

M.Sc. (Botany) Semester - 1 (CBCS) Examination**Nov/Dec-2023 (SYLLABUS YEAR JUNE-2018)****CELL BIOLOGY(CORE)****Time: 2:30 Hours****Marks: 70****Instructions:**

1. All questions are compulsory.
2. Figures to the right indicate marks.

Q.1 Answer the following (any 7) 14

- (1) Define the term osmosis.
- (2) What is function of the plasma membrane
- (3) State important chromosome models.
- (4) What are proto-oncogenes?
- (5) State the role of the pore complex of nuclear envelope.
- (6) Describe the importance of GPCR in the cell
- (7) Explain the function of actin and myosin.
- (8) What is exocytosis?
- (9) What is the role of PGC in the biogenesis of Mitochondria?
- (10) Write briefly the G1/ S transition in the cell cycle

Q.2 Answer the following (any two) 14

- (1) Explain in detail ultrastructure of chromosomes
- (2) Describe the regulation of CDK – cyclin activity
- (3) Write a note on special types of chromosomes

Q.3 Answer the following

- (1) Describe Vacuoles and their roles in cell structure and function 05
- (2) Explain the ultrastructure of Lysosomes and glyoxisomes 05
- (3) Write a note on photosynthetic units and reaction center 04

OR**Q.3 Answer the following 14**

- (1) Explain the structure and functions of peroxisomes in the cell.
- (2) State the mechanism of GERL system

Q.4 Answer the following (any two) 10**(A) Attempt any two**

- (1) Write a note on ultrastructure of microtubules
- (2) Explain the functions of IF and associated proteins
- (3) What is diffusion ? Explain its importance in transport across cell membrane

(B) Attempt any one 04

- (1) What are uniports and symports?
- (2) State the functions of microtubules

Q.5 Answer the following (any two) 14

- (1) Explain the formation of 'Tumor' cells in the living organism
- (2) Write a note on MDP-MAP kinase pathways
- (3) Explain the Mitochondrial apoptosis pathway in apoptosis.
- (4) What are cell surface receptors? Explain Receptor Tyrosin Kinase
