

**MSc DEGREE END SEMESTER EXAMINATION MARCH 2016**  
**SEMESTER - 4: BOTANY**

COURSE: P4BOTT15EL - GENOMICS, PROTEOMICS AND BIOINFORMATICS

Time: Three Hours

Max. Marks: 75

**PART-A**

- I. Answer **any eight** questions briefly; each question carries 2 marks
1. Distinguish between genetic map and physical map.
  2. What is STS? What is its significance over other molecular markers?
  3. Differentiate local alignment from global alignment.
  4. What is antisense RNA Technology?
  5. What is psi-BLAST? List some of its applications.
  6. Add an account on RFLP
  7. Explain in RNA Profiling?
  8. Briefly explain metagenomics
  9. Write short notes on Motifs.
  10. What are the differences between orthologs and paralogs?
  11. What is Docking?
  12. What is the importance of 2D Gel electrophoresis

(2 x 8 = 16)

**PART-B**

- II. Answer **any Seven** questions; each question carries 5 marks
13. Write an account on molecular markers.
  14. What is Rasmol, How it can be used for protein structure visualisation?
  15. Briefly explain shot gun sequencing.
  16. What is a phylogenetic tree? Explain its features.
  17. Compare and contrast BLAST and FASTA.
  18. Explain ligand based drug design approach.
  19. What are the problems in germ line therapy?
  20. What are the approaches used for predicting RNA structure? Explain.
  21. How is *GrailExp* program used to predict eukaryotic genes?

(5 x 7 = 35)

**PART-C**

- III. Answer **any two** questions; each question carries 12 marks

23. What is multiple sequence alignment? Add a note on tools used for sequence alignment

**OR**

24. What is Phylogenetic analysis? Explain any one tool involved.

25. Describe in detail gene expression analysis using Microarray techniques.

**OR**

26. Write an essay on important findings and ethical implications of human genome project.

(12 x 2 = 24)

\*\*\*\*\*