

Code No. 2052

**FACULTY OF SCIENCE**

**B. Sc. I-Year Examination, March / April 2016**

**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) Explain in detail about ultra structure and the chromosome organization of prokaryotes.  
**OR**  
(b) Give the detailed ultra structure of Eukaryotic cell (Mitochondria, Chloroplast, Golgi apparatus, Endoplasmic reticulum).
- 2 (a) Explain the Law of independent assortment in dihybrids and trihybrids.  
**OR**  
(b) Define Linkage. Give detailed explanation of recombination frequency and map distance.
- 3 (a) Explain different mechanisms of DNA replication.  
**OR**  
(b) Write a note on :  
(i) Griffith's experiment of transformation  
(ii) Avery, Mc Eleod and Mc Carty's experiments
- 4 (a) Explain the concept of test of hypothesis and its applications in biology.  
**OR**  
(b) Define nucleotide sequence and protein databases and their utilization in biotechnology.
- 5 Write short notes on any **three** of the following:  
(a) Significance of Mitosis and Meiosis  
(b) Incomplete dominance and Co-dominance  
(c) Watson and Crick model of DNA  
(d) Simple regression and correlation  
(e) X-Linked inheritance in haemophilia

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