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PART—II/PAPER—VII

BOTANY

PAPER—II

Time : 3 Hours

Full Marks : 250

The question paper contains **18 (Eighteen)** *questions in* **GROUP—A, (12)** *and* **GROUP—B, (06)** *together.*

GROUP—A

Candidates to attempt **10** ***(ten)*** *questions within word limit of* **250.**

Each question carries **15** *marks.*

1. Justify the statement that the mitotic spindle determines the site of cytoplasmic cleavage.

2. What is heterosis breeding? Mention its key aspects.

3. What is the phenomenon of dominance? Explain by giving at least one plant-based example of contrasting characters.

4. Discuss the origin, types and functions of endoplasmic reticulum.

5. What is evolution? Describe the evolutionary biology and its misconceptions.

6. Give a detailed account of apomixis and its uses in plant breeding.

7. Explain the concept and applications of molecular markers in plant breeding.

8. What is genetic code? Explain that the minimum size of a code word should be a triplet.

9. Why are histones considered amongst the highly conserved proteins? Explain.

10. What is agroinfection? Describe the various methods of direct gene transfer.

11. What are lethal genes? Describe lethal genes by giving at least two examples from a plant system.

12. Justify the statement that the cytosol is an important place for intermediary metabolism.

Candidate must not write on this margin.

GROUP—B

Candidates to attempt **05** ***(five)*** *questions within word limit of* **300**.

Each question carries **20** *marks.*

13. Describe the chemical nature of ABA, its biological activity and physiological responses in higher plants.

14. How does phytochrome regulate certain daily rhythms in plants? Explain.

15. What is a community? Discuss concept, structure and dynamics of an ecological community.

16. Discuss the factors regulating the movement of water in plants.

17. Describe the protection and repair mechanisms of PS-II reaction centre against photoinhibition.

18. What is seed dormancy? Discuss the role of environmental factors in controlling the release of seed dormancy.

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