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MFN-002

00429

MASTER OF SCIENCE (DIETETICS AND FOOD SERVICE MANAGEMENT)

Term-End Examination

December, 2012

MFN-002 : NUTRITIONAL BIOCHEMISTRY

Time : 2½ hours *Maximum Marks : 75*

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

1. Answer following questions briefly :

(a) Give a test to distinguish between reducing and non reducing sugar. **1**

(b) What are essential fatty acids ? Give examples. **1½**

(c) What is zwitter ion ? **1**

(d) How nucleoside is different from nucleotide ? **1**

(e) Which is the active form of niacin ? **1**

(f) Differentiate between catabolic and anabolic reactions. **2**

(g) List enzymes present in intestinal juices. **1½**

(h) Give reactions of glycolysis carried out by enzyme hexokinase. **1**

(i) What is the role of carnitine in fatty acid oxidation ? 1½

(j) Give metabolic fate of amino acid after removal of α-amino groups. 1½

(k) Define second messengers with examples. 2

2. Answer following questions briefly :

(a) What is oxidative phosphorylation and what is its use ? 5

(b) Give major substrates of gluconeogenesis and how they are converted to glucose ? 8

(c) How digestion takes place in stomach ? Explain highlighting the enzymes involved. 7

3. Differentiate between the following sets of terms : 5+5+5+5

(a) Homocystinuria and Arginemia

(b) Ketogenic and Glucogenic amino acid

(c) Fatty acid oxidation and Fatty acid biosynthesis

(d) Low density Lipoprotein and High density Lipoprotein

4. (a) What is the end product of purine degradation and what disease is caused due to its accumulation ? 5

(b) How is ammonia removed from body and what is that process called ? Explain. 8

(c) Give Functions of Iodine in our body. 5

(d) Name two enzymes required for clinical diagnosis of liver diseases. 2

5. Give reactions of glycolysis which :

(a) Generates ATP 5

(b) What are transamination reactions ? Give any one example. 5

(c) Give methods of regulation of glycogen synthesis. 5

(d) Give the fate of LDL cholesterol in our body. 5

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

(a) Enzyme inhibition and its significance

(b) Free radicals and their generation

(c) Anaplerotic reactions

(d) Metabolic significance of HMP

(e) Enzymes involved in the process of activation of fatty acids in the context of fatty acid oxidation.