

B.A./B.Sc.

2nd Sem.

(2517)

**Paper : Biotechnology (Genetics & Biochemistry)****Time allowed: 3 hrs.****Max. Marks: 75**

Question one is compulsory and carry  $1.5 \times 10 = 15$  marks. Attempt one question from each unit  
 $15 \times 4 = 16$  marks.

1. Write short note on
  - i) Gene Interactions
  - ii) Non-disjunction
  - iii) Linkage
  - iv) Cri-du-chat
  - v) Auxotrophs
  - vi) ZDNA
  - vii) Salt bridges
  - viii) ELISA
  - ix) Non-protein enzymes
  - x) Peptidoglycans

Unit-I

2. Differentiate between
  - i) Test cross and back cross
  - ii) Chromatids and centromeres
  - iii) Polytene and lampbrush chromosomes.

3. How will you do the gene mapping ? Explain with suitable examples. Discuss the linkage map.

Unit-II

4. Differentiate between :
  - i) Klinefelter and Turner syndromes
  - ii) Spontaneous and induced mutations
  - iii) Prototrophs and auxotrophs

5. Discuss the mitochondrial extra chromosomal inheritance genetic systems.

Unit-III

6. Discuss the :
  - i) Hydrophilic and hydrophobic group
  - ii) Polypeptides and polysaccharides
  - iii) Membrane lipids and membrane proteins

7. Discuss in detailed the conformation of A, B and Z DNA.

Unit-IV

8. Diagrammatically discuss the competitive enzymes inhibition kinetics.
9. Diagrammatically discuss the non-competitive enzymes inhibition kinetics.

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