

Reg. No

Name

M. Sc DEGREE END SEMESTER EXAMINATION - MARCH 2020
SEMESTER 2 : ZOOLOGY
COURSE : 16P2ZOOT06 : GENETICS AND BIOINFORMATICS
(For Regular - 2019 Admission & Supplementary 2018/2017/2016 Admissions)

Time : Three Hours

Max. Marks: 75

Section A

Answer any 8 (2 marks each)

1. Sex determination in Drosophila
2. Banding techniques
3. Tn3 elements
4. Brief on Holliday model
5. Loss of function mutation
6. Lod score formula
7. What is histone code hypothesis?
8. What is heritability?
9. Which are the common types of biological data that can be found in bioinformatics databases?
10. What does a 'gap' in sequence alignment indicates?
11. Comment on protein structure prediction.
12. What is a metabolite?

(2 x 8 = 16)

Section B

Answer any 7 (5 marks each)

13. Sex limited and sex influenced characters in humans
14. Molecular structure of centromere
15. Brief on eukaryotic transposable elements
16. Chromosome theory of inheritance
17. Explain Lod score for linkage testing
18. Discuss the inheritance of mitochondrial and chloroplast genes
19. What is meant by specialized database? Comment on any two.
20. What are the different methods for sequence alignment? explain
21. What are the uses of DNA Microarrays?
22. What are Metabolites? Differentiate between primary metabolite and secondary metabolites?

(5 x 7 = 35)

Section C

Answer any 2 (12 marks each)

23. Comment on unique and repetitive sequences with a mention on satellites.
24. Write an essay on phenotypic plasticity
25. Give the methodology of deciphering evolutionary relationships from molecular sequence data.
26. Classify bioinformatics databases. Give a short description of major nucleotide and protein databases.

(12 x 2 = 24)