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II

Total No. of Questions - 21

Total No. of Printed Pages - 2

Regd. No. | | | | | | | 4 | 1 | 5 | 2 |

Part - III

BOTANY, Paper - I

(Biological Sciences)

(English Version)

Time : 3 Hours ***Max. Marks : 60***

Note : Read the following instructions carefully :

1) Answer **all** 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 five 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 the basic unit of classification? Define it.

2. How are viroids different from viruses?

3. Who discovered the cell? Which book was written by him?

4. What is meant by a pulvinus leafbase? In members of which angiospermic family do you find them?

5. Name a plant that has a single fruit developing from the entire inflorescence. What is such a fruit called?

6. Name the type of pollination mechanism found in members of Fabaceae.

7. Which part of a bacterial cell is targeted in gram staining?

8. Explain the zwitterionic form of an amino acid.

9. If a tissue has at a given time 512 cells, how many cycles of mitosis had the original parental single cell undergone?

10. Name the type of land plants that can tolerate the salinities of the sea.

SECTION B

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

11. Write the role of fungi in our daily life.

12. Differentiate between red algae and brown algae.

13. List the changes observed in an angiosperm flower subsequent to pollination and fertilization.

14. Describe the nonessential floral parts of plants belonging to Fabaceae.

15. What are nucleosomes? What are they made of?

16. Which division is necessary to maintain a constant chromosome number in all body cells of multicellular organisms? Why is it necessary?

17. A transverse section of the trunk of a tree shows concentric rings which are known as annual rings. How are these rings formed? What is the significance of these rings?

18. List the anatomical adaptations of hydrophytes.

SECTION C

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

19. With a neat labelled diagram, describe how a stem is variously modified to perform different functions. Describe any six modifications.

20. With a neat labelled diagram, explain the parts of a mature angiosperm embryo sac. Mention the role of synergids.

21. Describe the internal structure of a dorsiventral leaf with the help of a labelled diagram.