

E 1458

(Pages : 2)

Reg. No.....

Name.....

B.Sc. DEGREE (C.B.C.S.S.) EXAMINATION, MARCH 2015

Fourth Semester

Core Course 14 – BIOPHYSICS AND BIOINFORMATICS

(For B.Sc. Biotechnology)

[2013 Admissions]

Time : Three Hours

Maximum : 80 Marks

Part A (Short Answer Questions)

Answer all questions.

1 mark each.

1. What is Ramachandran plot?
2. What are the properties of radiations?
3. What is Beer-Lambert Law?
4. What is surface tension?
5. Expand FASTA.
6. What are the different types of colloids?
7. What is a Drug bank?
8. Write notes on EMBL.
9. What is scintillation counter?
10. What is sequence format?

(10 × 1 = 10)

Part B (Brief Answer Questions)

Answer any eight of the following.

2 marks each.

11. Write notes on nucleotide sequence databases.
12. Describe the role of molecular chaperons in protein folding.
13. Write notes on the Minor groove interactions in DNA.
14. What are the properties of colloids?
15. Describe Tyndall effect.
16. Write notes on Parisomy tree.

Turn over

17. Write notes on Clustal W.
18. What is Osmosis? Brief on its significance.
19. What is thermodynamics? Name the laws.
20. What is the role of ATP in the cell?
21. What are the major branches of Bioinformatics?
22. What is IR spectroscopy?

(8 × 2 = 16)

Part C (Short Essay Questions)

Answer any six of the following.

4 marks each.

23. What is multiple sequence alignment? Explain the tool used for it.
24. Write notes on drug bank.
25. Write briefly on the working of scintillation counter.
26. Describe the characters of Z-form DNA.
27. Brief on first law of Thermodynamics.
28. Describe how 'GOR' is used for structure prediction.
29. Explain secondary structure of protein.
30. How biological databases are classified? What are the most used database for molecular biology?
31. How radiations are used in PET (Positron Emission Tomography)?

(6 × 4 = 24)

Part D (Essay Questions)

Answer any two of the following.

15 marks each.

32. What is homology modelling? Explain the procedure.
33. Write an essay on applications of radiations.
34. Write an essay on stabilizing forces in macromolecules.
35. Write an essay on structure prediction Tools in Bioinformatics.

(2 × 15 = 30)