No. of Printed Pages : 3

MFN-002

00273

MASTER OF SCIENCE (DIETETICS AND FOOD SERVICE MANAGEMENT)

Term-End Examination

December, 2010

MFN-002 : NUTRITIONAL BIOCHEMISTRY

Time : 2½ hours *Maximum Marks : 75*

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

1. (a) Define the following : **3 (3x1)**

(i) Mutarotation

(ii) Saponification

(iii) Isozymes

(b) List 2 basic and 2 acidic amino acids. **1**

(c) What is the active form of Niacin, write down its two important properties ? **2**

(d) Give active form of vit.D with its physiological role. **3**

(e) List the product in which Pyruvate can be converted. **2**

(f) Give reaction given by enzyme glutamate dehydrogenase. **2**

(g) Name any two enzymatic antioxidants. **1**

(h) Name deficient enzyme in McArdle's and Von Gierk's Syndrome. **1**

2. Explain the following briefly :

(a) Energy production in glycolysis 8

(b) Anaplerotic reactions 6

(c) Regulation of pyruvate dehydrogenase (PDH) 6

3. (a) Differentiate between the following :

(i) Palmitic acid synthesis and Palmitic acid breakdown. 4

(ii) Ketogenic and glucogenic amino acid. 2

(iii) Phenylketonuria and alkaptonuria. 2

(iv) Galactosemia and Fructosuria. 2

(b) Give following conversions/ Reactions with enzyme involved.

(i) Pyruvate $\rightarrow$ Oxaloacetic acid 4

(ii) Glucose $\rightarrow$ Glycogen 4

(iii) Reaction of urea cycle occurring only in mitochondria. 2

4. (a) Discuss how fatty acids are transported from cytosol to mitochondrial matrix. 5

(b) Why is LDL harmful to our system ? 5

(c) How nucleotide is different nucleoside and give important feature of double helix DNA ? 5

(d) Give physiological role of iron in our body. 5

5. (a) Give metabolic significance of Hexose monophosphate pathway. 5

(b) Give Lineweaver Burk equation and explain graphically showing curve in absence and presence of competitive inhibitor. 8

(c) Give brief outline for digestion of carbohydrates. 5

(d) Define salting out. 2

6. (a) How inhibitors of electron transport chain effects generation of ATP ? 8

(b) Give only the steps for the formation of uric acid in purine degradation and what happens if level of uric acid increases in blood ? 8

(c) How deoxyribonucleotide is synthesised from ribonucleotide ? 2

(d) Give two non protein functions of amino acids. 2

7. Write short notes on ***any four*** of the following : **4x5=20**

(a) Vit E as chain breaker

(b) Reactions catalysed by Ascorbic acid

(c) Role of TSH

(d) Steps involved in synthesis of cholesterol citric acid cycle.