



FACULTY OF SCIENCE

B.Sc. I-Semester (CBCS) Examination, November / December 2019

Subject: Bio-Technology

Cell Biology and Genetics

Paper – I

Time: 3 Hours

Max.Marks: 80

PART – A (8x4 = 32 Marks)

[Short Answer Type]

Note: Answer any Eight of the following questions.

- 1 Prokaryotic cell membrane
- 2 Fluid mosaic model
- 3 Histones
- 4 Cell division in bacteria
- 5 Mitosis
- 6 Apoptosis
- 7 Law of independent assortment
- 8 Penetrance
- 9 X-Chromosomal inactivation
- 10 Recombination frequency
- 11 Cytoplasmic male sterility in Maize
- 12 Hardy-Weinberg Equilibrium

PART – B (4x12 = 48 Marks)

[Essay Answer Type]

Note: Answer all questions from the following.

- 13 a) Describe the Ultrastructure of eukaryotic cell.

OR

- b) Elaborate in detail the chromosomal aberrations.

- 14 a) Write a note on stages of Meiosis and its significance.

OR

- b) Explain the phases of eukaryotic cell cycle.

- 15 a) Define Mendel's laws and explain the factors contributing to success of Mendel's experiments.

OR

- b) what is multiple allelism? Give a note with suitable examples.

- 16 a) Explain briefly Non-Mendelian inheritance – Maternal effect, variegation in *Mirabilis jalapa*.

OR

- b) Elaborate on mitochondrial inheritance in human and *Neurospora crassa*.

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