E 6220 (Pages : 2) Reg. No. 150021101743

Name. Sreehari C.H

B.Sc. DEGREE (C.B.C.S.S.) EXAMINATION, MARCH 2017

Fourth Semester

Core Course 14 – BIOPHYSICS AND BIOINFORMATICS

(For B.Sc. Biotechnology)

[2013 Admission onwards]

Time : Three Hours Maximum Marks : 80

Part A (Short Answer Questions)

Answer **all** *questions.*

Each question carries 1 *mark.*

1. What is SWISS PROT?
2. What is half life?
3. Explain BLAST.
4. What is dosimetry?
5. What are Motifs?
6. Differentiate enthalpy and entropy.
7. What is the function of Chaperones?
8. What is the principle of IR?
9. What is the biological significance of Osmosis?
10. What are the forces which stabilize the quaternary structure of protein?

(10 × 1 = 10)

Part B (Brief Answer Questions)

Answer any **eight** *of the following.*

Each question carries 2 *marks.*

11. Differentiate primary and secondary databases.
12. What are the application of UV-Visible spectrophotometer?
13. Difference between local and Global alignment.
14. What is the principle behind scintillation counter?
15. What is homology modelling?
16. What is DNA polymorphism?

Turn over

17. What is Ramachandran Plot?
18. What is free energy? Explain.
19. Define first Law of Thermodynamics.
20. Explain different sequence formats.
21. What is carbon dating? How it is done?
22. What are the applications of Absorption spectroscopy?

(8 × 2 = 16)

Part C (Short Essay Questions)

Answer any **six** *of the following.*

Each question carries 4 *marks.*

23. What are domains? Describe its function.
24. Describe tertiary structure of protein with an example.
25. Differentiate between BLAST and Clustal W.
26. What is phylogeny? What are the tools used in phylogenic analysis?
27. What is radioactivity? What are the properties of radiation?
28. Write notes on NCBI and EMBL.
29. What do you mean by structure prediction? How it is done?
30. Differentiate between osmosis and reverse osmosis. What are its applications?
31. Explain how sequence alignment is done with FASTA.

(6 × 4 = 24)

Part D (Essay Questions)

Answer any **two** *of the following.*

Each question carries 15 *marks.*

32. Write an essay on Radio activity.
33. Write an essay on biological databases. What are the significance of databases?
34. Write an essay on protein structure.
35. Differentiate FASTA and BLAST.

(2 × 15 = 30)