227

III

Total No. of Questions – 21

Total No. of Printed Pages – 2

Regd. No.

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

Note : Answer **all** the questions. Each answer may be limited to **5** lines : $10 \times 2 = 20$

1. Differentiate osmosis from diffusion.
2. Define the law of limiting factors proposed by Blackman.
3. What are Pleomorphic Bacteria ? Give one example.
4. What is meant by point mutation ? Give one example.
5. What is difference between exons and introns ?

6. Distinguish between heterochromatin and euchromatin. Which of the two is transcriptionally active ?

7. How does one visualize DNA on an agar gel ?

8. Name the Nematode that infects roots of tobacco plants. Name the strategy adopted to prevent this infestation.

9. Which two species of sugarcane were crossed for better yield ?

10. What are fermentors ?

SECTION – B

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

11. "Transpiration is a necessary evil." Explain.

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

13. Explain different types of co-factors.

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 monohydride cross.

17. What are the differences between DNA and RNA ?

18. List out the beneficial aspects of transgenic plants.

SECTION – C

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

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. Give a brief account of the tools 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 ?
