(20518) Roll No. .....

B. Sc. (Biotech.)-I Year

# NS-3457

## B. Sc. (Biotechnology) Examination, May 2018

### Cell Biology

### (B-103)

### (New)

*Time : Three Hours]* *[Maximum Marks : 50*

***Note :*** Answer any *Five* questions. All questions carry equal marks.

1. Describe the ultrastructure of a plant cell with well labelled diagram. 10

2. Draw a diagram depicting "Fluid mosaic model" of cell membrane structure. Also explain the various components of cell membrane. 10



3. Write detailed notes on the following : 5 each
   (i) Structural differences between prokaryotic and eukaryotic cells
   (ii) Differences between normal and cancer cells.

4. What is central dogma ? Describe the role of DNA and RNA in protein synthesis. 10

5. Write short notes on the following : 2½ each
   (i) Reverse transcription
   (ii) PPLOs
   (iii) Organization of nucelosome
   (iv) Cell cycle.

6. Giving suitable diagrams, discuss the various stages of prophase I of meiotic cell division. 10

7. Write detailed notes on the following : 5 each
   (i) Synaptonemal complex and its role in chromosome pairing
   (ii) Ultrastructure and function of chloroplast.

8. Describe structure, function and origin of peroxisomes. 10

9. Write notes on the following : 4+3+3

(i) Differences between meiotic and mitotic cell division.

(ii) Differences between transcription and translation

(iii) Ultrastructure and function of Golgi complex.

10. Write short notes on the following : 2½ each

(i) Signal transduction pathways

(ii) Role of $Ca^{++}$ ions

(iii) Muscle and nerve cells

(iv) Degradation of cellular components.