

**2023**  
**M.Sc.**  
**Second Semester**  
CORE – 08  
**BOTANY**  
*Course Code: MBOC 2.41*  
(Cell & Molecular Biology)

*Total Mark: 70*  
*Time: 3 hours*

*Pass Mark: 28*

*Answer five questions, taking one from each unit.*

**UNIT-I**

1. Write the support of various models describe the molecular organization of plasma membrane. 14
2. Write notes on any two of the following: 7×2=14
  - (a) Cell wall biosynthesis
  - (b) Golgi complex
  - (c) Functional importance of each phase of cell cycle

**UNIT-II**

3. Describe the role of mitochondria in the energy transport chain. 14
4. Write notes on any two of the following: 7×2=14
  - (a) Role of nucleolus
  - (b) Lysosome
  - (c) Vacuole

**UNIT-III**

5. Describe the role of the various enzymes and proteins during replication in prokaryotes. 14
6. Write notes on any two of the following: 7×2=14
  - (a) Degeneracy
  - (b) Universality of the genetic code

(c) Molecular structure of nucleic acids (DNA & RNA)

#### UNIT-IV

7. Discuss in detail the mechanism of eukaryotic mRNA processing and the various enzymes involved in the process. 14
8. Write notes on *any two* of the following: 7×2=14
- (a) Aminoacylation
  - (b) Repressible operon
  - (c) Importance of post translational processing

#### UNIT-V

9. Define mutation. Discuss on the various types of mutation. 2+12=14
10. Write notes on *any two* of the following: 7×2=14
- (a) SOS repair mechanism
  - (b) Homologous and site specific mutation
  - (c) Alkylation
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