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Question Paper Code: U2D05

B.E./B.Tech. DEGREE EXAMINATION, NOV 2023

Second Semester

Biotechnology

21UBT205- Biochemistry

(Regulations 2021)

Duration: Three hours

Maximum: 100 Marks

Answer All Questions

PART A - (5x 1 = 5 Marks)

1. The average pH of urine is CO1- U
(a) 7.0 (b) 7.4 (c) 8.4 (d) 8.0
2. α -D-glucose and β -D-glucose are CO2- App
(a) Stereoisomers (b) Epimers (c) Anomers (d) keto-aldo pairs
3. Which one of the following amino acids may be considered a hydrophobic amino acid at physiological pH of 7.4? CO2- App
(a) Isoleucine (b) Aspartic acid (c) Threonine (d) Arginine
4. Which one of the following protein transports oxygen in blood stream CO1- U
(a) Myoglobin (b) Albumin (c) Insulin (d) Haemoglobin
5. Under anaerobic conditions the glycolysis of one mole of glucose yields _____ moles of ATP CO1- U
(a) One (b) Two (c) Eight (d) Thirty

PART – B (5 x 3= 15 Marks)

6. Define covalent bond. CO1- U
7. What are enantiomers is give examples? CO2- U
8. What bonds are involved in stabilizing the structure of proteins? CO2- App
9. Distinguish apoenzyme and holoenzyme. CO3- Ana
10. What is the coenzyme role of NAD⁺ in metabolic pathways? CO2- App

PART – C (5 x 16= 80Marks)

11. (a) What is a buffer? Write about any two important buffer system that operate in our body. CO1- U (16)
- Or
- (b) Write in detail about the structure and components of the cell. How animal cell is different from plant cell? CO1- U (16)
12. (a) Explain the process of cyclization of monosaccharides. CO2-App (16)
- Or
- (b) Explain the physical properties and functions of lipids. Write a note on saponification reaction of lipids. CO2-App (16)
13. (a) How amino acids are classified? Discuss in elaborate the classification of amino acids based on its polarity. CO3-Ana (16)
- Or
- (b) Give a detailed note on Watson and Crick model of DNA with proper illustration. CO3-Ana (16)
14. (a) Classify the enzymes and distinguish the co-enzymes from cofactor with example. CO3-Ana (16)
- Or
- (b) Write in details about fat soluble vitamins and the disorders due to insufficiency of particular vitamins CO3-Ana (16)
15. (a) Briefly explain about anaerobic glycolysis and mention its significance. CO2- App (16)
- Or
- (b) Explain the mechanism of oxidative phosphorylation and yield of ATP due to biological oxidation of NADH and FADH₂. CO2- App (16)