(6 pages) **Reg. No. :** .....

Code No.: 5446 **Sub. Code: ZZOM 14**

M.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2023

First Semester

Zoology – Core

BIOCHEMISTRY

(For those who joined in July 2021 onwards)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions

Choose the correct answer :

1. Which among the following is not a property of Ionic bond?
   (a) Losing of electrons
   (b) Gain of electrons
   (c) Sharing of electrons
   (d) Transfer of electrons

2. A solution having a pH of 6 has a proton concentration of _____
   (a) 10^{-6} M (b) 10^{6} M
   (c) 6 M (d) 0.6 M

3. The number of isomers of glucose is
   (a) 2 (b) 4
   (c) 8 (d) 16

4. The carbon atom which becomes asymmetric when the straight chain form of monosaccharide changes into ring form is known as
   (a) Anomeric carbon atom
   (b) Epimeric carbon atom
   (c) Isomeric carbon atom
   (d) None of these

5. Primary structure of a protein is formed by
   (a) Hydrogen bond
   (b) Peptide bond
   (c) Disulphide bond
   (d) All of these

6. The bond in proteins that is not hydrolysed under usual conditions of denaturation.
   (a) Hydrophobic bond
   (b) Hydrogen bond
   (c) Disulphide bond
   (d) Peptide bond

7. Sphingomyelins :
   (a) Phospholipids
   (b) Nitrolipids
   (c) Alcohols
   (d) None of these

8. Fatty acids are oxidized by
   (a) α – oxidation (b) β – oxidation
   (c) ω – oxidation (d) All of these

9. One manifestation of vitamin A deficiency is
   (a) Painful joints
   (b) Night blindness
   (c) Loss of hair
   (d) Thickening of long bones

10. The enzyme aspartate transcarbamoylase of pyrimidine biosynthesis is inhibited by
    (a) ATP (b) ADP
    (c) AMP (d) CTP

PART B — (5 × 5 = 25 marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 250 words.

11. (a) Explain the vander waals forces.

    Or

    (b) Write the properties of buffer.

12. (a) Explain steps involved in gluconeogenesis.

    Or

    (b) Elucidate the structure of disaccharides.

13. (a) Comment on Ramachandran plot.

    Or

    (b) Explain the secondary structure of protein.

14. (a) Elucidate the Beta oxidation of fatty acids.

    Or

    (b) Discuss the metabolic disorder-atherosclerosis.

15. (a) Explain the biochemical functions of vitamin C.

Or

(b) Discuss Lesch-Nyhan syndrome.

PART C — (5 × 8 = 40 marks)

Answer ALL questions, choosing either (a) or (b)
Each answer should not exceed 600 words.

16. (a) Describe the biological importance of buffers.

Or

(b) Describe the electrolytic dissociation.

17. (a) Specify the TCA cycle.

Or

(b) Illustrate the metabolic disorder-Diabetes and their biomedical significance.

18. (a) Classify Proteins with suitable examples.

Or

(b) Specify isoenzymes.

19. (a) Discuss the metabolic disorder-Hyperlipopreoteinemia.

Or

(b) Explain about ketogenesis.

20. (a) Elucidate the structure of Riboflavin and its deficiency.

Or

(b) Discuss the biosynthesis of purines.

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