Total No. of Questions : **21**
Total No. of Printed Pages : **2**

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.

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.

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.

Draw labelled diagrams, wherever necessary for questions in Section - B and C.

SECTION - A

Note : Answer *all* the questions. **10x2=20**

1. What are porins ? What role do they play in diffusion ?
2. Where does the photolysis of H_2O occur ? What is its significance ?
3. What are pleomorphic bacteria ? Give an example.
4. What is point mutation ? Give an example.
5. What is meant by charging of tRNA ?
6. Distinguish between heterochromatin and euchromatin. Which of the two is transcriptionally active ?
7. Give one example for each of transgenic plants which are suitable for food processing and those with improved nutritional quality.
8. What is the full form of PCR ? How is it useful in biotechnology ?
9. Why does 'Swiss cheese' have big holes ? Name the bacteria responsible for it.
10. Give two examples of fungi used in SCP production.

SECTION - B

Note : Answer *any six* questions. 6x

11. Write briefly about enzyme inhibitors.

12. Define and explain water potential.

13. Explain the steps involved in the formation of root nodule.

14. What are the physiological processes that are regulated by ethylene in plants ?

15. Explain the structure of TMV.

16. Define and design a test-cross.

17. What are the differences between DNA and RNA ?

18. Give a brief account of Bt cotton.

SECTION - C

Note : Answer *any two* questions. 2x8=1

19. Give an account of glycolysis. Where does it occur ? What are the end products ? Trace the fate of these products in both aerobic and anaerobic respiration.

20. Explain briefly the various processes of recombinant DNA technology.

21. Describe the tissue culture technique and what are the advantages of tissue culture over conventional method of plant breeding in crop improvement programmes ?

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