(i) Printed Pages : 3] Roll No. .....

(ii) Questions : 9] **Sub. Code :** 0 9 7 3

Exam. Code : 0 0 3 5

B.Sc. (Hons.) 3rd Semester Examination

1127

BIOTECHNOLOGY

(Genetics)

Paper : BIOT-Sem-III-II-T

Time : 3 Hours] **[Max. Marks : 67**

Note :– Attempt *one* question from each of the Units I–IV. Question No. **1** is compulsory.

1. Write short notes : 1×1.5=15

   (i) Dominant and recessive alleles

   (ii) Para and pericentric inversions

   (iii) Non disjunction

   (iv) Tetrad analysis

   (v) Linkage

   (vi) Chi-square test

(vii) Base excision repair

(viii) Transduction

(ix) Auxotrophs

(x) Extrachromosomal inheritance

Unit–I 13 each

2. Describe mechanism of sex determination in man. How does it differ from *Drosophila* ?

3. Describe various types of structural aberrations in chromosomes.

Unit–II 13 each

4. (a) Explain the molecular mechanism of crossing over.

   (b) Write a note on three point test cross.

5. How somatic cell hybridization help in gene linkage studies ?

Unit–III 13 each

6. Describe the types of mutations and give an account of various mutagenic agents.

7. How Hardy-Weinberg equilibrium can help to determine gene frequencies ?

Unit–IV

13 each

8. (a) What is Transformation ? Explain it.

   (b) What do you understand by one gene one enzyme hypothesis ?

9. Explain method of isolation of auxotrophs.