

Bachelor of Science (T.Y.B.Sc.) Sixth Semester
B.Sc. 4501 - Biochemistry Paper-I (Metabolism-II)

P. Pages : 2

Time : Three Hours



GUG/W/18/1334

Max. Marks : 50

Notes : 1. All questions are compulsory and carry equal marks.

1. Give a detailed account of HMP shunt. What is significance of HMP shunt. 10

OR

Discuss in detail the biosynthesis of lecithin, cepharin and sphingolipids.

2. Discuss the oxidative and nonoxidative deamination of amino acids. 10

OR

Describe the catabolism of pyrimidine ribonucleotides.

3. a) Give an account of oxidation of odd carbon fatty acids. 2½
b) What are ketone bodies? How are they synthesized. 2½
c) Briefly describe the Krebs's Henseleit bicycle. 2½
d) What is salvage pathway? Explain the salvage pathway of purine bases. 2½

OR

- e) Describe the role of carnitine in fatty acid metabolism. 2½
f) Discuss the structure of fatty acid synthase complex. 2½
g) What are biogenic amines? What is their significance? 2½
h) How ribonucleotides are converted into deoxyribonucleotides? 2½
4. a) What is the difference between β' -oxidation of fatty acids in mitochondria & peroxisomes? 2½
b) What would be the effect of carbohydrate deprivation on the utilisation of fats for energy? 2½
c) What is the role of alanine & glutamine in the transport of ammonia. 2½
d) How pyrimidine biosynthesis is regulated? 2½

OR

- e) Explain why oxidation of saturated fatty acids yield more ATP than unsaturated fatty acids. 2½
- f) How elongation of fatty acids occur in mitochondria? 2½
- g) What are the metabolic disorders of urea cycle. 2½
- h) What is the role of cyclic nucleotides in metabolism? 2½

5. Attempt **any ten** of the following.

- a) What is meant by α -oxidation? 1
- b) Name the auxiliary enzyme required for the oxidation of monounsaturated fatty acids. 1
- c) What is the source of NADPH for lipid biosynthesis? 1
- d) Define the term ketosis. 1
- e) What is acetone breath. 1
- f) What is the role of CO_2 in fatty acid biosynthesis. 1
- g) Write the name of coenzyme of enzyme transaminase. 1
- h) What are glycogenic amino acids? 1
- i) What is the source of methyl group in transmethylation reaction? 1
- j) What is Gout? 1
- k) Give the structure of PRPP. 1
- l) What are the sources of C & N atom of purine ring? 1
