

2 0 2 6

(FYUGP)

(6th Semester)

ZOOLOGY

(MAJOR)

Paper : ZOO/C12T

(Principles of Genetics)

Full Marks : 75

Pass Marks : 40%

Time : 3 hours

*The figures in the margin indicate full marks
for the questions*

1. Explain Mendel's law of segregation and law of independent assortment with suitable examples. 15

Or

Write notes on the following : $7\frac{1}{2}+7\frac{1}{2}=15$

- (a) Lethal alleles
(b) Dominant epistasis

2. Give a detailed account of the molecular mechanisms of crossing over. 15

Or

Explain, in detail, the process of somatic cell hybridization. Add a note on its application.

12+3=15

3. Describe, in detail, the different types of gene mutation. 15

Or

Explain the molecular mechanisms by which UV radiation and chemical mutagens cause mutations.

4. Explain sex-linked chromosomal abnormalities with proper examples. 15

Or

Discuss polygenic inheritance in detail.

5. With appropriate diagrams, explain the process of bacterial transformation in detail. 15

Or

Write notes on the following : $7\frac{1}{2}+7\frac{1}{2}=15$

(a) Bacteriophage

(b) Transposons in bacteria

★ ★ ★