

FOURTH SEMESTER M.Sc. DEGREE EXAMINATION, APRIL 2025
(Regular/Improvement/Supplementary)
BOTANY
FBOT4E04 - MOLECULAR BIOLOGY AND PHYTOCHEMISTRY

Time: 3 Hours**Maximum Weightage: 30****Part A: Answer any *four* questions. Each carries *two* weightage.**

1. Write Beer-Lambert's law with formula and its application in instrumentation.
2. What is isopycnic centrifugation? Explain.
3. Explain satellite DNA with its application in biology.
4. What are Flavonoids? Give suitable examples and its application.
5. Explain NMR spectroscopy.
6. What is meant by Ultracentrifugation.
7. List out the properties of electromagnetic radiations.

(4 × 2 = 8 weightage)

Part B: Answer any *four* questions. Each carries *three* weightage.

8. Explain RNA interference. Briefly explain its role in plants.
9. Write briefly about gene expression in plants.
10. Compare colorimeter and spectrophotometer.
11. Describe cell signaling in pollen recognition.
12. Explain the role of telomerase in gene expression of plants.
13. Write a short note on super critical extraction in phytochemistry.
14. What are antioxidants? Explain its significance in medicines.

(4 × 3 = 12 weightage)

Part C: Answer any *two* questions. Each carries *five* weightage.

15. What are transposons? Give its classification and explain its role in genome evolution.
16. Explain the principle and types of chromatography with its importance in research.
17. Write an essay on organization, replication and expression of chloroplast DNA in plants.
18. What are the commonly used phytochemical extraction methods? Give examples of each.

(2 × 5 = 10 weightage)