LOYOLA COLLEGE (AUTONOMOUS), CHENNAI – 600 034

B.Sc. DEGREE EXAMINATION – **PHYSICS**

FOURTH SEMESTER – NOVEMBER 2016

PB 4208 - BIOINFORMATICS-II (GENOMICS & PROTEOMICS)

Date: 11-11-2016   Dept. No.   Max. : 100 Marks
Time: 01:00-04:00

Part –A   (10x2=20 Marks)

Answer the following, each within 50 words.

1. List any two objectives of learning bioinformatics.

2. Define genome.

3. Give the sequence of 2 stop codons.

4. What are signal peptides?

5. Differentiate orthologs and paralogs.

6. What is a database?

7. Write any two applications of DNA sequencing.

8. Define signal transduction.

9. Expand RCSB. Mention its importance.

10. What is the objective of HGP?

Part - B   (5x7=35 Marks)

Answer the following, each within 500 words. Draw diagrams and flowcharts wherever necessary.

11. a) Compare prokaryotic and eukaryotic genome.
                    Or
    b) Write short note on: (i) EnSemble Database   (ii) *E.coli* Database

12. a) Write about : (i) Splice sites (ii) Introns (iii) Start Codon sequence.
                    Or
    b) Give the importance of codon usage bias

13. a) Illustrate any two post translational modifications of protein.
                    Or
    b) Write the significances of signal peptides and signal peptidases.

14. a) Write short note on Intermolecular interaction.
                    Or
    b) Define SCOP. Explain the classifications of it.

15. a) Write about the potential benefits of HGP.
                    Or
    b) Explain evolutionary tree with graphical representation.

Part – C (3x15=45 Marks)

Answer any three of the following, each within 1200 words. Draw diagrams and flowcharts wherever necessary.

16. Describe gene finding in large genomes using different gene finding tools.

17. Describe chain termination DNA sequencing method.

18. Explain the various protein family databases.

19. What is protein-protein interaction? Explain the biochemical methods used to investigate it.

20. Elaborate on the potentials of microarray technology in disease diagnosis.

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