

2022
B.A./B.Sc.
Fifth Semester
CORE – 12
ZOOLOGY
Course Code: ZOC 5.21
(Principles of Genetics)

Total Mark: 70
Time: 3 hours

Pass Mark: 28

Answer five questions, taking one from each unit.

UNIT-I

1. Write notes on the following: 7×2=14
 - (a) Multiple alleles
 - (b) Lethal alleles
2. Explain sex-linked and sex-limited inheritance. 7+7=14

UNIT-II

3. Describe the cytological basis of crossing over. 14
4. Explain the recombination frequency as a measure of linkage intensity.
Add a note on two factor crosses. 7+7=14

UNIT-III

5. Discuss in detail about the molecular basis of mutations in relation to UV light and chemical mutagens. 14
6. Write notes on the following: 7×2=14
 - (a) Types of gene mutations
 - (b) Detection of mutations by attached x-method

UNIT-IV

7. Explain the antibiotic resistance in *Chlamydomonas*. Add a note on the criteria for extrachromosomal inheritance. 10+4=14

8. Define maternal effects. Explain maternal effects in animals giving suitable examples. 2+12=14

UNIT-V

9. Explain conjugation and transduction in bacteriophages. 7+7=14
10. Write notes on the following: 7×2=14
- (a) Transposons in bacteria
 - (b) Transposons in humans
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