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MFN-002

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MASTER OF SCIENCE (DIETETICS AND FOOD SERVICE MANAGEMENT)

Term-End Examination

June, 2011

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) Define isomers and give one example of aldose - ketose isomer. **1½**

(b) What are phospholipids ? Give its classification. **2**

(c) Give major difference between secondary and tertiary structure of protein. **2**

(d) Give any two physiological properties of biotin. **1**

(e) Differentiate between apoenzyme and holoenzyme. **1½**

(f) Name degradation product of cholesterol. **1**

(g) What are the symptoms of deficiency of Pyruvate dehydrogenase ? **1½**

(h) Define transamination. **1**

(i) Name the disease caused by accumulation of end product of purine. 1

(j) List some of hormones included in group -I. 1

(k) What disease is caused by high levels of chylomicron in blood ? 1½

2. Differentiate between the following : 4+4+4+4+4=20

(a) Competitive and non competitive enzyme inhibitor.

(b) CPS - I and CPS - II

(c) Sickle cell anaemia and Thalasemia

(d) Glycolysis and Gluconeogenesis

(e) Water soluble and Fat soluble vitamins

3. (a) Match the following : 5

A	B
(i) Alkaptonurea	(A) Sphingomylinease
(ii) PKU	(B) α keto acid decarboxylase
(iii) MSUD	(C) Homogentisate oxidase
(iv) Galotosemia	(D) Galactose - 1 - phosphate undyl transferase
(v) Nieman's Pick disease	(E) Phenalanine hydroxylase

(b) How blood glucose level is regulated ? Explain briefly. 5

(c) How glycogen breakdown is controlled ? Discuss. 5

(d) Discuss about alanine cycle and its role in our body. 5

4. (a) Write down the following reactions with enzyme involved

(i)	Glucose 6 phosphate	→ Ribulose - 5 phosphate	3
(ii)	Arginosuccinate	→ Urea	2
(iii)	Acetyl COA	→ Butyryl - S - ACP	6
(iv)	Adenine	→ AMP	2
(v)	Palmitic acid	→ Palmitoleic acid	2

(b) What are the active form of vit A, give its role in visual cycle. 5

5. (a) Give diagnostic importance of enzymes. 5

(b) How degradation of dietary nucleic acid is carried out ? Explain briefly. 5

(c) Calculate the total amount of ATP generated in β oxidation of palmitic acid. 5

(d) Give steps of TCA cycle which are involved in generation of ATP. 5

6. (a) Give the mechanism for disposal of free radicals. 8

(b) What is the role of calcium in our body ? 6

(c) Give structure of nucleotide and give difference between DNA and RNA. 6

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

(a) Electron transport chain

(b) C - AMP as second messenger

(c) Metabolism of chylomicron

(d) Hormone cascade system for cortisol

(e) Inborn error of metabolisms.
