Reg. No ....   Name ....

M. Sc DEGREE END SEMESTER EXAMINATION - MARCH 2020
SEMESTER 4 : BOTANY
COURSE : 16P4BOTT14 : GENOMICS, PROTEOMICS AND BIOINFORMATICS
(For Regular - 2018 Admission & Supplementary 2017/2016 Admissions)

Time : Three Hours   Max. Marks: 75

Section A
Answer any 8 (2 marks each)

1. Differentiate SSLP and SNP.
2. What are microsatellites?
3. Give the advantages of NGS over Sanger sequencing.
4. Discuss about the linkage group and linkage map.
5. Differentiate Contigs and reads.
6. What is gene over expression?
7. Distinguish between structural and functional genomics.
8. Write a short note on paralogs with examples.
9. Define synteny.
10. Describe a tool for multiple sequence alignment.
11. Explain the methods of sequence alignment.
12. Write a short note on ORF search.

(2 x 8 = 16)

Section B
Answer any 7 (5 marks each)

13. Write a note on restriction mapping using STS.
14. Discuss about dominant and co-dominant markers with suitable example.
15. Write a brief note on mRNA profiling.
16. Explain RNA secondary structure prediction.
17. Distinguish between orthologs and paralogs genes with examples.
18. Explain 2D gel electrophoresis.
19. Differentiate between Forward Phase Arrays (FPA) and Reverse Phase Arrays (RPA).
20. Give an account on using CLUSTAL X/W for multiples sequence alignment
21. Write a short note on BLAST and its different versions.
22. Give a comparative account of MEGA and Phylip.

(5 x 7 = 35)

Section C
Answer any 2 (12 marks each)

23. Explain how to retrieve a set of sequence and study the evolutionary trajectory.

OR

24. Discuss the methods used for studying the function of a gene.

25. Write an essay on protein structure and function prediction using bioinformatic tools. Add a note on enzyme and protein design.

OR

26. Write an essay on various CADD methods and explain its practical implications.

(12 x 2 = 24)

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