

Code No. 5583

FACULTY OF SCIENCE  
B.Sc. I Year Examination, March/April 2013  
BIO-TECHNOLOGY (General)  
Paper—I  
Cell Biology and Genetics

Time : Three Hours]

[Maximum Marks : 100

Note :—Answer ALL questions. All questions carry equal marks.

1. (a) Elaborate on the ultrastructure of Eukaryotic cell.  $5 \times 4 = 20$
- OR**
- (b) Write on the structure and significance of specialized chromosomes.  $- 7-7-4$
2. (a) What is Epistasis ? Add a note on any two modifying Mendel's ratios with suitable examples.
- OR**
- (b) Define linkage and recombination. Give the cytological proof of crossing over.  $10$
3. (a) Give the structure of DNA using Watson and Crick model. Write a note on the different forms of DNA.  $12$
- OR**
- (b) How does DNA damage occur in Eukaryotic cell and briefly explain the different types of repair mechanism.
4. (a) Explain the Binomial distribution and their applications to Biology.  $10$
- OR**
- (b) Write about application of t-test and chi-square tests in Biology.  $10$
5. Write short notes on any **THREE** of the following :
- (a) Cell membrane
  - (b) X-linked inheritance
  - (c) B form of DNA
  - (d) Correlation
  - (e) Mitotic crossing over in drosophila.