

**MASTER OF SCIENCE (DIETETICS AND
FOOD SERVICE MANAGEMENT)**

Term-End Examination

June, 2013

MFN-002 : NUTRITIONAL BIOCHEMISTRY

Time : 2½ hours

Maximum Marks : 75

Note : Answer four questions in all. Question No. 1 is compulsory.

1. Answer the following questions briefly :
- (a) What is glycosidic linkage ? Give an example of glycosidic linkage. 2
 - (b) Define oxidative rancidity. 1
 - (c) What is peptide bond and how it is formed ? 2
 - (d) Differentiate between RNA and DNA. 2
 - (e) What is Enzyme immobilization ? 1
 - (f) Give composition of pancreatic juice. 2
 - (g) Reaction carried by PFK-1 in glycolysis. 2
 - (h) How many ATP are produced when 18 carbon fatty acid is broken down ? 1
 - (i) Give coenzyme form of Riboflavin. 1
 - (j) Name hormones of pancreas. 1

2. Differentiate between the following sets of terms : 5+5+5+5
- (a) Ketogenic and glucogenic aminoacids
 - (b) glycogenolysis and gluconeogenesis
 - (c) competitive and non competitive enzyme inhibition
 - (d) oxidation of saturated and monounsaturated fatty acid
3. Give the defective enzymes in the following disorders :
- (a) (i) Hemolytic anemia 5
 - (ii) Phenyl ketonurea
 - (iii) alkaptonurea
 - (iv) Nieman's pick disease
 - (v) Von Gierk's syndrome
 - (b) How Nucleotide Mono phosphate (NMP) gets converted to Nucleoside diphosphate and how sulphonamide inhibits purine synthesis. 5
 - (c) What is glucolysis ? Briefly discuss its importance. 10
4. (a) Give functions of citric acid cycle, what happens if there is defect in pyrurate dehydrogenase complex. 8

- (b) Name enzymes which are determined during clinical diagnosis of following disease. 3
- (i) Heart attack
- (ii) Liver disorder and pancreas
- (c) How VCDL is metabolised in system ? 7
- (d) Give relationship between substrate concentration and reaction velocity. 2
5. (a) Explain the two processes involved in the degradation of amino acids in our body. 10
- (b) Enumerate the important enzymatic and non-enzymatic antioxidants, providing protection against free radicals, highlighting their location and properties. 10
6. Write short notes on *any four* of the following :
- (a) component of electron transport chain ⁵⁺⁵⁺⁵⁺⁵
- (b) contribution of free radicals towards risk of cardio vascular diseases
- (c) Disorder of aromatic amino acids with defective enzyme
- (d) MMP Pathway
- (e) Urea cycle