

**Second Year Examination of the
Three Year Degree Course, 2001**

ZOOLOGY

Third Paper

(Heredity and Genetics)

Time : 3 Hours

[Maximum Marks :50]

Attempt any **five** questions,
selecting at least **one** question from each unit,
All questions carry equal marks.

UNIT – I

1. Describe structure of Chromosome:
 - (a) when observed under light microscope
 - (b) when observed under electron microscope.

OR

2. Describe these stages of cell cycle :
 - (a) Initial growth period
 - (b) Second growth period.

UNIT-II

3. Giving suitable example, describe sex-linked inheritance in drosophila.
4. Differentiate between :
 - (a) Sex limited gene and sex influenced gene.
 - (b) Complete sex linkage and incomplete sex linkage.

UNIT-III

5. Draw following diagram of various stages of meiosis showing situation of chromosomes:

- (a) Pachytene
- (b) Diplotene
- (c) First metaphase
- (d) First anaphase
- (e) Second metaphase
- (f) First telophase

6. Write notes on :

- (a) Down syndrome
- (b) Klinefelter's syndrome
- (c) Turner's syndrome

UNIT-IV

7. What do you understand by gene mutation? Differentiate between somatic and germ mutations.

8. What do you understand by chromosomal mutation? Differentiate between chromosomal number and chromosomal aberrations.

UNIT-V

9. What do you understand by genetic engineering?
Describe various steps of formation of recombinant DNA.
10. Explain :
- (a) Triplet
 - (b) Chain initiation codon
 - (c) Chain termination codon