TM242860U

15.4

Reg. No :.....

Name :.....

MASTER'S DEGREE (C.S.S) EXAMINATION, MARCH 2024

2023 ADMISSIONS REGULAR

SEMESTER II - CORE COURSE ZOOLOGY

ZO2C07TM20 - Genetics and Bioinformatics

Time : 3 Hours **Maximum Weight : 30**

Part A

I. Answer any Eight questions. Each question carries 1 weight **(8x1=8)**

1. What is incomplete penetrance and what causes it?
2. Define epistasis. Add a note on types of epistatsis.
3. Write a brief description about Nucleosomes.
4. Write a short note on eukaryotic chromosome.
5. Tabulate the different components required for replication in bacterial cell.
6. What are primases? Discuss the role of primase in prokaryotic and eukaryotic replication.
7. Define Lod Score.
8. Define Epigenetics. State the Histone Code Hypothesis.
9. Define Proteomics. Discuss the importance of proteomics in research.
10. Write a note on DDBJ.

Part B

II. Answer any Six questions. Each question carries 2 weight **(6x2=12)**

11. Discuss complementation mapping.
12. Enlist the general characteristics of transposable elements.
13. Elaborate on molecular structure of telomeres.
14. Enlist the consequences of defects in DNA repair mechanisms. Mention 3 examples with explanations.
15. Write notes on photoreactivation.
16. Define Heritability. What are the various components of Heritability?
17. What is Genomic imprinting?
18. What is Basic Local Alignment Search Tool (BLAST)? Explain its types.

Part C

III. Answer any Two questions. Each question carries 5 weight **(2x5=10)**

19. Discuss elaborately the models explaining the molecular mechanism of crossing over and recombination.
20. Discuss the mechanism of replication in prokaryotic chromosomes with neat illustrations.
21. Write an essay on the nature of replication, the experiment which proved the nature of replication. Add a note on different modes of replication with neat illustrations.
22. Explain the various tools and databases of National Centre for Biotechnology Information (NCBI).