227/TS

A

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 :

(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 Sl. 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.

(3) In Section – B, questions from Sl. 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 Sl. 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 Sections – B and C.

SECTION – A

10 × 2 = 20

Note : Answer **all** questions. Each answer may be limited to **5** lines.

1. Compare the imbibing capacities of pea and wheat seeds.

2. What is lysozyme ? What is its function ?

3. What will be the phenotypic ratio in the offsprings obtained from the following crosses. (Note : Gene 'A' is dominant over gene 'a')

   (a) Aa × aa (b) AA × aa

4. In a typical DNA molecule, the proportion of thymine is 30% of the N bases. Find out the percentages of other N bases.

5. What is meant by capping and tailing ?

6. Give different types of cry genes and pests which are controlled by the proteins encoded by the genes.

7. What is down-stream processing ?

8. Which part of the plant is best suited for making virus-free plants and why ?

9 Name a microbe used for statin production. How do statins lower blood cholesterol level ?

10. Write the balanced equation of nitrogen fixation.

SECTION – B

6 × 4 = 24

Note : Answer any **six** questions. Each answer may be limited to **20** lines.

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

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

13. Define RQ. Write a short note on RQ.

14. How auxins are applied in agriculture/horticulture ?

15. How are bacteria classified on the basis of number and distribution of flagella ?

16. Define and design a test cross.

17. Draw the schematic/diagrammatic presentation of the lac operon.

18. What are bio-safety 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 briefly the various processes of recombinant DNA technology.

20. You are a Botanist working in the area of plant breeding. Describe the various steps that you will undertake to release a new variety.

21. Explain Calvin cycle with the help of equations.