

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 :

- (i) 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.
- (ii) 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 these questions at one place in the same order.
- (iii) 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.
- (iv) 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.
- (v) Draw labelled diagrams, wherever necessary for questions in Sections B and C.

SECTION A

10×2=20

Note :— Answer ALL the questions. Each answer may be limited to 5 lines.

1. What are porins ? What role do they play in diffusion ?
2. What is the primary acceptor of CO₂ in C₃ plants ? What is first stable compound formed in a Calvin cycle ?
3. What is conjugation ? Who discovered it and in which organism ?
4. Explain the terms phenotype and genotype.
5. What are the components of a nucleotide ?

6. Write any *two* chemical differences between DNA and RNA.
7. What is down-stream processing ?
8. Name the nematode that infects the roots of tobacco plants. Name the strategy adopted to prevent this infestation.
9. What is meant by hidden hunger ?
10. What nucleopolyhedrovirus is being used for now-a-days ?

SECTION B

6×4=24

Note :—Answer any SIX questions. Each answer may be limited to 20 lines.

11. How does ascent of sap occur in tall trees ?
12. Explain the steps involved in the formation of root nodule.
13. Write briefly about enzyme inhibitors.
14. Write a note on agricultural/horticultural applications of auxins.
15. Explain the structure of T-even bacteriophages.
16. Explain the Law of Dominance using a monohybrid cross.
17. Draw the schematic/diagrammatic presentation of the lac operon.
18. What are some biosafety issues concerned with genetically modified crops ?

SECTION C

2×8=16

Note :— Answer any TWO questions. Each answer may be limited to 60 lines.

19. Explain the reactions of Krebs cycle.
20. Explain briefly the various processes of recombinant DNA technology.
21. Describe the tissue culture technique. What are the advantages of tissue culture over conventional method of plant breeding in crop improvement programmes ?