

**October 2025**  
**B.A./B.Sc.**  
**Fifth Semester**  
**CORE – 12**  
**ZOOLOGY**  
*Course Code: ZOC 5.21*  
(Principles of Genetics)

Total Mark: 70

Pass Mark: 28

Time: 3 hours

Answer five questions, taking one from each unit.

**UNIT-I**

1. Explain the difference between incomplete dominance and co-dominance giving suitable examples. Add a note on the principles of inheritance. 10+4=14
2. Write a note on each of the following: 7×2=14
  - (a) Multiple and lethal alleles
  - (b) Epistasis

**UNIT-II**

3. What is Linkage? Elucidate the molecular mechanisms of crossing over. 2+12=14
4. Write a note on each of the following: 7×2=14
  - (a) Somatic cell hybridization
  - (b) Inheritance and co-incidence

**UNIT-III**

5. What is chromosomal aberrations? Discuss the different types of chromosomal aberrations by giving suitable examples. 2+12=14
6. Write a note on each of the following: 7×2=14
  - (a) Role of UV light as mutagen
  - (b) CLB method of detecting mutation

## UNIT-IV

7. Describe the chromosomal mechanism of sex determination in man and drosophila. 7+7=14
8. Write a note on each of the following: 7×2=14
- (a) Mitochondrial mutations in *Saccharomyces*
  - (b) Infective heredity in *Paramecium*

## UNIT-V

9. What is polygenic inheritance? Explain in detail polygenic inheritance by giving suitable examples. 2+12=14
10. Write a note on each of the following: 7×2=14
- (a) Transformation in bacteriophage
  - (b) Transposons in human
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