

Total No. of Questions - 21
Total No. of Printed Pages - 2

Regd. No.

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Part - III
BOTANY, Paper - II
(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 5 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. What is holdfast? What is its use? Mention the species of spirogyra having holdfast.
2. Define heterothallism. Who discovered it and in which species of Rhizopus?
3. Which process will be affected when coralloid roots are removed from a cycas plant? Give reasons.

4. Define botulism. Name the bacterium responsible for botulism.
5. What is the water potential value of pure water? If 5 grams of sodium chloride is added, what will happen to its water potential value?
6. What type of soil water is available to plants? Define it.
7. Define symport and antiport.
8. How is Azolla helpful as biofertilizer?
9. Write the enzyme code number of Glucose-6 phosphotransferase. What does the four digits of the code number indicate?
10. Name the alkaloid obtained from the seeds of colchicum autumnale. What is its importance?

SECTION B

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

11. Describe the structure of prothallus in Pteris.
12. How are bacteria classified on the basis of number and distribution of flagella?
13. Explain the structure of T-even bacteriophages.
14. Describe briefly, the mechanism of stomatal opening and closing.
15. Describe the connecting link reaction between glycolysis and Kreb's cycle.
16. Write any four physiological effects of gibberellins.
17. Write a short note on mass selection.
18. Enumerate the applications of the plant tissue culture technique.

SECTION C

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

19. Describe the internal structure of the funaria capsule.
20. With the help of biochemical reactions, explain the various phases of the Calvin cycle.
21. Explain the various steps in recombinant DNA technology.