2018/EVEN/09/28/BTY–204/040

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PG Even Semester (CBCS) Exam., May—2018

BIOTECHNOLOGY

(2nd Semester)

Course No. : BTYCC–204

(Bioinformatics)

Full Marks : 70
Pass Marks : 28

Time : 3 hours

The figures in the margin indicate full marks for the questions

1. What is computational biology? Discuss the applications of computational biology in understanding codon usage bias. Write a note on development of tools or algorithms in computational biology. 2+6+6=14

OR

2. What is bioinformatics? Write a note on the principles involved in bioinformatics. Discuss the applications of bioinformatics in biotechnology with suitable examples. 2+4+8=14

3. Describe the primary and secondary databases of nucleotide and protein sequences giving suitable examples. 14

OR

4. Write short notes on any *four* of the following : 3½×4=14

(a) Accession number

(b) Identifier

(c) Data retrieval

(d) GI number

(e) Nucleic acid identifier

(f) Version number

5. Define any two sequence analysis tools giving suitable example. Add a note on different kinds of BLAST available for sequence analysis. 2+12=14

OR

6. What are CpG islands? Add a note on the importance of CpG islands during sequence analysis. Explain any two bioinformatic tools available for the analysis of the same. 2+2+10=14

7. Write a note on full genome comparison and its importance in biological sciences. 14

OR

8. What are the various parameters to be considered for the prediction of gene in a genome or a given sequence? Explain any two bioinformatic tools used for gene prediction. 4+10=14

9. Write in detail about the usefulness of PROSITE and 3DPSSM in protein structure and function prediction. 14

OR

10. Discuss the importance of 3D protein modelling giving example of any bioinformatic tools available for the study. 14

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