(p) Describe synthesis of Cephalin. 4

(q) Give regulation of cholesterol metabolism. 4

(r) Describe the synthesis of Sphingosine. 4

5. (s) Outline diagramatically urea cycle. 4

(t) Describe transamination with a suitable example. 4

(u) Describe metabolic functions of glycine. 4

OR

(v) Discuss role of methionine as methyl donor. 4

(w) Describe in brief metabolism of tyrosine. 4

(x) Describe decarboxylation of an amino acid. 4

6. Describe in detail De novo synthesis of UMP. Add a note regulation of pyrimidine biosynthesis. 12

OR

Describe in detail degradation of purines. 12

7. Describe in detail biosynthesis of Heme. 12

OR

Give a detailed account of production of bile pigments. 12

AP–457

B.Sc. (Part–II) Semester–III Examination

3S : BIOCHEMISTRY

(Intermediary Metabolism)

Time—Three Hours] [Maximum Marks—80

N.B. :— (1) **ALL** questions are compulsory and carry equal marks except question No. **1** carrying 8 marks.

(2) Draw neat and labelled diagram wherever necessary.

1. (A) Fill in the blanks : ½ each

(i) In citric cycle, oxidation of one molecule of acetyl CoA yields _____ ATP equivalents.

(ii) Glycolytic pathway is located in ____ part of cell.

(iii) Ketone bodies are synthesised in _____.

(iv) _____ the end product of purine catabolism in man.

(B) Choose the correct alternative : ½ each

(a) Pyruvate is converted into acetyl CoA by :

(i) Decarboxylation

(ii) Dehydrogenation

(iii) Oxidative decarboxylation

(iv) Oxidative deamination.

(b) End product of aerobic glycolysis is :

(i) Acetyl CoA

(ii) Lactate

(iii) Pyruvate

(iv) CO_2 and H_2O

(c) β-oxidation of fatty acids requires all the following coenzymes except :

(i) CoA

(ii) FAD

(iii) NAD

(iv) NADP

(d) Free ammonia is liberated during the catabolism of :

(i) Cytosine

(ii) Uracil

(iii) Thymine

(iv) All of the above

(C) Answer in **one** sentence :

(e) What is oxidative deamination ? 1

(f) What is glycogenolysis ? 1

(g) What is De novo synthesis of nucleotides ? 1

(h) What is anaerobic glycolysis ? 1

2. (a) Describe synthesis of glucose from glyceraldehyde-3-phosphate. 4

(b) Outline diagramatically glyoxylate cycle. 4

(c) Describe in short mitochondrial ETC. 4

OR

(d) Describe synthesis of glycogen from glucose in liver. 4

(e) Give energy yield of TCA cycle. 4

(f) What is oxidative phosphorylation ? 4

3. (g) How are active fatty acids transported across the mitochondrial membrane ? 4

(h) Give energetics of palmitic acid oxidation. 4

(i) Draw a well labelled diagram of β–oxidation of fatty acid. 4

OR

(j) Describe in short synthesis of Ketone bodies. 4

(k) Give biosynthesis of triglycerides. 4

(l) Write on fatty acid synthetase complex. 4

4. (m) Describe synthesis of Lecithin. 4

(n) Describe synthesis of Kerasin. 4

(o) Give biosynthesis of Sphingomyelin. 4

OR