

# FACULTY OF SCIENCE

B.Sc. I – Year Examination, March / April 2015

Subject : Bio-Technology (General)

Paper – I

Cell Biology and Genetics

Time : 3 hours

Max. Marks : 100

**Note : Answer all questions. All questions carry equal marks.**

- 1 a) Briefly differentiate between mitosis and meiosis and their significance.  
OR  
b) Explain ultrastructure of a eukaryotic cell with the help of well labeled diagram.
- 2 a) What do you mean by genetic interaction? Explain with the help of any two modified dihybrid ratios.  
OR  
b) Explain trihybrid cross and its application in gene mapping.
- 3 a) Write about Watson and Crick model of DNA structure.  
OR  
b) Griffiths experiments on pneumococcus, proved that the transforming principle is DNA – Elaborate.
- 4 a) What is a chi-square test and how is it useful in genetic analysis, explain?  
OR  
b) Give a brief account of biological data bases and write about its utilization.
- 5 Write short notes on any **Three** of the following :
  - a) Plasmids
  - b) Pleiotropism
  - c) Labeled bacteriophage
  - d) Poisson distribution
  - e) X-linked inheritance

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