



June CURRENT

PRELIMS PRACTICE

Time Limit: 120 mins

Total Questions: 100

- Assertion (A):** Increased urbanization leads to a higher urban heat island effect.
Reason (R): Urbanization involves the replacement of vegetated surfaces with asphalt and concrete, which absorb and radiate heat more than natural landscapes.
 - Both A and R are true, and R is the correct explanation of A
 - Both A and R are true, but R is not the correct explanation of A
 - A is true, but R is false
 - A is false, but R is true
- Consider the following statements regarding the implications of the discovery of the earliest-known galaxy by JWST:
 - It suggests that galaxies formed sooner after the Big Bang than previously thought.
 - The size and brightness of the galaxy challenge our understanding of dark matter's role in galaxy formation.
 - These findings imply that current models of the universe's expansion need to be completely revised.Which of the statements above are correct?
 - 1 and 2 only
 - 2 and 3 only
 - 1 and 3 only
 - All of the above





3. **Assertion (A):** The European Parliament elections use a uniform voting system across all member states.
- Reason (R):** This uniform system ensures that the electoral process is fair and consistent, enhancing democratic values within the European Union.
- (a) Both A and R are true, and R is the correct explanation of A
(b) Both A and R are true, but R is not the correct explanation of A
(c) A is false, but R is true
(d) Both A and R are false
4. The recent findings on a genetic enhancer related to inflammatory bowel disease (IBD) highlighted the role of non-coding DNA regions.
- What does this suggest about previous understanding of genetic factors in disease?
- (a) Non-coding regions were always known to be predominantly involved in genetic diseases.
(b) The discovery challenges the belief that only protein-coding regions play critical roles in the development of genetic diseases.
(c) It confirms that external environmental factors are solely responsible for such diseases.
(d) It implies that all genetic diseases can be cured by targeting non-coding DNA.
5. **Assertion (A):** Special Category Status (SCS) is crucial for states that suffer from geographical and economic disadvantages.
- Reason (R):** SCS provides preferential treatment in federal funding, which is necessary to uplift the economic conditions of the disadvantaged states.
- (a) Both A and R are true, and R is the correct explanation of A
(b) Both A and R are true, but R is not the correct explanation of A
(c) A is true, but R is false
(d) A is false, but R is true
6. **Assertion (A):** Exit polls provide an early prediction of the election outcome.
- Reason (R):** They are conducted after voters have cast their ballots but before the official results are announced.
- (a) Both A and R are true, and R is the correct explanation of A
(b) Both A and R are true, but R is not the correct explanation of A
(c) A is true, but R is false
(d) A is false, but R is true
7. Consider the following statements regarding India's goal to become a developed nation by 2047:
1. It requires maintaining a growth rate of at least 7% annually.
 2. The strategy includes substantial investment in renewable energy and technology.
 3. Emphasis is placed on reducing reliance on manufacturing.
- Which of the statements above are correct?
- (a) 1 only
(b) 1 and 2 only
(c) 2 only
(d) 1, 2, and 3
8. **Assertion (A):** Delhi's water crisis is exacerbated during summers due to inadequate infrastructure.
- Reason (R):** The city's water treatment plants operate at full capacity but fail to meet increased summer





demand.

- (a) Both A and R are true, and R is the correct explanation of A
- (b) Both A and R are true, but R is not the correct explanation of A
- (c) A is true, but R is false
- (d) A is false, but R is true

9. Consider the following statements about the role of reverse transcriptase in cancer research:

- 1. It helps integrate viral DNA into the host genome in retroviral infections.
- 2. Its discovery has led to significant advancements in targeted cancer therapies.
- 3. It is used directly in chemotherapy to kill cancer cells.

Which of the statements above are correct?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 only
- (d) All of the above

10. **Assertion (A):** The presence of 'green-beard' genes in social amoebas demonstrates a genetic basis for altruistic behavior.

Reason (R): These genes help amoebas recognize and cooperate with genetically similar individuals.

- (a) Both A and R are true, and R is the correct explanation of A
- (b) Both A and R are true, but R is not the correct explanation of A
- (c) A is true, but R is false
- (d) A is false, but R is true

11. Consider the following statements regarding the EU Parliamentary elections:

- 1. All EU countries must allow voting from the age of 16.
- 2. EU citizens living abroad can vote for candidates either from their country of residence or origin.
- 3. Proportional representation is the only voting system used.

Which of the statements above are incorrect?

- (a) 1 only
- (b) 2 only
- (c) 1 and 3 only
- (d) All of the above

12. **Assertion (A):** Air pollution leads to higher incidences of respiratory and cardiovascular diseases.

Reason (R): Pollutants such as PM_{2.5} and nitrogen dioxide can penetrate deep into lung tissues and enter the bloodstream.

- (a) Both A and R are true, and R is the correct explanation of A
- (b) Both A and R are true, but R is not the correct explanation of A
- (c) A is true, but R is false
- (d) A is false, but R is true

13. Which of the following is not a result of the impact of the Hunga Tonga-Hunga Ha'apai volcanic eruption on global climate?

- (a) Temporary cooling effects in the Southern Hemisphere





- (b) Significant ozone layer depletion
- (c) Minimal overall impact on global temperatures
- (d) Permanent alteration of global weather patterns

14. Consider the following about the "Air of the Anthropocene" project:

1. It uses digital technology to visually represent levels of air pollution.
2. The project is limited to scientific data collection without public engagement.
3. It highlights the health risks associated with increased pollution through visual art.

Which of the statements above is/are correct?

- (a) 1 and 3 only
- (b) 1 and 2 only
- (c) 2 and 3 only
- (d) All of the above

15. **Assertion (A):** India aims to significantly reduce its reliance on coal by 2047.

Reason (R): The country is investing heavily in renewable energy sources like solar and wind.

- (a) Both A and R are true, and R is the correct explanation of A
- (b) Both A and R are true, but R is not the correct explanation of A
- (c) A is true, but R is false
- (d) A is false, but R is true

16. Consider the implications of the discovery of reverse transcriptase on scientific research:

1. It has revolutionized our understanding of genetic flow from RNA to DNA.
2. It led to the debunking of the previously established central dogma of biology.
3. It has been pivotal in the development of gene editing technologies.

Which of the statements above are correct?

- (a) 1 and 3 only
- (b) 1 and 2 only
- (c) 2 and 3 only
- (d) All of the above

17. **Assertion (A):** The cooling effect of green spaces reduces the urban heat island effect.

Reason (R): Plants and trees, through the process of transpiration, release moisture, which cools the air.

- (a) Both A and R are true, and R is the correct explanation of A
- (b) Both A and R are true, but R is not the correct explanation of A
- (c) A is true, but R is false
- (d) A is false, but R is true

18. Which factor does not contribute to the worsening of Delhi's water crisis during summer?

- (a) Increased agricultural water demand upstream
- (b) Lower than average rainfall during monsoon
- (c) Reduced industrial water usage
- (d) Increased domestic water consumption

19. Consider the following outcomes of the European Parliament elections:

1. The elections determine the President of the European Commission.
2. Members of the European Parliament (MEPs) cannot simultaneously hold a national ministerial position.





3. Voter turnout has consistently increased in each election since 1979.

Which of the statements above are correct?

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

20. **Assertion (A):** The technological advancements in cancer research have decreased the need for invasive procedures.

Reason (R): Technologies like liquid biopsies allow for cancer detection from blood samples.

- (a) Both A and R are true, and R is the correct explanation of A
- (b) Both A and R are true, but R is not the correct explanation of A
- (c) A is true, but R is false
- (d) A is false, but R is true

21. **Assertion (A):** Excessive health regulations in India are too complicated and overlapping, hindering their effective implementation.

Reason (R): There are too many regulations, which set unrealistic standards, especially for smaller healthcare providers.

- (a) Both A and R are correct and R is the correct explanation of A
- (b) Both A and R are correct but R is not the correct explanation of A
- (c) A is correct, R is incorrect
- (d) R is correct, A is incorrect

22. Consider the following statements about the NEET-UG 2024 controversy:

- 1. The unusually high number of top scorers raised concerns about the integrity of the examination.
- 2. Claims of a paper leak in Patna further fueled the controversy.
- 3. The National Testing Agency (NTA) defends the integrity of the examination by claiming it was an error-free process.

- (a) Only one statement
- (b) Only two statements
- (c) All three statements
- (d) None of the above

23. Consider the following about the Women's Reservation Bill:

- 1. It guarantees 33% of the seats for women in the Lok Sabha and state legislatures.
- 2. Despite its passage, the number of women in the Lok Sabha has increased.

- (a) 1 only
- (b) 2 only
- (c) Both 1 and 2
- (d) None of the above

24. Which of the following statements are incorrect regarding the new global plastics treaty negotiations?

- 1. The treaty exclusively focuses on reducing plastic use globally.





2. Informal waste workers advocate for formal recognition and integration into the treaty discussions.
 3. India's role is to advocate for recycling enhancements without a total elimination of plastics.
 - (a) Only 1 and 3
 - (b) Only 1 and 2
 - (c) Only 2 and 3
 - (d) All of the above
25. Which of the following are reasons for the delay in assembly elections in Jammu and Kashmir?
1. Recent terrorist attacks have created instability.
 2. The Supreme Court has not issued any directives regarding elections.
 - (a) 1 only
 - (b) 2 only
 - (c) Both 1 and 2
 - (d) None of the above

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Answers with Explanation

1. **Answer: (a) Both A and R are true, and R is the correct explanation of A** Explanation: Increased urbanization typically results in the replacement of vegetative surfaces with concrete and asphalt. These materials have higher thermal mass and absorb more heat during the day and radiate it during the night, leading to higher temperatures in urban areas compared to rural areas. This phenomenon is known as the urban heat island effect, thus R correctly explains A.
2. **Answer: (a) 1 and 2 only** Explanation: The discovery by JWST of an unexpectedly large and bright galaxy dating back to 290 million years after the Big Bang does indeed suggest that galaxies formed sooner after the Big Bang than previously thought and challenges our understanding of dark matter's influence on early galaxy formation. However, statement 3 is too strong as current models require modification rather than complete revision.
3. **Answer: (d) Both A and R are false** Explanation: The European Parliament elections do not use a uniform voting system across all member states. Each member state can decide its own method for the European elections, which can include systems like proportional representation or preferential voting. This means both A and R are false as the premise of a uniform voting system is incorrect.
4. **Answer: (b) The discovery challenges the belief that only protein-coding regions play critical roles in the development of genetic diseases** Explanation: The traditional view in genetics has been that protein-coding regions of the DNA are primarily responsible for the development of diseases. However, the discovery that non-coding DNA regions, such as certain enhancers, have a significant impact on disease mechanisms challenges this view and highlights the complexity of genetic contributions to diseases like IBD.
5. **Answer: (a) Both A and R are true, and R is the correct explanation of A** Explanation: Special Category Status (SCS) is designated to states facing geographical and economic handicaps, providing them with





benefits like a higher share of central funds, which are critical for improving their infrastructural and economic conditions. Thus, R correctly explains why A is crucial, as preferential treatment in federal funding under SCS helps economically uplift disadvantaged states.

6. **Answer: (a) Explanation:** Exit polls are surveys conducted immediately after voters have cast their votes, intended to predict the outcome of the election before the official results are confirmed. They rely on a representative sample of voters and their disclosed voting preferences to make early predictions, which is why the reason correctly explains the assertion.
7. **Answer: (b) Explanation:** India's strategy to become a developed nation by 2047 involves maintaining a high growth rate and investing in modern sectors like renewable energy and technology. However, the strategy does not involve reducing reliance on manufacturing; rather, it emphasizes boosting manufacturing to create jobs and promote industrial growth, making statement 3 incorrect.
8. **Answer: (a) Explanation:** Delhi's water crisis during summers is largely due to the city's water treatment infrastructure, which, while operational at full capacity, fails to meet the heightened demand. This seasonal peak in demand leads to shortages, exemplifying how infrastructure inadequacies directly contribute to the crisis, hence the reason explains the assertion perfectly.
9. **Answer: (a) Explanation:** Reverse transcriptase is crucial in integrating viral DNA into the host genome, which has been a pivotal discovery for understanding retroviral infections and designing targeted therapies for diseases like HIV. However, while it has led to advances in cancer research, it is not used directly in chemotherapy treatments, which typically involve cytotoxic drugs that kill cancer cells, making statement 3 incorrect.
10. **Answer: (a) Explanation:** The presence of 'green-beard' genes in social amoebas supports the concept of genetic mechanisms driving altruistic behavior, where these genes enable amoebas to recognize and preferentially cooperate with kin. This genetic basis for altruism aligns with evolutionary theories that suggest altruistic behavior can evolve if it benefits genetically similar individuals.
11. **Answer: (c) Explanation:** The EU allows member states flexibility in setting minimum voting ages, and not all countries permit voting from age 16. Additionally, while proportional representation is common, it is not the sole system used across the EU. Some states allow preferential voting, showcasing the diversity in electoral systems within the EU, making statements 1 and 3 incorrect.
12. **Answer: (a) Explanation:** Air pollution contributes to respiratory and cardiovascular diseases through pollutants such as PM2.5 and nitrogen dioxide, which can penetrate deep into lung tissues and enter the bloodstream, causing inflammation and other health issues. This physiological impact directly explains the higher incidences of such diseases in polluted environments.
13. **Answer: (d) Explanation:** While the Hunga Tonga-Hunga Ha'apai eruption had noticeable effects like contributing to a temporary large ozone hole, its overall impact on global temperatures was minimal, and it did not permanently alter global weather patterns. The effects were significant but localized and temporary, with minimal long-term global climatic change.
14. **Answer: (a) Explanation:** The "Air of the Anthropocene" project uses innovative digital light painting techniques to visualize air pollution levels, effectively communicating the health risks associated with air pollution. The project actively engages the public by making invisible pollutants visible through artistic representation, contradicting the statement that it lacks public engagement.
15. **Answer: (a) Explanation:** India's goal to reduce reliance on coal by 2047 is supported by substantial investments in renewable energy sources like solar and wind. This transition aligns with global efforts to





combat climate change and is essential for sustainable development, thus the reason directly explains why such a shift in energy policy is crucial for India's future.

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16. **Answer: (a) Explanation:** The discovery of reverse transcriptase revolutionized the understanding of how genetic information can be transferred from RNA to DNA, challenging the previously accepted central dogma which stated that genetic information flows only from DNA to RNA to protein. This enzyme has also facilitated the development of gene editing technologies by improving our understanding of genetic mechanisms. The role of reverse transcriptase in gene therapy and other biotechnological applications underscores its significance beyond its original discovery context, supporting both statements 1 and 3.

17. **Answer: (a) Explanation:** Green spaces in urban areas contribute significantly to reducing the urban heat island effect. This cooling is primarily achieved through the process of transpiration, where plants and trees release water vapor into the air, which absorbs heat during its evaporation. This not only cools the surrounding air but also improves overall urban microclimates. The reason provided directly explains why increased green spaces can lead to a measurable reduction in urban temperatures, thus supporting the assertion.

18. **Answer: (c) Explanation:** In the context of Delhi's water crisis during summers, factors like increased agricultural water demand upstream and lower than average rainfall significantly exacerbate water shortages. However, reduced industrial water usage would typically conserve water rather than worsen the crisis. In fact, less industrial demand could potentially alleviate some pressure on urban water supplies, making it an incorrect factor in the context of exacerbating Delhi's water crisis.

19. **Answer: (d) Explanation:** The European Parliament elections significantly impact EU governance but do not determine the President of the European Commission directly; that role is influenced more broadly by the political outcomes of the election. MEPs must indeed avoid holding dual roles in both national governments and the European Parliament, ensuring their duties are focused solely on EU matters. The statement about consistently increasing voter turnout since 1979 is incorrect, as voter turnout has varied, with some elections seeing lower participation than others.

20. **Answer: (a) Explanation:** Technological advancements in the field of oncology, particularly through the introduction of liquid biopsies, have significantly reduced the need for invasive diagnostic procedures. Liquid biopsies allow for the detection and analysis of cancer markers through simple blood tests, providing a non-invasive alternative to surgical biopsies. This capability not only minimizes patient discomfort but also expedites the diagnostic process, thus enabling earlier and potentially more effective interventions. The reason precisely explains the assertion, highlighting how modern technology facilitates improved cancer diagnostics and patient care.

21. **(a) Both Assertion and Reason are correct, and Reason is the correct explanation of Assertion.** The complexity of overlapping health regulations in India complicates compliance, especially for smaller healthcare providers. These regulations often set unrealistic standards which are difficult to meet, particularly by government facilities. The private sector faces stringent enforcement, suggesting a disparity that needs addressing for equitable healthcare quality and compliance.

22. **(C) All three statements are correct.** NEET-UG 2024 faced controversy due to an unusually high number of top scorers, allegations of a paper leak, and rapid result declaration, raising suspicions about the examination's integrity. The National Testing Agency defended the process, despite the controversies, which highlights ongoing challenges in administering such high-stakes examinations transparently.





23. **(a)** Statement 1 is correct; the Women's Reservation Bill ensures 33% reservation, but despite its implementation, the number of women in the Lok Sabha actually decreased, making statement 2 incorrect. This situation underscores the complexity of enhancing women's representation in politics, where legislative measures alone are insufficient without supportive political and social environments.
24. **(B)** Only Statements 2 and 3 are correct. The global plastics treaty negotiations highlight the significant role of informal waste workers and the need for practical regulations that consider the realities of recycling and waste management. This approach aims to ensure that policies are not only effective but also equitable across different regions and economic contexts.
25. **(a)** Only Statement 1 is correct. The question of holding general elections in Jammu and Kashmir amidst recent terrorist attacks adds to the complexity of maintaining democratic processes in conflict zones. These conditions underscore the importance of robust security measures to ensure the safe conduct of elections, reflecting the ongoing security challenges in the region.

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