

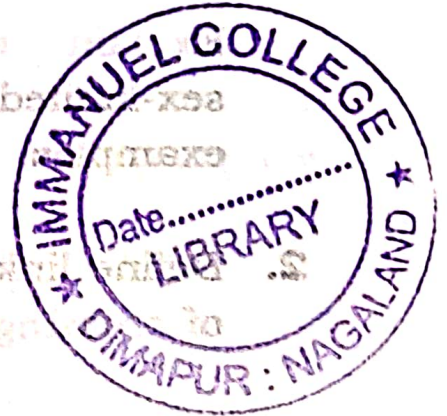
2025

(FYUGP)

(6th Semester)

ZOOLOGY

(MAJOR)



Paper : ZOO/C12

(Principles of Genetics)

Full Marks : 75

Pass Marks : 40%

Time : 3 hours

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

1. Write notes on any two of the following :

$7\frac{1}{2} \times 2 = 15$

(a) Incomplete dominance

(b) Multiple allelism

(c) Codominance

(2)

Or

Explain sex-linked, sex-influenced and sex-limited inheritance with proper examples. 15

2. Define linkage. Explain the cytological basis of crossing-over with proper illustrations. 2+13=15

Or

Explain recombinant frequency as a measure of linkage intensity. Add a note on somatic cell hybridization. 10+5=15

3. Describe the various types of chromosomal aberrations with one example each. 15

Or

Define gene mutation. Explain the molecular mechanism of mutation in relation to UV-light and chemical mutagens. 2+13=15

4. What are sex chromosomes? Explain the mechanism of sex determination in *Drosophila*. 2+13=15

Or

Describe the process of mitochondrial mutation in *Saccharomyces*. Add a note on polygenic inheritance. 10+5=15

L25/583

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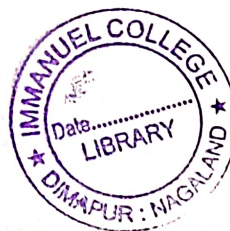
(3)

5. Explain the process of transduction and conjugation with proper diagrams. $7\frac{1}{2}+7\frac{1}{2}=15$

Or

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

- (a) Transposable elements
(b) P elements in *Drosophila*



L25—100/583

Bs/ZOO/C12