Reg. No. : ☐☐☐☐☐☐☐☐☐☐☐☐

Question Paper Code: U3B02

B.E./B.Tech. DEGREE EXAMINATION, NOV 2024

Third Semester

Biomedical Engineering

21UBM302- BIOCHEMISTRY

(Regulations 2021)

Duration: Three hours   Maximum: 100 Marks

Answer All Questions

PART A - (10x 2 = 20 Marks)

1.	Define Biomolecules.	CO1- U
2.	Draw a diagram of Central dogma of molecular biology.	CO1- U
3.	How do you confirm carbohydrate by Molisch's reagent?	CO2- App
4.	Is Glycolysis pathway maintains hormonal regulation? Justify your answer	CO2- App
5.	Explain various interactions and bond that can apply for protein structure.	CO3- Ana
6.	How do you ensure colorless aminoacid in thin layer chromatography?	CO3- Ana
7.	Draw the overall steps of Lock and Key model.	CO1- U
8.	List out the chemical properties of fats.	CO1- U
9.	Write a short note on nitrogen fixation.	CO1- U
10.	List some techniques for RNA extraction.	CO1- U

PART – B (5 x 16= 80Marks)

11. (a) Write a detailed note on bioorganic chemistry. Analyze   CO3-Ana   (16)
chromatography and Electrophoresis approaches with their principle
and functional mechanism.

Or

(b) Give a short note on Biomolecules. Investigate three main   CO3-Ana   (16)
biomolecules and their role in biological system.

12. (a) Give a short note on carbohydrate. Examine the major pathways of carbohydrate metabolism and its entry mechanism into cell with diagram   CO3-Ana   (16)

Or

(b) Illustrate the pathways of TCA cycle and investigate its metabolic process with neat diagram   CO3-Ana   (16)

13. (a) Define plasma protein and their components. Give a detail notes on amino acid-structure, properties and metabolism.   CO1-U   (16)

Or

(b) Give a brief note on Nucleic acid. Explain in detail about DNA and RNA as a genetic materials with Watson-crick model.   CO1-U   (16)

14. (a) Define enzymes and explain how enzymes are different from protein. How do you use enzymes for clinical purpose with an example?   CO2- App   (16)

Or

(b) Explain the physical and chemical properties of Lipids. How do you confirm fatty acid using saponification method and explain its application?   CO2- App   (16)

15. (a) Define enzyme-linked immunosorbent assay. Explain the mechanism of antigen-antibody interaction to tract the unknown viruses.   CO1- U   (16)

Or

(b) Define nitrogen fixation in the environment. Explain nitrogen cycle in the earth and atmosphere with neat diagram.   CO1- U   (16)

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