2024

6th Semester Examination

BOTANY (Honours)

Paper : DSE 4-T

[CBCS]

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Full Marks : 40 Time : Two Hours

The figures in the margin indicate full marks.
Candidates are required to give their answers in their own words as far as practicable.

[Analytical Techniques in Plant Sciences]

Group - A

Answer any *five* questions from the following : 2×5=10

1. Define fluorochrome.
2. What is cryofixation?
3. Mention the usage of SDS in electrophoresis.
4. What is negative staining?
5. What is auto-radiography?
6. Write briefly about TLC method.

P.T.O.

7. What do you mean by X-ray crystallography?

8. How cell can be fractionation?

Group - B

Answer any ***four*** questions from the following : 5×4=20

9. Elaborate the principles of mass spectrometry.

10. Write down the use of statistics in biological science.

11. Write down the principles of spectrophotometer and their applications.

12. What is Chromatography? Discuss the principles of Column Chromatography.

13. Explain differential and density gradient centrifugation.

14. What are radioisotopes? Discuss their uses.

Group - C

Answer any ***one*** question from the following : 10×1=10

15. Write short notes on : 5×2

    (i) Gel Electrophoresis

    (ii) Chi-square test

16. Elaborate the principles and usage of transmission and scanning electron microscopy with suitable example of specimen. 5+5

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OR

[Research Methodology]

Group - A

Answer any ***five*** questions from the following : 2×5=10

1. What is Genomics?

2. What is meant by copy right?

3. What are the differences between Molarity and Normality?

4. What is plagiarism?

5. Define explant in tissue culture.

6. What is field research?

7. Write down the role of fixatives in cytological slide preparation.

8. What do you mean by research methodology?

Group - B

Answer any ***four*** questions from the following : 5×4=20

9. Write down the different types of research and their applications. 5

10. What are the different safety measures and procedure for general laboratory practices? 3+2

P.T.O.

11. Write down the differences between qualitative and quantitative characters with suitable examples. 5

12. What is tabulation and how the laboratory record can be maintained? 3+2

13. Write down the importance of literature review. What is meant by field research? 3+2

14. What are reactive dyes fluorochromes? Mention their uses. 3+2

Group - C

Answer any ***one*** question from the following : 10×1=10

15. Explain the different cytogenetic techniques used in plant sciences. 10

16. Name the model organism used in the experiment of jumping genes. Write a note on the experiment of Barbara McClintock. 1+9

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