(6 pages)

Reg. No. : .....

Code No. : 10657 E **Sub. Code : CACB 21**

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

Second/Fourth Semester

Biochemistry – Allied

PRINCIPLES OF BIOCHEMISTRY

(For those who joined in July 2021 and 2022 only)

Time : Three hours Maximum : 75 marks

PART A — (10 × 1 = 10 marks)

Answer ALL questions.

Choose the correct answer :

1. _____ involves substrates forming transient covalent bond with the residues present in the active site.
   (a) covalent catalysis
   (b) specific acid-base catalysis
   (c) general acid-base catalysis
   (d) lock and key model

2. Which of the following is produced with the combination of apoenzyme and coenzyme
   (a) Holoenzyme
   (b) Enzyme-substrate complex
   (c) Prosthetic group
   (d) Enzyme – product complex

3. The type of inhibition where in succinate dehydrogenase is inhibited by malonate is an example of _____.
   (a) Uncompetitive
   (b) Non-competitive
   (c) Competitive
   (d) Allosteric

4. All is true about non-competitive inhibition except
   (a) Vmax decreases
   (b) Km increases
   (c) Vmax remains constant
   (d) None of the above

5. How many total molecules of ATP are synthesized from ADP via glycolysis of a single molecule of glucose?

(a) 36 (b) 38

(c) 2 (d) 4

6. An essential for the conversion of glucose to glycogen in Liver is ————————.

(a) UTP (b) GTP

(c) CTP (d) ATP

7. Which of the following terminal cytochromes is responsible for donating electrons to oxygen?

(a) cyt a_3 (b) cyt b

(c) cyt c (d) cyt a_1

8. Which of the following is the complex III of ETs?

(a) NADH dehydrogenase

(b) Cytochrome aa_3

(c) Cytochrome bc_1

(d) ATP synthase

9. Alanine transaminase is present in ————————.

(a) Pancreatic juice (b) Liver

(c) Saliva juice (d) Colostrum

10. Which of the following is not a clinical condition associated with transaminases?

(a) Cardiac arrest

(b) Macromylsemia

(c) Myocardial infarction

(d) Liver disease

PART B — (5 × 5 = 25 marks)

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

11. (a) Explain induced fit model of enzyme action.

Or

(b) Write notes on enzyme specificity.

12. (a) Comment on irreversible inhibition.

Or

(b) Define Km. Write the significance of Km.

13. (a) Illustrate Urea cycle.

Or

(b) Explain glycogenolysis.

14. (a) List out the inhibitors of oxidative phosphorylation.

Or

(b) Enumerate the inhibitors of ETC.

15. (a) Comment on LDH.

Or

(b) Discuss the clinical significance of transaminase.

PART C — (5 × 8 = 40 marks)

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

16. (a) Enumerate general characteristics of enzymes.

Or

(b) Write the classification of enzymes with examples.

17. (a) Explain glycolysis.

Or

(b) Illustrate the synthesis of fatty acid.

18. (a) Discuss the factors affecting enzyme activity.

Or

(b) Derive Michaelis-Menton equation.

19. (a) Explain ETC.

Or

(b) Describe Oxidative phosphorylation.

20. (a) Explain liver function tests.

Or

(b) Comment on renal clearance tests.

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