M. Sc. DEGREE END SEMESTER EXAMINATION - APRIL 2025
SEMESTER 2 : ZOOLOGY
COURSE : 24P2ZOOT06 : GENETICS AND BIOINFORMATICS
(For Regular - 2024 Admission)

Duration : Three Hours   Max. Weights: 30

PART A
Answer any 8 questions   Weight: 1

1. Explain the contents of PRINTS database.   (U)
2. What is the use of homology search?   (R)
3. What is the use of Clustal W?   (U)
4. Sex determination in Drosophila   (U)
5. What is phenotypic plasticity   (R)
6. What is Telomere?   (U)
7. What is heritability?   (R)
8. Explain any two sequence alignment search tools.   (R)
9. Explain chloroplast genes.   (U)
10. What is Gain of function mutation?   (U)

(1 x 8 = 8)

PART B
Answer any 6 questions   Weights: 2

11. Brief on chromosome banding techniques   (R)
12. Explain the organization and uses of Pfam, CATH and PROSITE.   (U)
13. Brief on Holliday model of recombination   (U)
14. Explain scoring matrices and their use in sequence analysis   (U)
15. Explain the working of BLAST.   (U)
16. Explain Lod score for linkage testing.   (A)
17. Explain gene regulatory networks.   (R)
18. Brief on eukaryotic transposable elements   (U)

(2 x 6 = 12)

PART C
Answer any 2 questions   Weights: 5

19. How is gene silencing achieved in yeast cell?   (U)
20. Elaborate the method of construction of a phylogenetic tree from DNA/ Protein sequence data.   (E)
21. Explain epigenetics in Drosophila   (U)
22. Elaborate on the data types and organization of major biological databases   (E)

(5 x 2 = 10)

OBE: Questions to Course Outcome Mapping

CO	Course Outcome Description	CL	Questions	Total Wt.

Cognitive Level (CL): Cr - CREATE; E - EVALUATE; An - ANALYZE; A - APPLY; U - UNDERSTAND; R - REMEMBER;