

15123

M.Sc. DEGREE EXAMINATION, NOVEMBER 2016.

FIRST SEMESTER

Genetics and Genomics

Paper III — CELL BIOLOGY

Time : Three hours

Maximum : 75 marks

(No additional sheet will be supplied)

PART A — (5 × 3 = 15 marks)

Answer any FIVE questions.

Each question carries 3 marks.

Each answer should not exceed 1 page.

1. Plastids
2. Endoplasmic reticulum
3. Telomere
4. Molecular structure of membranes
5. Nitric oxide as cell signalling molecule
6. cAMP
7. Role of protein kinases
8. Fertilization.

PART B — (4 × 15 = 60 marks)

Answer ALL questions.

Each question carries 15 marks.

Each answer should not exceed 6 pages.

9. Write about the microtubules and microfilaments.

Or

10. Explain the following :
 - (a) Structure of nucleus
 - (b) Golgi complex.

11. What is membrane fluidity? Write in detail about fluid mosaic model of plasma membrane.

Or

12. Write in detail about the following :

- (a) Epithelial tissues
- (b) Basement membrane
- (c) Extracellular matrix.

13. Write in detail about active transport of Na^+K^+ and Ca^{2+} .

Or

14. Write about the concept of cell signalling and different signalling molecules.

15. Write in about the following :

- (a) Prophase
- (b) Anaphase
- (c) Cytokinesis.

Or

16. What is meiosis and explain different stages and process of meiosis?

