

GURUDAS COLLEGE

DEPARTMENT OF BIOCHEMISTRY

UG INTERMEDIATE EXAMINATION, 2020

B.SC BIOCHEMISTRY HONS. SEMESTER II

PAPER Core Course 4 Enzymes (Semester 2) BCM-A-CC-2-4-TH

TIME 30 mins

FULL MARKS

10+25

Choose correct answer:

1. Anion exchanger is itself
 - a. Positively charged
 - b. Negatively charged
 - c. Neutral
 - d. None of these
2. At physiological pH Histones are
 - a. basic protein
 - b. acidic protein
 - c. neutral
 - d. none of these
3. Ribozymes are
 - a. enzymes which use ribose as substrate
 - b. enzymes working on
 - c. RNAs with catalytic activities
 - d. enzyme-RNA complexes
4. The enzyme where catalysis involves transfer of electrons are named as
 - a. isomerase
 - b. transferase
 - c. oxidoreductase
 - d. lyase
5. Enormous diversity of proteins is due to
 - a. sequence of amino acids
 - b. R-groups of amino acids
 - c. peptide bonds
 - d. amino groups of amino acids
6. Disulphide bridge forms between two cysteine residues as a result of
 - a. oxidation of sulphhydryl group
 - b. reduction of sulphhydryl group
 - c. amide formation
 - d. none of these
7. Most abundant protein in the human body is
 - a. hemoglobin
 - b. keratin

- c. collagen
 - d. immunoglobulin
8. An amino acid has three ionizable groups with pKa's of 2.0, 10.5 and 3.8. What is the pI of this amino acid?
- a. 6.25
 - b. 9.05
 - c. 5.43
 - d. 2.90
9. Which of the statements regarding enzymes is false?
- a) Enzymes are proteins that function as catalysts.
 - b) Enzymes are specific.
 - c) Enzymes provide activation energy for reactions.
 - d) Enzyme activity can be regulated.
 - e) Enzymes may be used many times for a specific reaction.
10. The active site of an enzyme
- a) remains rigid and does not change shape.
 - b) is found at the center of globular enzymes.
 - c) is complementary to the rest of the molecule.
 - d) contains amino acids without sidechains.
 - e) None of the above choices are correct.
11. Which of the following is true about Michaelis-Menten kinetics?
- a) K_m , the Michaelis constant, is defined as that concentration of substrate at which enzyme is working at maximum velocity
 - b) It describes single substrate enzymes
 - c) K_m , the Michaelis constant is defined as the dissociation constant of the enzyme-substrate complex
 - d) It assumes covalent binding occurs between enzyme and substrate
12. When the velocity of enzyme activity is plotted against substrate concentration, which of the following is obtained?
- a) Hyperbolic curve
 - b) Parabola
 - c) Straight line with positive slope
 - d) Straight line with negative slope
13. Which of the following statements is true about competitive inhibitors?
- a) It is a common type of irreversible inhibition
 - b) In the presence of a competitive inhibitor, the Michaelis-Menten equation becomes $V_0 = V_{max}[S]/\alpha K_m + [S]$
 - c) The apparent K_m decreases in the presence of inhibitor by a factor α
 - d) The maximum velocity for the reaction decreases in the presence of a competitive inhibitor
14. The catalytic efficiency of two distinct enzymes can be compared based on which of the following factor?
- a) K_m
 - b) Product formation
 - c) Size of the enzymes
 - d) pH of optimum value
15. What is the general mechanism of an enzyme?

- a) It acts by reducing the activation energy
- b) It acts by increasing the activation energy
- c) It acts by decreasing the pH
- d) It acts by increasing the pH

16. The allosteric inhibitor of an enzyme _____

- a) Causes the enzyme to work faster
- b) Binds to the active site
- c) Participates in feedback regulation
- d) Denatures the enzyme.

17. The attachment of phosphoryl groups to specific amino acid residues is catalyzed by

- _____
- a) Diphteria toxin and cholera toxin
 - b) Dinitrogenase reductase
 - c) Protein phosphatases
 - d) Protein kinases

18. Enzymes having slightly different molecules structure but performing identical activity are

- a) Apoenzymes
- b) Isoenzymes
- c) Holoenzymes
- d) Coenzymes