

1. **Appointment of the Chief Election Commissioner (CEC) & Election Commissioners (EC):** The Former IAS officer Gyanesh Kumar was recently appointed as the Chief Election Commissioner (CEC), under the **Chief Election Commissioner and Other Election Commissioners (Appointment, Conditions of Service and Term of Office) Act, 2023**.
 - **About the Act, 2023:** The Act established a structured selection process for CEC and ECs.
 - A Search Committee, headed by the Law Minister, shortlists five candidates.
 - A **Selection Committee**, comprising the **Prime Minister, Leader of Opposition (LoP), and a Union Cabinet Minister nominated by the PM**, makes the final selection.
 - The **President appoints** the selected candidate based on the committee's recommendation.
 - **Eligibility & Term under the 2023 Act:** Candidates must be serving or former officers of the rank of Secretary to the Government of India.
 - Must possess integrity, election management experience, and administrative expertise.
 - CEC & ECs are ineligible for reappointment.
 - If an EC becomes CEC, their total tenure cannot exceed six years.
2. **India-Qatar Strategic Partnership Agreement:** India and Qatar upgraded their ties to a Strategic Partnership, with Qatar committing USD 10 billion investment and a target to double trade from \$14 billion to \$28 billion by 2030.
 - **Key developments under the Agreement:**
 - **Qatar's Sovereign Wealth Fund:** Currently has \$1.5 billion FDI in India across retail, power, IT, education, health, and affordable housing.
 - **New Investment Areas:** Qatar Investment Authority will focus on infrastructure, ports, shipbuilding, renewable energy, smart cities, food parks, AI, robotics, and machine learning.
 - **Energy Partnership:** Qatar is a major LNG supplier to India; 7.5 MMT per annum of LNG to be supplied for 20 years starting 2028.
 - **India-GCC Engagement:** Qatar joins UAE, Saudi Arabia, Oman, and Kuwait as India's strategic partner within the GCC.
 - **Signed Agreements & MoUs:** Strategic Partnership Agreement, Revised Double Taxation Avoidance Agreement & MoUs on Economic Collaboration, Youth & Sports, Archives, Investments, and Business Chambers Cooperation.

3. **'Rarest of rare' Doctrine:** As per the recent two murder cases, with contrasting verdicts—one life imprisonment, the other death penalty—sparked debate on the 'rarest of rare' doctrine in India.
- **About the Concept of 'Rarest of Rare' Doctrine:** Established in **Bachan Singh vs. State of Punjab (1980)**, states that the death penalty should be awarded only in exceptional cases.
 - **Machhi Singh vs. State of Punjab (1983)** provided a framework for determining such cases.
 - **Five criteria were identified:**
 - Manner of committing the murder – If it is extremely brutal and heinous.
 - Motive of the murder – If it shows total depravity.
 - Socially abhorrent nature – If the victim belongs to a minority community or the crime provokes social outrage.
 - Magnitude of the crime – If the scale is large and horrifying.
 - Personality of the victim – If the victim is a child, helpless woman, or elderly person.
 - **Related Cases:** Kolkata R.G. Kar Medical College Case (2024) - Not qualified as 'rarest of rare'.
 - **Sharon Raj Murder Case (2022)** - Classified as 'rarest of rare'.
 - **Origins & Evolution of the Doctrine:** Jagmohan Singh vs. State of U.P. (1972), Mithu vs. State of Punjab (1983), & Supreme Court Review (2022)
4. **Biannual Transparency Report (BTR):** India is finalizing its first Biannual Transparency Report (BTR) as part of its commitment under the 2015 Paris Agreement on climate change.
- **About Biannual Transparency Report (BTR):** The report will detail **India's greenhouse gas (GHG) emissions**, mitigation efforts, and transition to **renewable energy**.
 - **New Requirement:** Unlike previous Biannual Update Reports (BURs) and National Communications, BTRs undergo technical review by independent, non-Indian UNFCCC-accredited experts.
 - **Global Mandate:** Historically required only for developed nations, but after **COP-21 (2015 Paris Agreement)**, all signatories must submit BTRs.
 - **COP-29 (Baku, 2024) Decision:** Countries started submitting BTRs in prescribed format, though many, including India, missed the December 2024 deadline.
 - **Data Coverage:** India's latest BUR (submitted December 2024) covered 2020 emissions.
 - **India's share:** 4-5% of global emissions, but per capita emissions remain below **one-third** of global average.

- **Sectoral Emissions (2020 Data):** Energy sector (75.66%) → Agriculture (13.72%) → Industry (8.06%) → Waste (2.56%)
- **Carbon Sequestration:** India's forests & tree cover absorbed ~522 million tonnes CO₂ (2020), reducing 22% of net emissions.
- 5. **Deposit Insurance and Credit Guarantee Corporation (DICGC):** The government is considering increasing deposit insurance cover beyond the current ₹5 lakh, as per Financial Services Secretary.
 - **About DICGC:** Deposit insurance is provided by the DICGC, a division of the Reserve Bank of India (RBI).
 - **Objective:** To protect small depositors from losing their savings in case of a bank failure.
 - **Coverage:** Provides ₹5 lakh per depositor, covering all accounts in all branches of an insured bank.
 - Covers commercial banks, foreign bank branches in India, local area banks, regional rural banks, and cooperative banks.
 - **Excludes:** Primary cooperative societies, deposits by foreign, central, and state governments, and inter-bank deposits.
 - **Types of deposits covered:** Savings, fixed, current, and recurring deposits.
 - **Premium:** Paid by the insured bank, collected by DICGC at a flat/differentiated rate based on risk.
 - **Legal Provision:** Section 18A of the DICGC Act, 1961, allows depositors time-bound access to deposits when restrictions are imposed by RBI.
 - **DICGC's Role in the New India Co-operative Bank Case:** Depositors can claim insured amounts as per Section 18A of the DICGC Act, 1961.
- 6. **Gag Orders:** The Supreme Court recently granted interim protection from arrest in the FIRs registered against podcaster-influencer for his comments on a YouTube show.
 - **About Gag Orders by the SC:** A gag order is a judicial directive restricting the dissemination of information to ensure a fair trial or protect privacy.
 - **Supreme Court's Stance:** The Court emphasizes that such orders should be exceptional, issued only when publication poses a substantial risk to the fairness of a trial.
 - **Notable Cases on Gag Orders:**

- **Amaravati Land Scam (2020):** Andhra Pradesh HC issued a gag order restricting media from reporting on an FIR related to a land scam.
 - SC later vacated the order, stressing that media restrictions should be applied cautiously.
 - **Delhi High Court Observation (2024):** Gag orders should be issued only when necessary to prevent a substantial risk to trial fairness.
 - Not all court-related publications warrant such restrictions.
7. **Solar Coronal Holes:** A new study by Indian Institute of Astrophysics (IIA) accurately estimates the thermal and magnetic field structures of solar coronal holes.
- **About: Dark areas** in the solar corona in **extreme ultraviolet (EUV)**. They appear dark because they are **cooler, less dense regions** than the surrounding plasma and are regions. These are regions on the sun's surface from where fast **solar wind gushes out into space**.
 - **Characteristics of Coronal Holes:** They are more common and persistent during the years around **solar minimum** and can last between a few weeks to months.
 - **Impact on Earth:** Can cause geomagnetic storms and disturbances in the Earth's ionosphere, affecting radio communication.
 - Study suggests radiative effects of coronal holes influence the Indian monsoon rainfall, in addition to sunspots.
 - **Thermal and Magnetic Field Analysis:** Temperature estimation helps understand their depths of origin in the deep solar interior.
 - Radiative flux and energy estimation help assess their impact on the interplanetary space.
 - Latitudinal variation in temperature gives clues about their formation.
8. **Peatland:** Recent studies highlight the critical role of **peatlands** in carbon storage and climate regulation, emphasizing the need for **urgent protection and restoration**.
- **About Peatlands:**
 - Wetland ecosystems with **waterlogged conditions**, leading to peat soil formation.
 - **Carbon Storage:** Covers **3%** of Earth's land but **stores 600 billion tonnes of carbon**, more than all the world's forests combined.
 - **Ecological Importance:** Supports biodiversity, purifies water, & reduces flooding & soil erosion.

- **Low Protection Status:** Only 17% of peatlands are protected, compared to 38% of tropical forests, leaving them vulnerable.
 - **High Emissions from Degradation:** Damaged peatlands contribute 5% of global CO₂ emissions.
 - **Restoration for Climate Goals:** Critical for achieving Paris Agreement & Global Biodiversity Framework targets.
 - **Cost-Effective Climate Mitigation:** Peatland conservation & restoration in tropical regions could cut emissions by 800 million tonnes CO₂ annually at just \$40 billion.
 - **UNESCO Recognition:** Flow Country, Scotland, is the first peatland to receive World Heritage status, highlighting its ecological significance.
9. **Matsya-6000:** India's 4th-generation deep-ocean human submersible, recently successfully completed wet testing as part of the Samudrayan Project under the Deep Ocean Mission.
- **About Matsya-6000:** Developed by National Institute of Ocean Technology (NIOT), Ministry of Earth Sciences.
 - **Objective:** Deep-sea exploration for scientific research.
 - **Capacity:** Accommodates three humans in a 2.1-meter spherical hull.
 - **Key Features:** Main ballast system for diving → Thrusters for movement in all directions → Battery bank for power supply → Syntactic foam for buoyancy → Advanced control hardware & software for navigation → Acoustic modem, underwater telephone, VHF, GPS for communication → Oceanographic sensors, lighting, and cameras for deep-sea research → Indigenously developed and tested subsystems.
 - **Recent Developments:** Integrated dry tests completed across a 500-meter operational range.
10. **Invasive Water Hyacinth and Glyphosate:** Recent discussions have emerged regarding the use of glyphosate to control the spread of the invasive **water hyacinth** in aquatic ecosystems.
- **About Water Hyacinth (*Pontederia crassipes*):** A free-floating aquatic plant native to the Amazon basin.
 - Known for its rapid proliferation, leading to dense mats on water surfaces.
 - Causes significant ecological and economic challenges, including: Obstructing waterways, Disrupting aquatic ecosystems, and Impeding water transport and fishing activities.
 - **Glyphosate:** A broad-spectrum systemic herbicide commonly used to control various plant species.
 - Applied to the foliage, it inhibits a specific enzyme pathway necessary for plant growth.