

**FACULTY OF SCIENCE**  
**B.Sc. I-Semester (CBCS) Examination, December 2016**

**Subject : Bio-Technology**

**Paper – I : Cell Biology and Genetics**

**Time : 3 Hours**

**Max. Marks: 80**

**PART – A (5 x 4 = 20 Marks)**  
**(Short Answer Type)**

**Note : Answer any FIVE of the following questions.**

- 1/ Polytene chromosomes
- 2/ Fluid mosaic model
- 3/ Apoptosis
- 4/ Significance of mitosis
- 5/ Trihybrid cross-phenotypic and genotypic ratios
- 6/ Waarden-burg syndrome
- 7/ Shell coiling in snails
- 8/ Factors affecting Hardy-Weinberg equilibrium

**PART – B (4 x 15 = 60 Marks)**  
**(Essay Answer Type)**

**Note: Attempt ALL the questions.**

- 9 (a) Illustrate and explain the ultra structure of a eukaryotic cell.

**OR**

- (b) Discuss in detail about the prokaryotic cell.

- 10 (a) Explain the various phases of a eukaryotic cell cycle. Add a note on its significance.

**OR**

- (b) Write in detail about meiosis and explain its significance.

- 11 (a) How is sex determined in Bonellia, Drosophila, and Man?

**OR**

- (b) Write a note on Epistasis using two specific examples.

- 12 (a) Explain about the Mitochondrial inheritance.

**OR**

- (b) Discuss about the cytoplasmic male sterility.

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