

T.Y.B.Sc. (with Credits)-Regular-Semester 2012 Sem VI  
**B.Sc.4501 - Biochemistry-I : Paper-I (Metabolism-II)**

P. Pages : 2

Time : Three Hours



**GUG/W/16/5618**

Max. Marks : 50

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

1. Give a detailed account of  $\beta$  - oxidation of palmitic acid in mitochondria. Also describe the ATP yield from the oxidation pathway. **10**

**OR**

Discuss in detail the biosynthesis of saturated fatty acids. **10**

2. a) Discuss the mechanism of transamination of amino acids with its significance. **5**  
b) Describe the oxidative and non – oxidative deamination pathway. **5**

**OR**

- c) Give an account of biosynthesis of pyrimidine nucleotides by salvage pathway. **5**  
d) Describe the pathway of catabolism of pyrimidine ribonucleotides. **5**

3. a) Describe the steps of HMP shunt leading to the synthesis of pentose sugar. **2½**  
b) Explain how deficiency of insulin leads to ketosis. **2½**  
c) What is decarboxylation? Give its significance with example. **2½**  
d) Write a note on Gout. **2½**

**OR**

- e) Explain the  $\alpha$  – oxidation pathway of fatty acids. **2½**  
f) Describe the biosynthesis of triacylglyceride in cell cytoplasm. **2½**  
g) Explain how alanine transports ammonia from muscles to liver. **2½**  
h) Describe how ribonucleotides are converted into deoxyribonucleotides. **2½**

4. a) Describe the odd carbon fatty acid oxidation pathway. **2½**  
b) Explain the mitochondrial chain elongation of fatty acids. **2½**  
c) What are the metabolic disorders of urea cycle? **2½**  
d) What are cyclic nucleotides? What is the role of cyclic nucleotides in metabolism? **2½**

**OR**

- e) Give the significance of HMP pathway. 2½
- f) Give an account of biosynthesis of phosphatidyl - ethanolamine and choline. 2½
- g) Explain the deamidation pathway. 2½
- h) Briefly describe the salvage pathway of purine bases using PRPP. 2½

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

- a) Name the auxiliary enzyme required for the oxidation of oleic acid. 1
- b) Name the enzyme which convert stearic acid into oleic acid. 1
- c) Give one difference between the oxidation of fatty acids in mitochondria & peroxisome. 1
- d) Write the name of three ketone bodies. 1
- e) What are antiketogenic substances? 1
- f) Name the alcohol present in sphingolipid. 1
- g) Name the amino acid which is used as a source of methyl group in transmethylation. 1
- h) What are glycogenic amino acids? 1
- i) Give the compartmentation of urea cycle. 1
- j) Draw the structure of purine ring and show the sources of C and N atoms. 1
- k) What is meant by denovo pathway? 1
- l) Name the key regulatory enzyme of pyrimidine biosynthesis. 1

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