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

Code No. : 20657 E **Sub. Code : CACB 21**

B.Sc. (CBCS) DEGREE EXAMINATION, APRIL 2024.

Second/Fourth Semester

Biochemistry – Allied II

PRINCIPLES OF 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. The study of rates of chemical reactions that are catalysed by enzymes in referred to as _____.

   (a) First order reaction kinetics
   (b) Zero order reaction kinetics
   (c) Chemical kinetics
   (d) Enzyme kinetics

2. Lock and key model was proposed by _____ in 1890.

   (a) Henri (b) Michaelis-Menten
   (c) Emil Fischer (d) Daniel Koshland

3. Uncompetitive inhibition has

   (a) Constant km and increased Vmax
   (b) Constant km and decreased Vmax
   (c) Decreased km and decreased Vmax
   (d) Decreased km and increased Vmax

4. Allosteric inhibition is a kind of

   (a) Competitive inhibition
   (b) Uncompetitive inhibition
   (c) Suicidal inhibition
   (d) Non competitive inhibition

5. Which of the following is a tricarboxylic acid?

   (a) Acetic acid
   (b) Succinic acid
   (c) Oxaloacetic acid
   (d) Citric acid

6. Which of the following statements is known as the rate-limiting step in glycolysis?

(a) Enolase

(b) Phosphofructokinase

(c) Phosphohexose isomerase

(d) None of these

7. Ubiquinone transfers its electrons to _____.

(a) Complex I (b) Complex II

(c) Matrix (d) Cyt C

8. ATP synthesis by ATP synthase is driven by the movement of _____.

(a) Protons (b) NADH

(c) Electrons (d) All of the above

9. Amylase is found in _____ at higher concentration.

(a) Pancreatic juice (b) Milk

(c) Tears (d) Urine

10. Which of the following do not have high concentration of aspactate transaminase?

(a) Heart (b) Liver

(c) Saliva juice (d) Kidney

PART B — ($5 \times 5 = 25$ marks)

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

11. (a) Describe holoenzyme, coenzyme and apoenzyme.

Or

(b) Explain enzyme specificity.

12. (a) Explain line-weaver Burk plot.

Or

(b) Describe uncompetitive and competitive inhibition with examples.

13. (a) Write notes on transamination.

Or

(b) Discuss β-oxidation of fatty acids.

14. (a) Enumerate the inhibitors of ETC.

Or

(b) Summarize the uncouplers of oxidative phosphorylation.

15. (a) Write the clinical significance of SGOT and SGPT.

Or

(b) Give the clinical importance of LDH and CPK.

PART C — (5 × 8 = 40 marks)

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

16. (a) Write the classification of enzymes.

Or

(b) Describe mechanism of enzyme action.

17. (a) Derive MM equation.

Or

(b) Discuss the factors affecting enzyme activity.

18. (a) Explain TCA cycle.

Or

(b) Describe HMP shunt. Add notes on its significance.

19. (a) Explain ETC.

Or

(b) Comment on chemiosmotic theory.

20. (a) Give a detailed account on liver function tests.

Or

(b) Write an essay on Renal clearance test.

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