



DATE: 08.10.2026

- 1) With reference to the Selection Committee for the appointment of the Chief Election Commissioner (CEC) and Election Commissioners (ECs), consider the following statements:

1. The Selection Committee is chaired by the Prime Minister of India.
2. The Leader of Opposition in the Lok Sabha or the leader of the largest opposition party in the Lok Sabha is a statutory member.
3. The Chief Justice of India serves as a member of the Selection Committee.
4. The vacancy of any member in the Selection Committee invalidates the appointment of the CEC or ECs.

Which of the statements given above are **incorrect**?

- (a) 1 and 2 only
- (b) 3 and 4 only
- (c) 2 and 3 only
- (d) 1, 3, and 4 only

- 2) With reference to the Nobel Prize in Chemistry 2026, consider the following statements:

1. Henri B. Kagan and Kenso Soai were awarded the Nobel Prize in Chemistry for their work on asymmetric organic synthesis.
2. Their work showed that small molecular imbalances can be amplified through autocatalysis.
3. The work provided insights into homochirality, where one molecular form predominates over its mirror image.

Which of the statements given above is/are correct?

- (a) 1 and 2 only
- (b) 1 and 3 only
- (c) 2 and 3 only
- (d) 1, 2 and 3

- 3) Consider the following statements:

1. The Repo Rate is the rate at which the RBI lends long term funds to commercial banks against eligible securities.
2. An increase in the Repo Rate generally helps moderate inflationary pressures.
3. A reduction in the Repo Rate generally encourages credit expansion.

Which of the statements given above is/are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

- 4) Consider the following applications of Additive Manufacturing (3D Printing):

1. Production of lightweight aerospace components with complex internal structures
2. Manufacturing of customized medical implants and surgical guides
3. Rapid prototyping and production of specialized automotive tooling
4. Construction of buildings using large-scale concrete 3D printers
5. Manufacturing of complex heat exchangers with intricate internal cooling channels



6. Large-scale production of conventional petroleum-based fuels through layer-by-layer printing .

Which of the above are applications of Additive Manufacturing?

- (a) Only three
- (b) Only four
- (c) Only five
- (d) All the above

- 5) With reference to geothermal power plants, consider the following statements:

- 1. Dry-steam plants directly use steam from geothermal reservoirs
- 2. Flash-steam plants use high-pressure hot water that is converted into steam when pressure falls. .
- 3. Binary-cycle plants can utilize geothermal fluids whose temperature is relatively lower than that required by conventional steam plants..

Which of the statements given above is/are correct?

- (a) Only one
- (b) Only two
- (c) All three
- (d) None

Explanation

1) Answer: (B)

- **Statement 1 is correct:** Under the Chief Election Commissioner and Other Election Commissioners (Appointment, Conditions of Service and Term of Office) Act, 2023, the Selection Committee is chaired by the Prime Minister of India.
- **Statement 2 is correct:** The Leader of Opposition in the Lok Sabha (or the leader of the single largest opposition party in the Lok Sabha) is a statutory member of the Selection Committee.
- **Statement 3 is incorrect:** The 2023 Act excluded the Chief Justice of India from the Selection Committee and replaced the position with a Union Cabinet Minister nominated by the Prime Minister.
- **Statement 4 is incorrect:** Section 7(2) of the 2023 Act explicitly provides that no appointment of the CEC or ECs shall be invalid merely by reason of any vacancy in, or defect in the constitution of, the Selection Committee.
- **Therefore, option B is the correct answer.**

2) Answer: (D)

- **Statement 1 is correct:** French chemist **Henri B. Kagan** and Japanese chemist **Kenso Soai** were awarded the **2026 Nobel Prize in Chemistry** *“for the discovery of non-linear effects and autocatalysis in asymmetric organic synthesis.”*
- **Statement 2 is correct:** Their discoveries showed how chemical reactions can amplify **tiny initial molecular imbalances through autocatalysis**, where a chiral product promotes the formation of more of the same molecular form.



- **Statement 3 is correct:** Their research provided a solution to a **century-old mystery of homochirality**, showing how one mirror-image form can become overwhelmingly predominant over the other. This helps explain the “one-handedness” observed in biological molecules, such as **L-amino acids and D-sugars**.
- **Therefore, option D is the correct answer.**

3) Answer: (B)

- **Statement 1 is incorrect:** The **Repo Rate** is the rate at which the Reserve Bank of India (RBI) lends **short-term** funds to commercial banks against eligible securities (such as government securities). The rate associated with lending *long-term* funds is the **Bank Rate**.
- **Statement 2 is correct:** An increase in the repo rate makes borrowing costlier for commercial banks. In turn, banks raise their lending rates for consumers and businesses. This curbs excess liquidity in the economy, increases the cost of credit, slows down aggregate demand, and helps **moderate inflationary pressures**.
- **Statement 3 is correct:** A reduction in the repo rate lowers the cost of borrowing for banks. This encourages them to expand credit by offering cheaper loans to businesses and retail customers, thereby boosting investment, consumption, and overall **credit expansion** in the economy.
- **Therefore option B is the correct answer.**

4) Answer: (C)

- **Production of lightweight aerospace components with complex internal structures: Correct.** Aerospace relies heavily on additive manufacturing for topological optimization, lattice structures, and reducing component weight while maintaining structural integrity.
- **Manufacturing of customized medical implants and surgical guides: Correct.** Patient-specific implants (like titanium jaw replacements, spinal cages, and dental/orthopedic guides) are one of the most mature and successful medical applications of 3D printing.
- **Rapid prototyping and production of specialized automotive tooling: Correct.** Automotive industries use AM extensively for rapid prototyping of parts, as well as printing durable jigs, fixtures, and specialized manufacturing tooling.
- **Construction of buildings using large-scale concrete 3D printers: Correct.** Large-scale robotic 3D printers are increasingly used in civil engineering and architecture to print concrete walls and entire building structures.
- **Manufacturing of complex heat exchangers with intricate internal cooling channels: Correct.** Metal 3D printing enables the creation of heat exchangers with complex, optimized internal geometries and micro-channels that are impossible to manufacture using traditional machining or casting.
- **Large-scale production of conventional petroleum-based fuels through layer-by-layer printing: Incorrect.** Conventional petroleum-based fuels are produced through the extraction and fractional distillation/cracking of crude oil, not by layer-by-layer additive manufacturing.

5) Answer: (C)



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- **Statement 1 is correct:** In dry-steam systems, naturally occurring **geothermal steam is brought to the surface** and used to turn a turbine.
- **Statement 2 is correct:** Geothermal water can remain liquid despite having a very high temperature because of underground pressure. When the **hot water reaches the surface and pressure decreases**, part of it **flashes into steam**, which can drive a turbine.
- **Statement 3 is correct:** Binary plants use a **secondary working fluid** with a lower boiling point than water. Therefore, heat from relatively lower-temperature geothermal resources can still be converted into electricity.

