

2024
M.Sc.
Second Semester
CORE – 07
BOTANY
Course Code: MBOC 2.31
(Biochemistry & Biotechnology)

Total Mark: 70
Time: 3 hours

Pass Mark: 28

Answer five questions, taking one from each unit.

UNIT-I

1. What are fatty acids? Explain the regulation of fatty acid synthesis. 2+12=14
2. Give an account on the following: 7×2=14
 - (a) Properties of amino acids
 - (b) Functions of proteins

UNIT-II

3. What are bioenergetics? Write a note on the significance of the laws of thermodynamics in relation to the biological systems. 2+12=14
4. Write notes on the following: 7×2=14
 - (a) Factors affecting enzyme activity
 - (b) G-protein receptor

UNIT-III

5. Explain the cytokinin signalling pathway. 14
6. Write notes on the following: 7×2=14
 - (a) Second messengers
 - (b) Chemotaxis

UNIT-IV

7. Considering that a drought resistant gene has to be transferred to a dicot plant, how would one make use of *Agrobacterium tumefaciens* to do the same. Discuss. 14
8. Write short notes on the following: 7×2=14
- (a) Blue-white screening
 - (b) Bacterial artificial chromosome

UNIT-V

9. Discuss on the dideoxynucleotide chain termination method of DNA sequencing. 14
10. Write notes on the following: 7×2=14
- (a) Western blotting
 - (b) Nested PCR
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