

FACULTY OF SCIENCE

B.Sc. II – Year Examination, March / April 2016

Subject : BIOCHEMISTRY

Paper – II : Metabolism and Biochemical Techniques

Time : 3 hours

Max. Marks : 100

Part – A (8 X 5 = 40 Marks)

(Short Answer Type)

Note : Answer any Eight from the following.

- 1 Chemiosmotic theory
- 2 Substrate level phosphorylation
- 3 Biological oxidations
- 4 Light reactions of photosynthesis
- 5 Anaplerotic reactions
- 6 Brief outline of the biosynthesis of triacylglycerol
- 7 Decarboxylation and deamination reactions of amino acids
- 8 Gout
- 9 In born errors of branched chain amino acids
- 10 Centrifugation techniques
- 11 Tracer techniques
- 12 Ion exchange chromatography

Part – B (4 X 15 = 60 Marks)

(Essay Answer Type)

Note : Answer all the questions.

- 13 a) Describe the ultrastructure of mitochondria and explain the electron transport mechanism.
OR
b) Write about energy transformations, free energy concept and phosphate group transfer potential.
- 14 a) Explain citric acid cycle. Comment on the fate of pyruvate.
OR
b) Explain the biosynthesis of cholesterol. Write about role of microsomes in fatty acid metabolism.
- 15 a) Discuss the metabolic fate of glycine, serine and methionine.
OR
b) Explain the de novo biosynthesis of purines. Write down the cause for Lesch-Nyhan syndrome.
- 16 a) Give an account of principle and methodology of gel filtration, paper and affinity chromatographic methods.
OR
b) Explain the Beer – Lamber law, principle and methods of colotimetry and spectrophotometry.
