TDC (CBCS) Even Semester Exam.,
September—2021

BIOTECHNOLOGY

(6th Semester)

Course No. : BTCHCC-602T

(Proteomics and Genomics)

Full Marks : 50
Pass Marks : 20

Time : 3 hours

The figures in the margin indicate full marks for the questions

SECTION—A

Answer any *ten* from the following questions : 2×10=20

1. What is genomics?

2. What do you mean by DNA sequencing?

3. Name two software programmes that help in DNA sequencing.

4. Which type of DNA cleavage is done in the Maxam-Gilbert method?

5. What is the main enzyme component of Sanger sequencing? Name one chain terminator.

6. Name the step prior to getting electrophored DNA in the sequencing gel.

7. What are nucleotide sequencing databases? Give one example.

8. Write the full form of BLAST and NCBI.

9. What is GenBank?

10. What is genome browser used for?

11. What are peptide bonds? How are they formed?

12. What types of protein are keratin and haemoglobin?

13. Name two chemical bonds that stabilize protein structure.

14. Name one aromatic and one aliphatic amino acid.

15. What type of gel is used in gel electrophoresis?

16. Name the technique which separates charged particles using electric field.

17. What does the electrophoresis apparatus consist of?

18. Name the dye used in visualization of DNA. Where does it bind with DNA?

19. What is proteome?

20. What do you mean by *de novo* sequencing of proteins?

SECTION—B

Answer any *five* from the following questions : 6×5=30

21. What is the importance of DNA sequencing? Discuss the methods of Sanger's DNA sequencing.

22. Write in short about different computer tools used in genome sequencing.

23. Write notes on the following :

    (a) ENSEMBL

    (b) DDBJ

24. Briefly describe the process of nucleic acid data management.

25. How does protein structure get stabilized? How does protein folding take place?

26. How does Ramachandran plot help in determination of protein structure?

27. What is SDS-PAGE? Write about the steps involved in the process of SDS-PAGE.

28. What is Edman degradation? Describe how the process helps in determination of covalent structure in protein.

29. What are the three main activities of proteomics? How are samples prepared for proteomics?

30. Write notes on the following :

    (a) Structural proteomics

    (b) Computational approach to understand protein-protein interactions

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