development Organisation (DRDO) has handed over the Final Operational Clearance (FOC) certificate for the indigenous Netra Airborne Early Warning and Control (AEW&C) system to the Indian Air Force (IAF).

About Netra Airborne Early Warning and Control (AEW&C) System

- Netra acts as a **flying radar platform**, capable of detecting, tracking, and identifying aerial and maritime threats beyond the coverage of ground-based radar systems.
- **Developed By:** The Centre for Airborne Systems (CABS) under DRDO, in collaboration with the Indian Air Force (IAF) and Indian defence industry partners.

LIPULEKH PASS

Context

India has resumed border trade with China through the **Lipulekh Pass** in Uttarakhand after a six-year suspension imposed during the COVID-19 pandemic in 2020.

About Lipulekh Pass

- **Lipulekh Pass** is located at the tri-junction of **India, Nepal, and China (Tibet)**.
- **India:** Situated in the **Vyas Valley** of **Pithoragarh district**, in the **Kumaon region** of **Uttarakhand**.
- **Gateway to Kailash Mansarovar:** It is one of the shortest and most preferred routes for pilgrims undertaking the **Kailash Mansarovar Yatra**.
- **Logistics Infrastructure:** Base camps at **Gunji** and **Nabhidhang** provide customs facilities, border security posts, and storage infrastructure.



VENEZUELA RARE SEISMIC DOUBLET

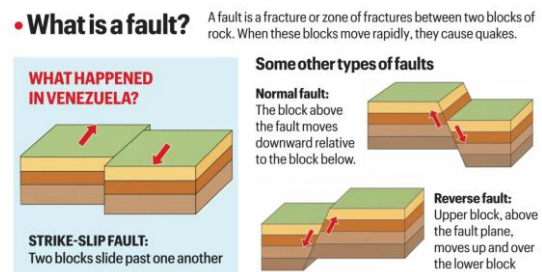
Context

Venezuela declared a nationwide state of emergency after two powerful earthquakes (Magnitude 7.2 and 7.5) struck its north-central coast within 39 seconds.

About Seismic Doublet

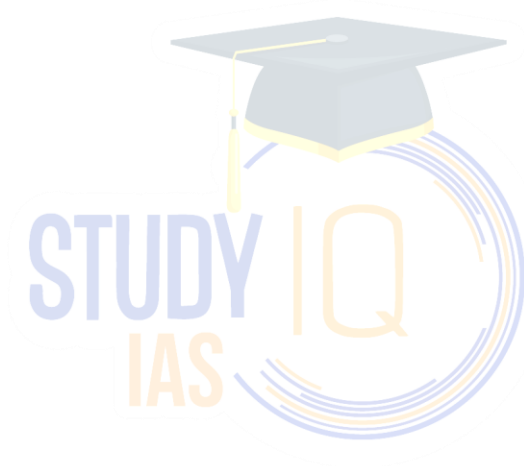
- A Seismic Doublet is a rare seismic phenomenon in which two earthquakes of comparable magnitude occur within a short time interval (from seconds to a few hours) and in close geographic proximity.
- Although the two earthquakes originate from distinct but closely related fault ruptures, they are causally linked, with the first earthquake triggering the second through stress transfer, while remaining seismologically independent.
- Mechanism of Formation

- In a typical earthquake, most of the accumulated tectonic stress is released in a single mainshock, followed by smaller aftershocks.
- In a seismic doublet, the first earthquake does not completely release the accumulated stress. Instead, it transfers static stress to a nearby locked fault segment (asperity), triggering a second major earthquake on an adjacent fault.
- Additionally, seismic waves generated by the first earthquake can destabilize nearby pre-stressed faults, causing them to rupture soon after.



Why Are Seismic Doublets More Destructive?

- Prolonged ground shaking due to two successive major earthquakes.
- No recovery time, as structures weakened by the first quake are hit again almost immediately.
- Shallow focus (10 km) results in stronger surface shaking.
- Higher risk of liquefaction, especially in water-saturated soils.
- Increased chances of landslides in mountainous regions.
- Seismic amplification in soft sedimentary basins can intensify damage.



Mains Exam Topics

CRIMINALISATION OF POLITICS

Context

Around 31% of Rajya Sabha MPs have declared criminal cases against themselves, of whom 16% have declared serious criminal cases, according to an analysis by the Association for Democratic Reforms and National Election Watch.

What are the causes of Criminalisation of Politics?

- **Politician-Criminal Nexus:** Criminals enter politics to gain protection, influence and legitimacy, while political parties rely on them for money and muscle power. This creates a mutually beneficial cycle.
- **Delayed Justice System:** Slow trials and low conviction rates for MPs and MLAs reduce the deterrent effect of criminal charges, allowing parties to continue fielding such candidates. The ADR Report 2024 noted a 55% increase in MPs with criminal cases since 2009.
- **High Election Expenditure:** Expensive election campaigns encourage candidates and parties to depend on black money and financial support from criminal networks.
- **Identity-Based Voting:** Electoral choices are often influenced by caste, religion or community identity rather than the criminal background of candidates.

What are the consequences of Criminalisation of Politics?

- **Weakens Democratic Institutions:** The increasing presence of legislators with criminal backgrounds reduces public trust in elections and democratic institutions.
Example: Low voter turnout in constituencies dominated by criminal politicians reflects public disillusionment.
- **Erodes Rule of Law:** When lawmakers themselves face serious criminal charges, the principle of equality before law is weakened, reducing citizens' faith in the justice system.
- **Policy Paralysis:** Legislators with criminal backgrounds often prioritize personal interests over public welfare, delaying governance and key reforms.
Example: Criminal justice reforms are often stalled due to the influence of such legislators.
- **Rise in Crime and Corruption:** Criminal elements in politics create a culture of impunity, encouraging corruption, extortion and organized crime.
Example: NCRB data indicates higher political crime rates in states with a larger number of legislators facing criminal cases.

- **Decline in Ethical Governance:** The election of candidates accused of serious offences is contrary to the constitutional values of integrity and public service.
Example: Legislators charged with offences such as rape or murder continuing in public office weaken ethical governance.
- **Misuse of State Machinery:** Political influence may be used to manipulate investigations, influence witnesses and delay trials, weakening accountability.
- **Discourages Honest Candidates:** The dominance of money and muscle power discourages capable and law-abiding individuals from entering politics.
Example: Many educated professionals avoid politics due to unfair competition from candidates with criminal backgrounds.

What reforms are needed?

- **Strengthen Candidate Disqualification Laws:** Amend the **Representation of the People Act (RPA)** to disqualify candidates facing charges for serious offences after charges are framed, as recommended by the **244th Law Commission Report (2014)** and the **Second Administrative Reforms Commission (2008)**.
- **Ensure Speedy Trials through Fast-Track Courts:** Establish dedicated fast-track courts to dispose of criminal cases involving legislators within a fixed timeframe, as recommended by the **244th Law Commission Report**.
- **Increase Accountability of Political Parties:** Enforce strict penalties on political parties that repeatedly field candidates with serious criminal backgrounds, in line with the Supreme Court's directions.
- **Reform Election Financing**
 - Introduce **partial state funding of elections**, as recommended by the **Dinesh Goswami Committee (1990)** and **Indrajit Gupta Committee (1998)**.
 - Strengthen financial transparency through mandatory disclosure of all political donations and independent audits of party accounts, as suggested by the **255th Law Commission Report (2015)**.
- **Strengthen Institutional Coordination:** Implement the **N.N. Vohra Committee (1993)** recommendation to establish a specialised nodal agency for intelligence sharing and tracking the criminal-politician-business nexus.
- **Adopt Stronger Election Commission Reforms:** Consider the **Election Commission of India (ECI)** proposal for a lifetime ban on convicted politicians instead of the existing six-year disqualification period after release.

- **Enhance Voter Awareness:** Greater public awareness, along with informed use of the NOTA option, can discourage political parties from nominating candidates with criminal backgrounds.

