

Total No. of Questions - 21

Total No. of Printed Pages - 2

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No.

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**Part - III**  
**BOTANY, Paper - I**  
**(Biological Sciences)**  
**(English Version)**

**Time : 3 Hours****Max. Marks : 60**

Note : Read the following instructions carefully :

- 1) Answer **all** the questions of Section 'A'. Answer **any six** questions out of eight in Section 'B' and answer **any two** questions out of three in Section 'C'.
- 2) In Section 'A', questions from Sr. Nos. 1 to 10 are of "**Very Short Answer Type**". Each question carries **two** marks. Every answer may be limited to five lines. Answer **all** the questions at one place in the same order.
- 3) In Section 'B', questions from Sr. Nos. 11 to 18 are of "**Short Answer Type**". Each question carries **four** marks. Every answer may be limited to 20 lines.
- 4) In Section 'C', questions from Sr. Nos. 19 to 21 are of "**Long Answer Type**". Each question carries **eight** marks. Every answer may be limited to 60 lines.
- 5) Draw labelled diagrams wherever necessary for questions in Section 'B' and 'C'.

**SECTION A**

Note : Answer **all** questions. Each answer may be limited to 5 lines.**10 × 2 = 20**

1. Which group of plants are called 'amphibians of the plant kingdom'? Give an example.
2. What are assimilatory roots? Give two examples.
3. Which aerial stem modification is concerned with vegetative propagation? Give two examples.

4. What is a polygamous condition? Give two examples.
5. Name the alkaloid obtained from *Atropa belladonna*. What is its use?
6. Who proposed the cell lineage theory? What does this theory represent?
7. The sequence of nitrogen bases on one strand of DNA is GCT ATG CCA TGC. What is the sequence present on the opposite strand?
8. Define ecology. Name the scientist who first used the term, ecology.
9. What is linkage? Who discovered it?
10. What are mutagens? Mention their types.

### SECTION B

Note : Answer **any six** questions. Each answer may be limited to 20 lines.  $6 \times 4 = 24$

11. Write a short note on a false whorl-like inflorescence.
12. Explain multiple fruits with examples.
13. Explain binomial nomenclature.
14. Describe the cell organelle which is responsible for the synthesis of starch.
15. Bring out the differences between mitosis and meiosis.
16. What is a laticiferous tissue? Describe the types of laticifers with examples.
17. Write briefly about the classification of xerophytes.
18. Show the gametic combination of a dihybrid cross in the form of a punnet square. Give the phenotypic and genotypic ratios of  $F_2$  generation.

### SECTION C

Note : Answer **any two** questions. Each answer may be limited to 60 lines.  $2 \times 8 = 16$

19. Describe any four leaf modifications with suitable examples and draw their diagrams.
20. Describe the structure of an embryo sac that is ready for fertilization with the help of a neat labelled diagram.
21. Describe the internal structure of a monocot root with the help of neat labelled diagrams.