



**UPSC  
Mentorship**  
A Unit of Mentorship India

# DAILY CURRENT AFFAIRS

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SOURCES



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## GS II

### 1. How votes will be counted

Source: IE, Page 14

Prelims: VVPAT, EVM

Mains: Salient Features of the Representation of People's Act.

**Context:** In the recent election, 642 million voters participated, marking the largest democratic exercise in the world. The vote counting begins at 8 am on the designated day, with clear trends typically emerging within the first four hours. The article talks about the Electoral Counting Process in India.

#### Management and Supervision of Counting

##### 1. Role of Returning Officer (RO):

- Oversees and directs the counting process.
- Typically the District Magistrate, appointed by the Election Commission of India (ECI).
- Assisted by Assistant Returning Officers (AROs) for multiple constituencies.

##### 2. Counting Officials:

- Appointed by the RO based on the number of postal ballots and counting tables.
- Includes counting supervisors (gazetted officers), assistants, Group D staff, and micro observers.

##### 3. Presence in the Counting Hall:

- Only authorised personnel allowed: counting officials, ECI-authorised individuals, candidates, and their agents.
- Mobile phones are prohibited except for the ECI Observer.

#### Location and Setup of Counting

##### 1. Counting Location:

- Determined by the RO, preferably at the RO's headquarters.
- Separate halls for each Assembly constituency; a maximum of 14 tables per hall.

##### 2. Preparation and Setup:

- Strong Room containing EVMs opened in the presence of observers and candidates.
- EVMs counted sequentially with secure setup to prevent tampering.

#### Process and Progress of Counting

##### 1. Types of Votes:

- Two types: EVM votes and postal ballots.
- Postal ballots counted first, followed by EVM votes 30 minutes later.

##### 2. Counting Procedure:

- Control Unit of EVM used to determine results.
- Results recorded in Form 17C.
- Control Units turned off after recording.

##### 3. Result Announcement:

- Results for each round announced by RO.
- Voter Verifiable Paper Audit Trail (VVPAT) slips verified sequentially after EVM counting.



## GS III

### 2. What's missing in the disaster database?

Source: The Hindu, 9

Prelims: Not relevant

Mains: Disaster and Disaster Management

Context: The article discusses the increase in reported disaster events worldwide from the 1970s to the present, emphasizing the role of reporting bias in this trend.

#### Increase in Reported Disaster Events

- Disaster events have risen from 100 per year in the 1970s to around 400 per year in the last 20 years (FAO, 2023).
- The increase is partly due to reporting bias, with improved documentation of smaller events in recent decades.
- Historical data often missed smaller events, focusing mainly on major disasters.

#### Reporting Bias and Data Gaps

- Earlier records mainly included major disasters due to underdeveloped humanitarian aid and telecommunications.
- More recent data shows a higher number of small events with fewer than 200 deaths being reported.
- Significant gaps exist in disaster data, especially regarding economic damages:
  - Over 40% of disasters (1990–2020) lacked estimated monetary damages.
  - Insured damages were missing 88% of the time.
  - Reconstruction costs were not recorded in 96% of cases.
- Data coverage is poorer in low-income countries, with only 13% of disasters in Africa and 23% in South Asia reporting economic losses (2000–2019).

#### Regional and Disaster Type Inconsistencies

- Sub-Saharan Africa and other regions have poor data coverage and are often overlooked.
- Over half of reported heat events come from a few countries (e.g., Japan, India, Pakistan, the U.S.).
- Extreme heat events are likely underreported in many regions.

#### Health Impacts of Extreme Temperatures

- Heat-related deaths often stem from indirect conditions like cardiovascular disease, making proper quantification difficult.
- Both heat- and cold-related deaths are likely underestimated due to reporting biases and statistical estimation challenges.
- Disasters have immediate impacts on mortality, health, and infrastructure, as well as long-term effects like malnutrition and food insecurity.



## Editorials, Opinions and Ideas

### 3. The state we need

Source: IE, Page 11

The Article talks about the relevance of Mission Karmayogi in the development and governance structure of the Country.

#### Aiming Viksit Bharat by 2047

- **Ambitions:** India aims to become a global manufacturing hub, critical exporter of value-added services, and mass supplier of human skills.
- **Mission Karmayogi:** Launched by Prime Minister Narendra Modi to transform civil services, enhancing capabilities of three million civil servants.
- **Capacity Building Commission (CBC):** Established in 2021 to provide policy guidance and enhance civil service capabilities.

#### Key Initiatives Under Mission Karmayogi

- **PM Gati Shakti:** Platform for integrated planning and execution of infrastructure projects, involving digital training for over 24,000 officials across various ministries.
- **Emerging Technologies Training:** Over 3,88,000 government personnel certified in AI, IoT, Big Data analysis through iGOT Karmayogi Bharat.
- **Sector-Specific Training:** Collaborations with ministries and institutions for specialized training in road construction, rail transport, and police services.

#### Impact and Achievements

- **Infrastructure Projects:** Increase in rail line construction, highway projects prepared, and integrated planning avoiding sensitive wildlife habitats.
- **Police Training:** Enhanced citizen satisfaction and security, exemplified by increased tourist visits to Kashmir and accolades during the G-20 summit.
- **Railway Customer Service:** Significant improvement in passenger and freight customer satisfaction post-training in various divisions.

#### Ongoing Developments and Future Goals

- **Citizen-Centric Services:** Training for Gramin Dak Sevaks, CSCs, and municipal corporation staff in service delivery, municipal finance, and solid waste management.
- **Lifelong Learning Culture:** Completion of 15 lakh online learning modules by section officers and administrative assistants, enhancing proficiency in data analytics and e-governance.
- **State and Municipal Role:** Essential for achieving 2047 targets, with pilot capacity building in multiple municipal corporations and continued support from the CBC.



## 4. Next Steps In Agriculture

Source: IE, Page 10

The article talks about challenges the Indian Agriculture sector is facing and required actions to be addressed in coming times.

### Challenges in Indian Agriculture

- **Climate Change:**
  - Irreversible negative changes impacting crop production and livelihoods.
  - Increasing frequency of erratic climatic events.
- **Global Trade Policies:**
  - WTO's iniquitous rules and the US crippling the dispute-settlement mechanism.
  - Indian policymakers' potential difficulty in navigating WTO rulings domestically.
- **Small Land Holdings:**
  - 85% of total arable land in small holdings limits dignified livelihoods for farmers.
- **Economic Pressures:**
  - Global priority for low food prices drives down farm-gate prices, making farming unsustainable.
  - Depleting aquifers make irrigation economically unviable, affecting drinking water availability.
- **Governance Issues:**
  - Inept governance and lack of accountability in agricultural ministries.
  - Attitudinal issues at the top levels of government.

### Areas Requiring Action

- **Investment in Agricultural Research and Extension:**
  - Funding for research and extension services below inflation levels.
  - High economic returns from investment in agricultural research.
- **Agricultural Market Reforms:**
  - Inherently unfair markets and the need for better management.
  - States prioritizing populist measures over long-term investments.
- **Policy and Subsidy Reforms:**
  - Public distribution system driving down farm-gate prices.
  - Skewed fertilizer subsidies leading to environmental and health issues.
  - Need for a sovereign bankruptcy procedure for states.

### Future Actions Required:

- Need for decisive steps by the Government.
- Fundamental changes required in policy framing and implementation.
- Avoiding policy procrastination to expand future choices.



## InBrief

### 5. ISRO develops new PraVaHa software for aerodynamic design

Source: The Hindu, Page 3

**Context:** The Indian Space Research Organisation (ISRO) has developed Computational Fluid Dynamics (CFD) software named Parallel RANS Solver for Aerospace Vehicle Aero-thermo-dynamic Analysis (PraVaHa).

#### PraVaHa

- Parallel RANS Solver for Aerospace Vehicle Aero-thermo-dynamic Analysis” (PraVaHa) is developed in VSSC to simulate external and internal flows on launch vehicles, winged & nonwinged re-entry vehicles.
- PraVaHa has been used extensively in the Gaganyaan program for aerodynamic analysis of human-rated launch vehicles, viz, HLVM3, Crew Escape System [CES], and Crew Module [CM]. It is designed to make use of CPU as well as GPU architecture of available and upcoming supercomputing facilities.

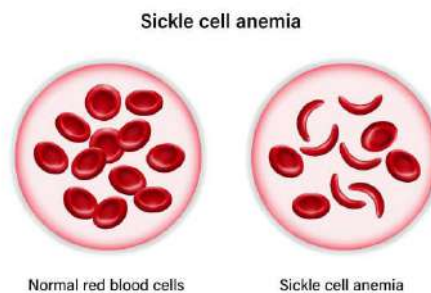
### 6. ICMR seeks to provide oral formulation of hydroxyurea to treat sickle cell disease

Source: The Hindu, Page 6

**Context:** The Indian Council of Medical Research (ICMR) has invited Expressions of Interest (EoI) from eligible organisations for the “joint development and commercialisation” of hydroxyurea.

#### Sickle Cell Diseases

- An inherited blood disorder caused by a genetic mutation affecting red blood cells (RBCs).
- Red Blood Cells:
  - Normal RBCs are round and flexible, allowing for easy movement through blood vessels.
  - In SCD, RBCs become sickle-shaped (crescent-shaped) and rigid due to the mutation.
- Consequences of Sickle-Shaped RBCs: Difficulty flowing through blood vessels, Reduced oxygen delivery to tissues.
- Complications: Anemia (fatigue, weakness, paleness), Painful episodes (sudden, severe pain in bones, chest, back, etc.), Delayed growth and puberty, Organ damage. Shortened lifespan
- High-Risk Groups: Marginalized tribal populations
- Symptoms: Chronic anemia, Painful episodes (sickle cell crisis), Delayed growth and puberty
- Treatment Options: Blood transfusions (reduce anemia and pain crisis risk), Hydroxyurea medication (reduces pain episode frequency and prevents complications), Gene therapy, Bone marrow or stem cell transplantation (using methods like CRISPR)



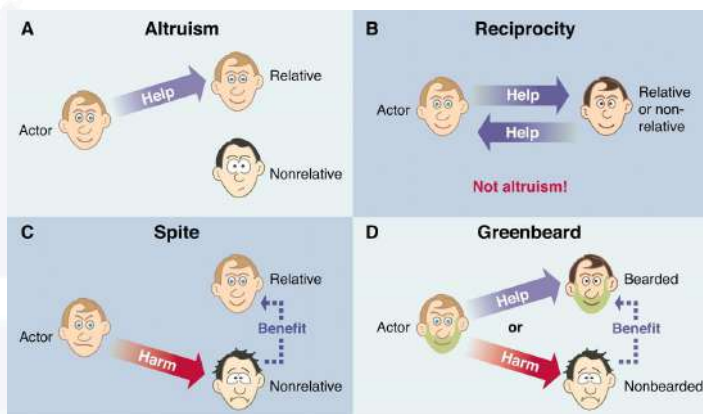
## 7. 'Green-beard' genes could explain how altruism arose in nature

Source: The Hindu, Page 7

Context: A recent study demonstrated the logic that green-beard genes use to produce altruism plus the corresponding ability to keep altruistic amoebae from being exploited by greedy ones.

### Genes *tgrB1* and *tgrC1*

- The *tgrB1* and *tgrC1* genes are located next to each other.
- They contain information for cells to make two cell surface proteins called TgrB1 and TgrC1. The TgrB1 protein on one cell binds to the TgrC1 protein on another. If the binding is strong, the TgrB1 protein is activated, and confers altruistic behaviour.
- The binding between the TgrB1 and the TgrC1 proteins of cells of the same strain is strong, and leads to self-recognition and cell-cell cooperation. Pure cultures of cells that lack the *tgrB1* and *tgrC1* genes fail to develop because they are unable to recognise each other as being alike



## 8. BrahMos ex-engineer gets life term for spying for Pak

Source: IE, Page 9

Context: A session court awarded life imprisonment Monday to a former engineer of BrahMos Aerospace Pvt Ltd, arrested on the charge of spying for Pakistan intelligence agency ISI under Official Secret Act.

### Official Secrets Act (OSA), 1923

- The Official Secrets Act 1923 is India's anti-espionage act held over from the British colonial period. It states clearly that actions which involve helping an enemy state against India are strongly condemned.
- Punishments under the Act range from three year to life imprisonment (if the intent is to declare war against India – section 5).
- A person prosecuted under this Act can be charged with the crime even if the action was unintentional and not intended to endanger the security of the state.





## 9. As chip makers start to talk TOPs, on-device GenAI gets competitive

Source: IE, Page 13

**Context:** Recently, Taiwan's computer trade show Computex 2024 was organised with major focus in Generative Artificial Intelligence experience on personal computers in terms of Tera Operations per Second (TOPs).

**Tera Operations per Second (TOPs)**

- Tera Operations Per Second (TOPs) is a measurement for how many trillions, or tera, of operations a Neural Processing Unit (NPU), more commonly referred to as an AI chip or accelerator, can perform per second. That number is then multiplied by the maximum frequency it can achieve.
- TOPs was first commonly referenced by the company Movidius, which was acquired by Intel in 2016.

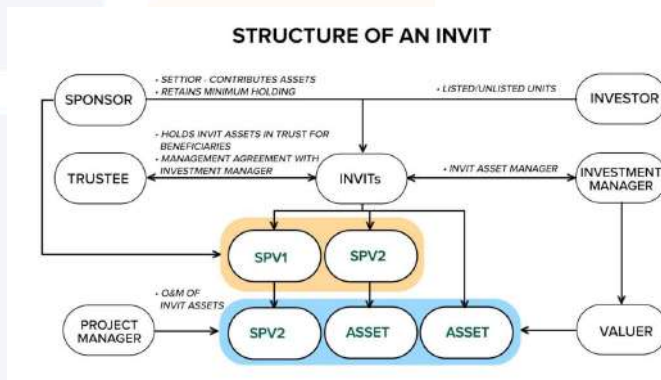
## 10. More road projects, higher toll revenue boost the introduction of InvITs

Source: The Hindu, Page 12

**Context:** InvITs have emerged as one of the major buyers of operational road assets in India in recent years.

**Infrastructure Investment Trusts (InvITs)**

- These are pooled investment vehicles similar to mutual funds which were introduced to make investment in infrastructure assets accessible to private and retail investors.
- InvITs invest in long-term infrastructure projects such as roads, gas pipelines, transmission lines, renewable assets, etc.
- They are regulated by SEBI.
- The minimum subscription limit for InvITs is 1 lakh.
- Apart from institutional investors like Banks, Insurance companies, pension funds and sovereign wealth funds, Retail investors also can invest in InvITs.



## Daily Quiz

1. Consider the following statements regarding the Voter Verifiable Paper Audit Trail (VVPAT) system in India:

1. VVPAT is an independent verification system attached to Electronic Voting Machines (EVMs).
2. It allows voters to verify that their vote has been cast correctly.
3. VVPATs provide a printed record of the vote, which is stored for later verification and auditing.

How many of the above statements are correct?

- A. Only 1
- B. Only 2
- C. All are correct
- D. All are incorrect

2. Which of the following statements about the Food and Agriculture Organization (FAO) is/are incorrect?

- A. The FAO is a specialized agency of the United Nations that leads international efforts to defeat hunger.
- B. The headquarters of the FAO is located in Rome, Italy.
- C. The FAO was established in 1945, immediately following World War II, to improve nutrition and standards of living.
- D. The FAO publishes the Global Hunger Index every year.

3. Consider the following statements regarding "Mission Karmayogi":

1. Mission Karmayogi aims to transform the Indian civil service by focusing on capacity building and lifelong learning through an online platform called iGOT Karmayogi.
2. The mission seeks to provide a unified framework for civil services training programs across various cadres and levels.
3. Under Mission Karmayogi, the Cabinet Secretariat is the nodal agency responsible for its implementation.
4. The mission incorporates the Public Human Resources Council as one of its key governance structures.

Which of the statements given above is/are correct?

- A. 1 and 2 only
- B. 2 and 3 only
- C. 1, 2, and 4 only
- D. 1, 3, and 4 only

4. The World Trade Organization's Agreement on Agriculture (AoA) primarily aims to achieve which of the following?

- A. Provide subsidies to developing countries to boost their agricultural production.
- B. Completely eliminate all tariffs and trade barriers on agricultural products.
- C. Establish a fair and market-oriented agricultural trading system by reducing support and protection.
- D. Prioritize food security concerns over trade liberalization in agricultural markets.



5. Recently seen in the news, PraVaHa Software is developed by which of the following organizations?

- Indian Space Research Organisation (ISRO)
- Defence Research & Development Organisation (DRDO)
- Department of Biotechnology (DBT)
- Council of Scientific & Industrial Research (CSIR)

6. Sometimes mentioned in the news, the drug 'hydroxyurea' is used for treatment of which of the following diseases?

- Cancer
- Sickle Cell Anaemia
- AIDS
- Tuberculosis

7. The concept of "green-beard genes" in evolutionary biology refers to:

- Genes that code for both a visible green beard trait and resistance to a specific disease.
- Genes that directly promote altruistic behavior towards all members of a species.
- Genes that cause individuals to recognize and preferentially help others with the same specific genetic marker.
- Genes that create a symbiotic relationship between an organism and a specific beneficial microbe.

8. Consider the following statements regarding "Official Secrets Act 1923":

- The Official Secrets Act 1923 is India's anti-espionage act held over from the British colonial period.
- A person prosecuted under this Act can be charged with the crime even if the action was unintentional.

Which of the above given statements is/are correct?

- Only 1
- Only 2
- Both 1 and 2
- Neither 1 nor 2

9. What does the term TOPS (Tera Operations per Second) measure in the context of AI PCs?

- Overall system performance
- CPU computing power
- GPU performance
- NPU performance

10. Consider the following statements regarding "Infrastructure Investment Trusts (InvITs)":

- They are regulated by SEBI.
- The minimum subscription limit for InvITs is 1 lakh.
- Retail investors can invest in InvITs.

Which of the above given statements is/are correct?

- 1 only
- 1 and 2 only
- 2 and 3 only
- 1, 2 and 3



## Solutions

**Answer 1: C**

**Explanation:**

- Statement 1 is correct: VVPAT is an independent verification system that is attached to Electronic Voting Machines (EVMs) to enhance transparency and trust in the electoral process.
- Statement 2 is correct: VVPAT allows voters to verify that their vote has been cast correctly by displaying a printed slip for a few seconds before it is stored.
- Statement 3 is correct: VVPATs provide a printed record of the vote, which is stored in a sealed compartment and can be used for later verification and auditing if needed.

Hence, Option C is correct.

**Answer 2: D**

**Explanation:**

- The Global Hunger Index (GHI) is a peer-reviewed report, published on an annual basis by Concern Worldwide and Welthungerhilfe. The GHI is a tool designed to comprehensively measure and track hunger at global, regional, and national levels, reflecting multiple dimensions of hunger over time.

Hence, Option D is correct.

**Answer 3: C**

**Explanation:**

- Statement 1 is correct. Mission Karmayogi aims to transform the Indian civil service by focusing on capacity building and lifelong learning through an online platform called iGOT Karmayogi.
- Statement 2 is correct. The mission seeks to provide a unified framework for civil services training programs across various

cadres and levels to ensure uniformity and standardization in the training process.

- Statement 3 is incorrect. The Department of Personnel and Training (DoPT) is the nodal agency responsible for the implementation of Mission Karmayogi, not the Cabinet Secretariat.
- Statement 4 is correct. The mission incorporates the Public Human Resources Council as one of its key governance structures, which provides strategic direction and oversight for the implementation of the mission.

Hence, Option C is correct.

**Answer 4: C**

**Explanation:**

- The AoA, established during the Uruguay Round of trade negotiations, aimed to reform agricultural trade by:
  - Reducing government support for domestic agricultural producers.
  - Lowering tariffs and other trade barriers on agricultural products.
- This approach aimed to create a more market-driven agricultural trading system, promoting efficiency and potentially lowering consumer prices.

Hence, Option C is correct.

**Answer 5: A**

**Explanation:**

- The Indian Space Research Organisation (ISRO) has developed Computational Fluid Dynamics (CFD) software named Parallel RANS Solver for Aerospace Vehicle Aero-thermo-dynamic Analysis (PraVaHa).

Hence, Option A is correct.



**Answer 6: B**

**Explanation:**

- Hydroxyurea is a medication used primarily in the treatment of sickle cell anemia. It works by increasing the levels of fetal hemoglobin in the blood, which helps to reduce the formation of sickle-shaped red blood cells and decreases the frequency of painful episodes and complications associated with sickle cell anemia.

Hence, Option B is correct.

**Answer 7: C**

**Explanation:**

- Green-beard genes are a theoretical concept used to explain the evolution of altruism.
- These genes are hypothesized to have two effects:
  - Cause a visible trait: This could be a green beard (as the name suggests) or any other easily recognizable physical characteristic.
  - Influence behavior: Individuals with the gene would be more likely to help others who also possess the same gene.

Hence, Option C is correct.

**Answer 8: C**

**Explanation:**

- Statement 1 is correct: The Official Secrets Act 1923 is India's anti-espionage act held over from the British colonial period.
- Statement 2 is correct: A person prosecuted under this Act can be charged with the crime even if the action was unintentional and not intended to endanger the security of the state.

Hence, Option C is correct.

**Answer 9: D**

**Explanation:**

- The term TOPS stands for Tera Operations per Second. It is used to measure, simplify, and advertise Neural Processing Unit (NPU) performance in AI PCs.
- TOPS quantifies the NPU's speed and ability to handle AI tasks. It helps compare NPUs across different devices.

Hence, Option D is correct.

**Answer 10: D**

**Explanation:**

- Statement 1 is correct: Infrastructure Investment Trusts (InvITs) are regulated by SEBI.
- Statement 2 is correct: The minimum subscription limit for InvITs is 1 lakh.
- Statement 3 is correct: Apart from institutional investors like Banks, Insurance companies, pension funds and sovereign wealth funds, Retail investors also can invest in InvITs.

Hence, option D is correct.





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