AR – 549

Third Semester B. Sc. (Part - II) Examination

3S : BIOCHEMISTRY

(Intermediary Metabolism)

P. Pages : 6

Time : Three Hours] [Max. Marks : 80

Note : (1) All questions are compulsory and carry equal marks except Question no. **1** which carries **8** marks.

(2) Draw well labelled diagram wherever necessary.

1. (A) Fill in the blanks.

(i) End product of aerobic glycolysis is _____ .

(ii) Stearic acid is completely degraded to _____ acetyl units.

(iii) Glycine can be synthesized from _____ .

(iv) Carbamoyl phosphate required for urea synthesis is formed in _____ . 2

(B) Choose correct alternative.

(i) The end product of purine catabolism in man is -

(a) Uric acid

(b) Allantoin

(c) Ammonia

(d) Creatinine

(ii) Glycogen phosphorylase hydrolyses

(a) α-1, 6 – Glycosidic bonds

(b) α-1, 4 – Glycosidic bonds

(c) β-1, 4 – Glycosidic bonds

(d) All of the above

(iii) All the following are tricarboxylic acids except :

(a) Oxaloacetate

(b) Cis-Aconitate

(c) Oxalosuccinate

(d) Citrate

(iv) The end product of anaerobic glycolysis is -

(a) Pyruvate

(b) Lactate

(c) None

(d) Both 2

(C) Answer in one sentence.

(i) What is meant by gluconeogenesis ?

(ii) How many molecules of ATP are produced in one turn of TCA cycle ?

(iii) What is meant by decarboxylation of an amino acid ?

(iv) What do you understand by Ketosis ? 4

2. (a) Give energetic of HMP shunt. 4

(b) Draw well labeled diagram of glyoxylate bypass. 4

(c) Discuss in short ETC. 4

OR

(p) Outline diagrammatically Kreb's cycle. 4

(q) Describe the breakdown of glycogen. 4

(r) Discuss oxidative decarboxylation of pyruvate. 4

3. How does transport of fatty acid takes' place from cytosol into mitochondria ? Describe β-oxidation of palmitic acid.

OR

What are Ketone bodies? Explain in detail Ketogenesis. 12

4. (a) Describe synthesis of Lecithin. 4

(b) Describe synthesis of ceramide. 4

(c) Discuss biosynthesis of cerebroside. 4

OR

(p) Explain in short regulation of cholesterol metabolism. 4

(q) Describe Conversion of squalene to cholesterol. 4

(r) Describe synthesis of cephalin. 4

5. (a) Outline diagramatically Urea Cycle. 4

(b) What is meant by oxidative deamination ? Explain. 4

(c) Discuss the metabolic functions of methionine. 4

OR

(p) What do you understand by transamination? Explain with suitable example. 4

(q) Describe synthesis of serine. 4

(r) Discuss the metabolic functions of glycine. 4

6. (a) Describe de novo pathway of biosynthesis of UMP. 4

(b) Describe conversion of IMP to AMP and GMP. 4

(c) Explain degradation of cytosine in human. 4

OR

(p) What are sources of various atoms in purine and pyrimidine ring structures? 4

(q) Explain salvage pathway for biosynthesis of pyrimidine nucleaotides. 4

(r) Discuss the regulation of purine biosynthesis. 4

7. Describe in detail biosynthesis of hemoglobin.

OR

Explain biosynthesis of biliverdin and bilirubin. 12