No. of Printed Pages : 2

MFN-002

MASTER OF SCIENCE (DIETETICS AND FOOD SERVICE MANAGEMENT)

Term-End Examination

December, 2014

MFN-002 : NUTRITIONAL BIOCHEMISTRY

01781

Time : 2½ hours *Maximum Marks : 75*

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

1. Answer following questions briefly.
   (a) What is chiral carbon atom ? **2**
   (b) What is a glycosidic linkage ? **1**
   (c) What is the difference between n-3 and n-6 fatty acids ? **2**
   (d) Name any four amino acids found in proteins. **2**
   (e) What is nucleotide ? Give the structure. **2½**
   (f) Name the two coenzyme / active form each of riboflavin and niacin. **2**
   (g) List any three enzymes present in pancreas. **1½**
   (h) What is the fate of pyruvate which is the end-product of glycolysis ? **2**

2. (a) Indicate the steps involved in the formation of vitamin D_3. **4**
   (b) Briefly explain the mechanism of enzyme action. **6**
   (c) Discuss the role of bile in digestion. **4**
   (d) How are lipids transported in blood ? **6**

3. (a) What is glycolysis ? Give the three irreversible reactions in the glycolytic pathway. 8

(b) Give the reactions involved in the β - oxidation of fatty acids 12

4. (a) What is the significance of citric acid cycle ? Give the net energy output of citric acid cycle illustrating the reactions involved. 12

(b) What is urea cycle ? Enlist the steps involved along with the enzymes involved. 8

5. Differentiate between the following giving examples. 5+5+5+5

(a) Ketogenic amino acids and glucogenic amino acids.

(b) Transamination reaction and Deamination reaction.

(c) Group I Hormones and Group II Hormones.

(d) Synthesis and degradation of pyrimidine nucleotide and synthesis and degradation of purine nucleotide.

6. Write short notes on any **four** of the following : 5+5+5+5

(a) Components of electron transport chain

(b) Metabolism of Low Density Lipoproteins (LDL)

(c) Role of free radical in lipid peroxidation

(d) Mechanism involved in vision-visual cycle

(e) Metabolic pathway in Maple Syrup Urine Disease (MSUD)
