

(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

(2)

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 nucleosome
- (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.

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