SUBJECT CODE: 19BI/PC/BM14

M.Sc. DEGREE EXAMINATION NOVEMBER 2019
BIOINFORMATICS
FIRST SEMESTER

COURSE   :   CORE
PAPER   :   BIOMOLECULES AND BIOCHEMISTRY
TIME   :   3 HOURS   MAX. MARKS: 100

SECTION A   (20x1=20)

Answer ALL questions.

1. Covalent bonds
2. HMP shunt
3. Universal Solvent
4. Nucleotide and nucleoside
5. Peptide bond
6. Ketone bodies
7. Domains
8. Phosphorylation
9. Amino acids
10. Entropy
11. Disulphide bridges
12. Motifs
13. Oxidation
14. Feedback inhibition
15. Allosteric inhibition
16. Applications of thermodynamic laws
17. Beer-Lambert's law
18. Uses of IR
19. Applications of NMR
20. Expand MALDI-TOF

SECTION B

Answer any FOUR questions   **(4x10=40)**

21. Give the structure of cellulose and glycogen and identify the glycosidic linkages.
22. Outline the scheme of β- oxidation with enzymes involved.
23. Describe the principles involved in 3-D structure determination of protein by X-Ray Diffraction.
24. How would you know whether an inhibitor is a competitive or non-competitive?
25. Briefly describe the Ramachandran Plot and mention its significance.
26. Highlight the working mechanism of UV-Vis spectrophotometer.
27. Elaborate on the principles of NMR.

SECTION C

Answer any TWO questions **(2x20=40)**

28. Discuss about the carbohydrate metabolism-Glycolysis.
29. Elaborate on four levels of protein structure organisation.
30. Derive Michaelis – Menton equation. Mention the significance of V max and Km.
31. Narrate the protein and peptide analysis by mass spectrophotometer.

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