(6 pages)

Reg. No. : .....

Code No. : 8166 **Sub. Code : VZOE 11**

M.Sc. (CBCS) DEGREE EXAMINATION, NOVEMBER 2024.

First Semester

Zoology

Elective I – BIOCHEMISTRY

(For those who joined in July 2024 onwards)

Time : Three hours Maximum : 75 marks

PART A — (15 × 1 = 15 marks)

Answer ALL questions.

Choose the correct answer:

1. Which of the following buffers to remove the CO_2?
   (a) Carbonate (b) Bicarbonate
   (c) Tris (d) All the above

2. Smallest particle in an atom are called
   (a) Atomic particle (b) Subatomic particle
   (c) Smaller particle (d) Neutral particle

3. When acid is added to pure water which ionic concentration increases?
   (a) OH^+ (b) H^+
   (c) H^- (d) OH^-

4. Which one of the vitamin A functions as a steroid hormone
   (a) Retinol (b) Provitamin A
   (c) Betacarotene (d) Provitamin B

5. The nitrogenous base not found in DNA structure.
   (a) Adenine (b) Guanine
   (c) Cytosine (d) Uracil

6. Proteins are the polymers of
   (a) L-amino acid (b) D-amino acid
   (c) Amino acid (d) Both (a) and (b)

7. Pepsin is an example for the class of enzymes namely
   (a) Oxidoreductases (b) Transferases
   (c) Hydrolases (d) Ligases

8. Energy in a state of randomness is called
   (a) Oxidation (b) Entropy
   (c) Internal energy (d) External energy

9. The enzyme which link substrates are called

(a) Ligases (b) Transferases

(c) Isomerases (d) None of them

10. Proteins are the polymers of

(a) Nucleic acid (b) Phosphpric acids

(c) Both (a) and (b) (d) Aminoacid

11. In proteins α – L amino acids linked to each other by

(a) Peptide bond (b) Hydrogen bond

(c) Covalent bond (d) Disulphide bond

12. The number of nucleotides present in micro RNA

(a) 1 to 5 (b) 10 to 15

(c) 33 to 35 (d) 21 to 23

13. In nucleic acid hydroxyl group is often found at

(a) 3^{l} end (b) $5^{l}3^{l}$ end

(c) 5^{l} end (d) Both (a) and (b)

14. In double stranded nucleic acid the two Strands are associated by

(a) Covalent bond (b) Hydrogen bond

(c) Disulphide bond (d) Peptide bond

15. Micro RNAs are

(a) Single stranded (b) Double stranded

(c) Coding RNA (d) None of them

PART B — ($5 \times 4 = 20$ marks)

Answer ALL questions, choosing either (a) or (b).

Each answer should not exceed 250 words.

16. (a) State the difference between electrovalent and covalent bonds.

Or

(b) Write a note on the stable and Unstable atoms.

17. (a) Briefly explain Vander Walls' bond.

Or

(b) Explain the structure of lipids.

18. (a) Write a short note on isoenzyme.

Or

(b) Describe Coupled reactions.

19. (a) Explain about micro RNA.

Or

(b) Discuss the structural conformation of Proteins.

20. (a) Explain disulphide linkage.

Or

(b) Differentiate hydrogen bond and covalent bonds.

PART C — (5 × 8 = 40 marks)

Answer ALL questions choosing either (a) or (b).

Each answer should not exceed 600 words.

21. (a) Describe the Structure of atom.

Or

(b) Explain the laws of thermodynamic.

22. (a) Elaborate the functions and deficiency symptoms of vitamin B complex.

Or

(b) Explain the biological functions of proteins.

23. (a) Describe Oxidative phosporylation.

Or

(b) Write the mechanism of enzyme regulation.

24. (a) Discuss the Importance of Ramachandran plot in protein formation.

Or

(b) Explain the quaternary structure of proteins.

25. (a) Elaborate the structure of nucleic acid.

Or

(b) Describe the hydrophobic interaction in protein molecules.

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