

Exam. Code : 107403

Subject Code : 1839

B.Sc. Biotechnology 3rd Semester

BIOCHEMISTRY—III

Paper—BT—3

Time Allowed—3 Hours] [Maximum Marks—40

Note :—(1) Attempt **ALL** parts from Section A. Each question carries **1** mark.

(2) Attempt any **FIVE** questions from Section B. Each question carries **4** marks.

(3) Attempt any **TWO** questions from Section C. Each question carries **6** marks.

SECTION—A

1. Explain :

(i) Enthalpy

(ii) Redox reactions

(iii) Glycogenolysis

(iv) Glycolysis

(v) Anaplerotic reactions (or) Anaplerosis

(vi) Why TCA cycle is the central pathway of metabolism of the cell ?

(vii) Flavoproteins

(viii) Cytochromes.

SECTION—B

2. What is Free Energy ? Explain the free energy concept.
3. Give a brief account on energy rich metabolites.
4. Describe Cori's Cycle along with its significance.
5. Name the irreversible enzymes of glycolysis and key enzymes of gluconeogenesis.
6. Discuss Pyruvate dehydrogenase (PDH) complex and its mechanism.
7. Explain glyoxylate pathway.
8. Discuss about the different inhibitors of electron transport chain.
9. Discuss the process of ATP synthesis and its regulation.

SECTION—C

10. Give a brief account on the basic principles of bioenergetics.
11. Explain the gluconeogenic substrates and describe the reactions of gluconeogenesis.
12. Describe TCA cycle along with its regulation and energetics. Add a note on its amphibolic role.
13. What is Electron Transport Chain (ETC) ? Explain the mechanism of ETC at mitochondrial Matrix.