

2022
B.A./B.Sc.
First Semester
CORE – 2
BOTANY
Course Code: BOC 1.21
(Biomolecules & Cell Biology)

Total Mark: 70

Pass Mark: 28

Time: 3 hours

Answer five questions, taking one from each unit.

UNIT-I

1. What are carbohydrates? Describe in detail the classification of carbohydrates with examples. 2+12=14
2. Write short notes on the following: 7×2=14
 - (a) Structure and properties of water
 - (b) Properties and functions of triacyl glycerol

UNIT-II

3. What is protein denaturation? Describe the levels of protein structure. 2+12=14
4. Write short notes on the following: 7×2=14
 - (a) Structure of tRNA
 - (b) Nitrogenous bases

UNIT-III

5. Describe the laws of thermodynamics. Give the role of ATP as an energy currency molecule. 9+5=14
6. Write short notes on the following: 7×2=14
 - (a) Lock and key hypothesis
 - (b) Michaelis-Menten equation

UNIT-IV

7. Describe the process of meiosis with labelled diagrams. 14
8. Write short notes on the following: $7 \times 2 = 14$
- (a) Fluid mosaic model
 - (b) Active membrane transport

UNIT-V

9. Differentiate between microfilaments and intermediary filaments.
Describe the structure and role of microtubules. $4 + 10 = 14$
10. Write short notes on the following: $7 \times 2 = 14$
- (a) Molecular organization of chromatin
 - (b) Semi-autonomous nature of mitochondria
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