

Exam. Code : 210002

Subject Code : 5439

M.Sc. Botany 2nd Semester

CELL BIOLOGY

Paper : BOTC-524

Time Allowed—3 Hours] [Maximum Marks—50

**Note** :—Section-A is compulsory. Attempt any **seven** questions from Section-B and any **three** questions from Section-C.

**SECTION-A**

1. Attempt all parts :

- (i) Distinguish between prokaryotic and eukaryotic cells.
- (ii) Name the components of plasma membrane
- (iii) Define the role(s) of cytoskeleton
- (iv) Define operon
- (v) Distinguish between cell division and cell cycle
- (vi) What are secondary messengers ?
- (vii) Distinguish between euchromatin and heterochromatin
- (viii) Define cellular communication. 8×1

**SECTION-B**

2. Discuss briefly tissue types. 3
3. Write a brief note on membrane proteins. 3
4. Giving suitable examples, describe gene families. 3
5. Discuss characteristics of microbial growth. 3
6. Discuss structure and functions of endoplasmic reticulum. 3
7. Describe bacterial two component signalling system. 3
8. Describe how do cells communicate with one another? 3
9. Write a note on CDKs. 3
10. Write a note on membrane system in chloroplast. 3
11. Plasma membrane is fluid in nature. Comment. 3

**SECTION-C**

12. Discuss in detail cell cycle and its regulation. 7
13. Discuss mechanism of G-protein mediated signal transduction. 7
14. Discuss how ions are transported across the membrane. 7
15. Write a detailed note on protein sorting and targeting. 7
16. Discuss mechanism of neurotransmission regulation. 7