

AUGUST 4TH WEEK CA COMPILATION

1. India's Heavy Lunar Module Launch Vehicle – A New Era in Space Exploration

- India's space journey has reached a **significant milestone** with the development of a **heavy lunar module launch vehicle**.
- This advancement reflects the **nation's growing capabilities in deep space exploration and strengthens its status as a key space-faring nation**.
- The successful deployment of such a vehicle is critical for **ambitious lunar missions like Chandrayaan-3 and beyond**.

Technological Breakthrough

- The heavy launch vehicle, primarily based on the **GSLV Mk III (renamed LVM3)**, is engineered to **carry heavier payloads into space, including lunar landers, orbiters, and potentially human missions in the future**.
- With a payload capacity of around **4 tonnes to GTO (Geosynchronous Transfer Orbit)**, LVM3 is **India's most powerful operational rocket**.

Strategic and Scientific Significance

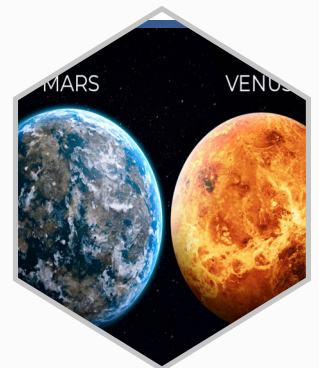
- The heavy lunar launch capability enables **India to participate in lunar resource exploration**, such as water ice in permanently shadowed lunar regions.
- It supports India's ambition for a **future lunar base** and participation in international missions.
- Scientifically, it allows for **deeper lunar surface studies** and advanced technology demonstrations.

Global Collaborations and Future Prospects

- India is increasingly being seen as a **reliable launch partner**. The success of heavy lift missions enhances its **attractiveness for international cooperation**.
- Future plans include the **Gaganyaan crewed mission** and potential **Mars and Venus explorations**, all relying on this robust launch vehicle technology.

Conclusion

India's heavy lunar module launch vehicle is more than a technological achievement—it is a symbol of national pride and a strategic tool for space diplomacy. It propels India closer to becoming a major player in the global space arena.



AUGUST 4TH WEEK CA COMPILATION

2. Gaganyaan: Air Drop Test – A Milestone in India's Human Spaceflight Mission

- India's ambitious **Gaganyaan Mission**, spearheaded by **ISRO**, took a significant step forward with the successful completion of the **Air Drop Test (ADT)** of the **Crew Module**.
- This test is a crucial component of validating systems for India's first **human spaceflight program**.

Background of Gaganyaan Mission

Launched by ISRO, the **Gaganyaan Programme** aims to send a **crewed spacecraft** into **Low Earth Orbit (LEO)**, making India the **fourth country** to achieve this feat after the **USA, Russia, and China**. The mission seeks to demonstrate **indigenous capability** in **human spaceflight** and promote advancements in **science and technology**.

Key components include:

- **Crew Escape System (CES)**
- **Crew Module (CM)**
- **Service Module (SM)**
- **Human-rated Launch Vehicle (HRLV)** based on **GSLV Mk III**

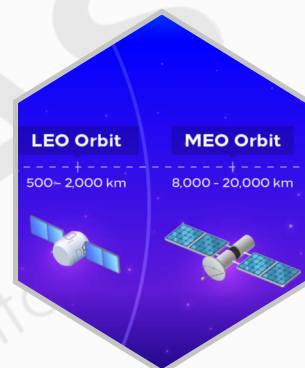
About the Air Drop Test

The **Air Drop Test**, conducted on **August 23, 2025**, involved the release of the **Crew Module** from a **Chinook helicopter** at an altitude of **4.5 km**. The purpose was to evaluate the **parachute deployment system** and the **safe landing mechanisms** of the module in a real-time environment.

- The module descended using a sequence of **pyrotechnic devices, drogue parachutes, and main parachutes**.
- It landed safely in the designated zone at the **Integrated Test Range (ITR), Odisha**.

Technological and Strategic Importance

- **Safety Assurance:** The test ensures the **Crew Module** can **safely land** after re-entry or emergency separation.
- **Indigenous Capability:** Demonstrates India's ability to develop **critical safety systems** without foreign dependence.
- **Collaboration:** Strengthens synergy between **ISRO, Defence Research and Development Organisation (DRDO)**, and the **Indian Air Force**.
- **Global Standing:** Reinforces India's image as a **responsible space-faring nation** with human-rated capabilities.



AUGUST 4TH WEEK CA COMPILATION

Significance for Gaganyaan

- The test validates the **Crew Escape System**, ensuring **astronaut safety** during emergencies.
- Proves the robustness of **deceleration systems**, which are vital for safe **atmospheric re-entry** and **splashdown**.
- It is a precursor to upcoming **Uncrewed Test Flights**, paving the way for the **first human mission in 2025-26**.



Strategic and Technological Implications

- Enhances India's **aerospace capability** and **indigenous technology** development.
- Positions India as the **fourth nation** to independently send humans to space.
- Boosts the country's **geopolitical standing** in **space diplomacy** and **commercial space ventures**.

Challenges Ahead

Despite the success of the Airdrop Test, several challenges remain:

- Ensuring life-support systems** perform under orbital conditions.
- Human-rating the launch vehicle** to international safety standards.
- Training astronauts** and conducting **uncrewed test missions** before the final launch.

ISRO plans multiple **Test Vehicle Abort Missions (TV-D1, D2, etc.)**, followed by an **uncrewed Gaganyaan flight** before the **crewed mission**, expected in **2026**.



3. Trump and the Rise of US State Capitalism: A Contemporary Analysis

- Donald Trump** marked a significant shift in **US economic and political paradigms**, fostering a form of **state capitalism** within a traditionally **free-market economy**.
- The rise of **US state capitalism** under Trump's tenure, analyzing its impact on domestic policies and global economic dynamics.

Conceptualizing US State Capitalism

State capitalism refers to an economic system where the **government** exerts substantial influence over the **market economy**, often through **direct ownership**, **regulation**, or **strategic partnerships** with private enterprises. Historically, the US has championed **laissez-faire capitalism**, but Trump's administration introduced a more **protectionist**, **interventionist** approach, blending **nationalism** with **capitalist incentives**.

Trump's Economic Policies and State Capitalism

The Trump administration prioritized "**America First**", emphasizing **economic nationalism**. Key policies included:



AUGUST 4TH WEEK CA COMPILATION

- **Trade Protectionism:** Imposition of **tariffs** on China, the EU, and others aimed at protecting **domestic industries**.
- **Industrial Revival:** Efforts to revitalize **manufacturing** and **energy sectors** via **subsidies** and **deregulation**.
- **Strategic Alliances:** Government involvement in **corporate decisions**, exemplified by negotiations with major firms to safeguard **US jobs**.



These policies marked a departure from **globalization** and embraced a more **state-involved capitalism**, reflecting a blend of **market forces** and **government direction**.

Implications for Domestic and Global Economy

- Domestically, Trump's model sought to **strengthen national sovereignty** by reducing reliance on **foreign supply chains** and enhancing **self-reliance**.
- However, critics argue it risked **market distortions** and **trade wars**.
- Globally, the US's assertive economic stance under Trump challenged the **multilateral trade system**, prompting rival nations to reconsider their own **state capitalism models** and **economic strategies**.



4. Voluntary National Review

- The **Voluntary National Review (VNR)** is a **country-led** process through which **UN Member States** present their progress in implementing the **Sustainable Development Goals (SDGs)** at the **United Nations High-Level Political Forum (HLPF)**.
- It is a crucial tool that promotes **transparency, accountability, and peer learning** among nations in their pursuit of the **2030 Agenda for Sustainable Development**.



Significance of the Voluntary National Review

- The VNR serves multiple purposes. Primarily, it allows countries to **assess their progress** on the 17 SDGs, identifying **gaps, challenges, and best practices**.
- It facilitates **policy coherence** by aligning national development plans with global goals.
- Moreover, VNRs encourage **multi-stakeholder engagement**, involving **government agencies, civil society, private sector, and academia**, ensuring an inclusive approach to sustainable development.



AUGUST 4TH WEEK CA COMPILATION

India's Role in Voluntary National Review

- India has been a consistent participant in the VNR process since 2016, showcasing its commitment to the **SDGs**.
- India's VNR reports highlight significant strides in areas such as **poverty alleviation, clean energy, healthcare improvements, and education reforms**.
- The country has adopted a **whole-of-government** and **whole-of-society** approach, integrating SDGs into its **national policies** like the **National Indicator Framework (NIF)** and linking them with flagship programs like **Swachh Bharat Abhiyan** and **Digital India**.



Challenges in Implementation and Reporting

- **Data gaps** and **quality issues** hinder comprehensive monitoring.
- **Financial constraints** and capacity limitations affect the execution of SDG-related projects.
- Furthermore, achieving **equity** remains a concern, especially for vulnerable populations.
- Ensuring timely, accurate, and transparent VNR reports requires strengthening **institutional frameworks** and enhancing **data-driven governance**.



5. Global AI Governance at the UNGA

- The **United Nations General Assembly (UNGA)** has increasingly prioritized **Artificial Intelligence (AI)** as a critical issue on the global agenda.
- The rapid advancement of **AI technologies** has transformed economies, societies, and governance structures, raising concerns about **ethical, security, and regulatory** challenges.
- In response, the UNGA is spearheading efforts to establish a framework for **Global AI Governance** aimed at promoting **responsible innovation** and **inclusive development**.



Need for Global AI Governance

- The proliferation of AI across borders necessitates **international cooperation** to address risks such as **privacy violations, algorithmic biases, job displacement, and potential military applications** of AI.
- The lack of **uniform standards** and **regulatory mechanisms** risks creating **geopolitical tensions** and a fragmented global digital landscape.
- Hence, a **multilateral approach** through the UNGA is crucial to ensure that AI technologies are developed and deployed in alignment with **human rights, democratic values, and sustainable development goals (SDGs)**.



AUGUST 4TH WEEK CA COMPILATION

UNGA's Role and Initiatives

- The UNGA has taken proactive steps including **resolutions** calling for member states to collaborate on **AI ethics, transparency, and accountability**.
- It encourages the formation of an **international AI regulatory body** to oversee compliance and promote **data sharing frameworks** while safeguarding **sovereignty**.
- Additionally, the UNGA supports the work of specialized agencies like **UNESCO** and the **International Telecommunication Union (ITU)** in crafting **ethical guidelines** and **technical standards** for AI.



Challenges in Global AI Governance

- Despite consensus on the need for governance, there are significant challenges such as **technological asymmetry** between developed and developing countries, differing **political ideologies**, and concerns over **national security**.
- Some nations prioritize **innovation freedom**, while others emphasize **strict regulation**, making consensus difficult. Moreover, **rapid AI evolution** outpaces regulatory efforts, requiring **dynamic and adaptive policies**.



6. Monsoon-related Extreme Weather Events and India's Climate Disaster Vulnerability

- The **Indian monsoon** plays a **crucial role** in the country's **agriculture, economy, and water resources**.
- However, recent years have witnessed a **significant increase** in **extreme weather events** linked to the monsoon, such as **intense rainfall, floods, droughts, and cyclones**.
- These changes have amplified **India's vulnerability** to **climate disasters**, posing serious challenges to **sustainable development and human security**.



Rising Incidence of Monsoon-related Extreme Events

There is growing scientific evidence that **climate change** is altering the **pattern, intensity, and distribution** of the monsoon. This has resulted in:

- Erratic and intense rainfall** causing frequent **flash floods** in urban and rural areas.
- Prolonged **dry spells** or **droughts** in several regions, severely impacting **crop production**.
- Increased frequency of **cyclones** with greater destructive potential in the Arabian Sea and Bay of Bengal.
- Rising instances of **heatwaves** coinciding with monsoon onset delays. Such events disrupt **agricultural cycles**, damage **infrastructure**, and threaten **lives and livelihoods**.



AUGUST 4TH WEEK CA COMPILATION

Impact on India's Climate Disaster Vulnerability

India's **geographical diversity and socio-economic disparities** make it highly vulnerable to these changes. Key aspects include:

- **Agricultural dependency:** More than 50% of the population depends on **monsoon rains** for farming, making erratic rainfall a major threat to **food security**.
- **Urban flooding:** Rapid **urbanization** with inadequate **drainage infrastructure** exacerbates flood risks.
- **Water resource stress:** Changing rainfall patterns affect **river flows, groundwater recharge**, and lead to **water scarcity**.
- **Economic losses:** Frequent disasters strain **public finances**, affecting **development projects** and **poverty alleviation efforts**.



Government Response and Way Forward

The Government of India has taken several steps, such as:

- Strengthening **disaster management frameworks** through the **National Disaster Management Authority (NDMA)**.
- Enhancing **weather forecasting** and **early warning systems** using advanced technologies.
- Promoting **climate-resilient agriculture** and **water conservation** measures.
- Encouraging **community participation** in disaster preparedness.



However, given the **increasing intensity** of extreme events, there is an urgent need to:

- Integrate **climate change adaptation** into all development planning.
- Invest in **infrastructure resilience** and **ecosystem restoration**.
- Foster **regional cooperation** for disaster risk reduction.
- Raise **public awareness** and promote **sustainable lifestyle choices**.



7. India-Japan Partnership: A Strategic Contemporary Alliance

- The **India-Japan partnership** has emerged as a significant pillar in the geopolitical landscape of **Asia** and beyond.
- Rooted in shared values of **democracy, rule of law, and economic development**, the bilateral relationship has evolved over the decades into a comprehensive strategic partnership.
- Both countries share a vision of a **free, open, and rules-based Indo-Pacific region**, opposing unilateralism and coercive behavior, particularly in the context of **China's assertiveness** in the region.
- The historical alignment of democratic values and mutual respect continues to underpin their growing cooperation.



AUGUST 4TH WEEK CA COMPILATION

Economic Cooperation and Connectivity

- Economic ties form the backbone of the India-Japan partnership. Japan is one of India's largest **investors** and a crucial partner in infrastructure development.
- The **Japan-India Investment Promotion Partnership** has encouraged Japanese firms to invest in sectors like **automobiles, electronics, and technology**.
- One of the flagship projects exemplifying this cooperation is the **Mumbai-Ahmedabad High-Speed Rail (Bullet Train)** project, funded largely by Japan through low-interest loans and technology transfer.
- This initiative is a **symbol of bilateral collaboration**, showcasing Japan's expertise and India's development aspirations.
- Moreover, Japan supports India's **Make in India** and **Digital India** initiatives through technical collaboration and innovation partnerships.
- The two countries are also working on enhancing **connectivity** through projects like the **India-Myanmar-Thailand Trilateral Highway**, improving regional integration and trade.



Security and Defence Collaboration

- The India-Japan partnership has taken a strategic turn with enhanced **defense cooperation** in response to regional security challenges. Both countries conduct **joint naval exercises** such as **JIMEX** (Japan-India Maritime Exercise) to enhance interoperability and ensure freedom of navigation in the Indo-Pacific.
- Japan has agreed to provide India with **defense technology** and engage in co-development of military equipment, which strengthens India's defense capabilities. This collaboration is seen as a counterbalance to China's growing military presence.
- The two countries are also members of multilateral groupings like the **Quad** (Quadrilateral Security Dialogue) alongside the **United States** and **Australia**, aimed at promoting a stable and secure Indo-Pacific. Their strategic dialogues address issues such as **maritime security, counter-terrorism, and cybersecurity**.



Science, Technology, and Cultural Exchange

- Beyond economics and security, India and Japan collaborate in **science and technology**, with exchanges in fields like **space research, artificial intelligence, and environmental sustainability**.
- Japan's advanced technology supports India's **efforts in renewable energy, smart cities, and disaster management**.
- Cultural ties remain strong with initiatives promoting **language learning, youth exchanges, and tourism**. These people-to-people contacts build goodwill and understanding, further cementing the partnership.



AUGUST 4TH WEEK CA COMPILATION

Challenges

Despite strong ties, challenges remain. **Differences over trade barriers**, Japan's cautious **approach in defense technology transfer**, and the **complex regional dynamics** involving China require continuous diplomatic efforts. However, both nations have shown **resilience and commitment to deepen cooperation**.

Future Prospects

Looking ahead, the partnership is poised to grow with emerging areas like **green technology, healthcare, and digital innovation**. Their joint commitment to sustainable development and regional stability positions them as pivotal players in shaping the future of the Indo-Pacific.



8. Parliamentary Committees are the Backbone of Parliamentary Democracy

- **Parliamentary democracy** is a system of government where the **executive is accountable to the legislature**, and the **legislature represents the voice of the people**.
- In this system, **Parliamentary Committees** play a crucial role in the functioning of the Parliament. Often referred to as the '**backbone of parliamentary democracy**', these committees facilitate **effective law-making, oversight of the executive, and detailed examination of policies and budgets**.



Significance of Parliamentary Committees

- The Indian Parliament, due to its large size and diverse representation, faces challenges in discussing every issue comprehensively.
- Here, **Parliamentary Committees** become essential as they allow for **in-depth scrutiny** of legislative proposals and government actions.
- They enable **decentralization of workload**, improve **efficiency**, and enhance **transparency**.
- Committees are often composed of **members from different parties**, ensuring **bipartisan deliberations** and minimizing partisan conflict.
- This fosters **consensus-building** and helps in preparing well-informed **legislation**.
- The committees also ensure **continuity** as they function even when Parliament is not in session, thus maintaining sustained oversight.



Functions of Parliamentary Committees

The main functions of Parliamentary Committees include:

- **Legislative Scrutiny:** Committees examine the details of bills, often inviting expert opinions, suggesting amendments, and ensuring that laws are comprehensive and effective.
- **Financial Oversight:** Committees such as PAC monitor government expenditure, preventing misuse of public funds and ensuring accountability.
- **Executive Oversight:** Committees scrutinize government policies, programs, and administration, holding ministers accountable for their departments.
- **Public Participation:** Committees allow for evidence and suggestions from citizens, experts, and stakeholders, ensuring inclusivity.
- **Conflict Resolution:** Cross-party representation facilitates the resolution of disputes and encourages collaborative decision-making.



AUGUST 4TH WEEK CA COMPILATION

- Parliamentary Committees enhance the **quality of democracy** by promoting **transparency, accountability, and responsiveness**.
- Their detailed reports inform public debate and parliamentary discussions. The committees act as a **check and balance** on executive power, preventing authoritarian tendencies.
- Moreover, committees contribute to **capacity building** of parliamentarians by involving them in detailed policy discussions, thus enhancing their knowledge and legislative skills.
- They bridge the gap between the **executive and legislature**, making governance more participatory and efficient.



Challenges Faced by Parliamentary Committees

Despite their importance, Parliamentary Committees face several challenges:

- Political Interference:** Committees can be influenced by ruling parties, which affects their impartiality.
- Lack of Timely Functioning:** Delays in constituting committees or presenting reports undermine their effectiveness.
- Limited Public Awareness:** The work of committees often remains underreported, reducing public engagement.
- Resource Constraints:** Committees sometimes lack sufficient research support and administrative resources.
- Non-Implementation of Recommendations:** Governments occasionally ignore committee suggestions, reducing their impact.



Way Forward

To further strengthen Parliamentary Committees, the government should focus on:

- Ensuring **non-partisan composition** and **autonomy** of committees.
- Improving **research support** through dedicated parliamentary research units.
- Encouraging **greater public participation** and dissemination of committee findings.
- Instituting mechanisms to **ensure timely action** on committee recommendations.

