

**2023/TDC(CBCS)/ODD/SEM/
ZOOHCC-502T/034**

TDC (CBCS) Odd Semester Exam., 2023

ZOOLOGY

(Honours)

(5th Semester)

Course No. : ZOOHCC-502T

(Principles of Genetics)

Full Marks : 50

Pass Marks : 20

Time : 3 hours

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

SECTION—A

Answer ten questions, selecting any *two* from each

Unit : 2×10=20

UNIT—I

- 1. Why did Mendel select *Pisum sativum* for his experiments?**
- 2. Write a short note on pleiotropy.**
- 3. What is epistasis? Give example.**

24J/50

(Turn Over)

(2)

UNIT—II

4. Define linkage and crossing over.
5. Mention the differences between complete and incomplete linkages.
6. What is linkage map?

UNIT—III

7. What is polyploidy?
8. Define translocation.
9. Write a short note on trisomy.

UNIT—IV

10. Define sex determination.
11. What are Barr bodies?
12. What do you mean by SRX?

UNIT—V

13. What are polygenes? Give example.
14. What are transformation and transduction?
15. Define conjugation.

24J/50

(Continued)

(3)

SECTION—B

Answer *five* questions, selecting any *one* from each

Unit : 6×5=30

UNIT—I

16. Describe Mendel's laws of inheritance with the help of suitable examples. 4+2=6
17. What are multiple alleles? Explain the phenomenon of multiple allelism with special reference to inheritance of ABO blood group in man. 1+5=6

UNIT—II

18. Describe in detail the phenomenon of linkage. 6
19. Explain the mechanism of crossing over. Add a note on its significance. 4+2=6

UNIT—III

20. Define mutation. Describe different types of chromosomal aberrations with suitable illustrations. 1+5=6
21. Discuss molecular basis of mutations in relation to UV light and chemical mutagens. 3+3=6

24J/50

(Turn Over)

UNIT—IV

22. Describe various types of sex chromosomal mechanism of sex determination with illustration. 6
23. What is meant by extra-chromosomal inheritance? Give an account of extra-chromosomal inheritance with suitable example. 1+5=6

UNIT—V

24. Describe the polygenic inheritance with suitable examples. 6
25. Write about Ac-Ds elements in maize and P elements in *Drosophila*. 3+3=6
