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**Question Paper Code: U2D05**

B.E./B.Tech. DEGREE EXAMINATION, MAY 2022

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 p H 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)

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| 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 $FADH_2$. | CO2- App | (16) |