

B.Sc. DEGREE (C.B.C.S.S.) EXAMINATION, OCTOBER 2018**Third Semester**

Complementary Course—Biochemistry—ENZYMOLGY AND METABOLISM—I

(Common for all Programmes having Biochemistry as Complementary Subject)

[2013 to 2016 Admissions]

Time : Three Hours

Maximum Marks : 60

Part A (Short Answer Questions)*Answer all questions.**Each question carries 1 mark.*

1. What are zymogens ?
2. Where does Calvin cycle take place ?
3. What is the role of insulin in glycogen metabolism ?
4. What is CAM pathway ?
5. What is the effect of temperature on enzyme action ?
6. What is Proton Motive Force ?
7. The synthesis of glucose from lactose, glycerol or amino acids is called _____.
8. Name the end products of alcoholic fermentation of glucose.

(8 × 1 = 8)

Part B (Brief Answer Questions)*Answer any six questions.**Each question carries 2 marks.*

9. Briefly explain the optical specificities of enzyme action.
10. Comment on Line Weaver Burk Plot.
11. What is competitive inhibition ? Give one example.
12. Write the function of pyruvate dehydrogenase.
13. Name the key enzymes in C₄ pathway.
14. What is meant by substrate-level phosphorylation ?
15. State chemiosmotic hypothesis.

Turn over

16. Explain activation energy.
17. Describe the functions of cyclic AMP.
18. What is the action of glycogen synthase ?

(6 × 2 = 12)

Part C (Short Essays)

Answer any four questions.

Each question carries 4 marks.

19. How are enzymes classified ? Give examples.
20. Describe oxidative phosphorylation and ATP synthesis.
21. Describe the effect of pH and temperature on the velocity of enzymes.
22. Give the importance of pentose phosphate pathway.
23. Name the major digestive enzymes of carbohydrates and describe their functions.
24. Differentiate C₃ and C₄ pathways of carbon fixation.

(4 × 4 = 16)

Part D (Long Essays)

Answer any two questions.

Each question carries 12 marks.

25. Explain the steps involved in glycogen metabolism and enzymes involved in it.
26. Write a detailed account of various factors affecting velocity of enzyme-catalysed reaction.
27. Give a detailed account of light and dark reactions of photosynthesis.
28. Describe the reactions of Glycolysis and Krebs's cycle. Write down the number of ATP molecules produced.

(2 × 12 = 24)