

**M. Sc DEGREE END SEMESTER EXAMINATION - APRIL 2021****SEMESTER 4 : BOTANY****COURSE : 16P4BOTT14 : GENOMICS, PROTEOMICS AND BIOINFORMATICS***(For Regular - 2019 Admission and Supplementary - 2018/2017/2016 Admissions)*

Time : Three Hours

Max. Marks: 75

**PART A****Answer any 8 (2 marks each)**

1. Define Microsatellite
2. What is shot gun sequencing?
3. What are molecular markers?
4. Discuss about the basic steps in genome sequencing.
5. Briefly describe the two classes of repeat elements in eukaryote genome.
6. Write a short note on Chromatin immunoprecipitation (ChIP).
7. Give an account on RNAi.
8. Write a short note on paralogs with examples.
9. What are the advantages of metagenomic studies?
10. Differentiate ETS from ORF.
11. Describe any two versions of BLAST.
12. What is Rasmol?

**(2 x 8 = 16)****PART B****Answer any 7 (5 marks each)**

13. Briefly discuss the techniques used for physical mapping of genome.
14. Differentiate sequence alignment and sequence assembly.
15. Differentiate antisense RNA and RNAi.
16. How is a knock out is differ from knock down mutants?
17. What are the methods used in metagenomics?
18. What is the principle and applications of mass spectrometry?
19. What are the stages involved in the preparation of protein microarray?
20. How is BankIt differs from ENTREZ
21. Write a short note on database similarity search.
22. Write a short notes on tools for genomic comparison.

**(5 x 7 = 35)****PART C****Answer any 2 (12 marks each)**

23. Describe the importance of bioinformatics in structural, functional and comparative genomics.  
OR
24. Discuss about various techniques used for the determination of gene functions.
25. Give the significance of protein structure prediction. Citing suitable examples, explain how Bioinformatics helps in protein visualization.  
OR
26. Write an essay on various methods used in drug designing. Comment on the significance of drug designing over drug discovery.

**(12 x 2 = 24)**