No. of Printed Pages : 2

MFN-002

MASTER OF SCIENCE (DIETETICS AND FOOD SERVICE MANAGEMENT)

00189

Term-End Examination

December, 2016

MFN-002 : NUTRITIONAL BIOCHEMISTRY

Time : 2½ hours *Maximum Marks : 75*

*Note : Attempt **any five** questions. Question No. **1** is **compulsory**. **All** questions carry **equal** marks.*

---

1. (a) Define sugars. What do you understand by term isomer ? Give an example of aldose-ketose isomer. 5

(b) What are essential fatty acids, explain giving suitable examples. 5

(c) Identify Polar, non-polar, acidic and basic amino acids from the given list : Glycine, Proline, Threonine, Aspartic acid and Lysine. 5

2. (a) Classify proteins into three broad groups with at least one example from each group. 5

(b) Explain the process of carbohydrate digestion in our body. 5

(c) Why minerals are essential for us ? Give the biochemical role of zinc in our body. 5

3. (a) What is enzyme inhibition ? Differentiate between competitive and non-competitive enzyme inhibition. 5

(b) List properties of Vitamin D. Indicate the steps involved in the formation of Vitamin D_3. 5

(c) Give the classification of coenzymes. Give names of Hydrogen transferring coenzymes. Which coenzyme is derived from Vitamin B_2 ? 5

4. (a) Enumerate the functions of Gluconeogenesis. 3
(b) Give brief account of glycogen storage diseases. 5
(c) Give three irreversible steps of glycolysis with enzymes involved. 7

5. (a) What are ketogenic and glucogenic amino acids ? Explain giving suitable examples. 5
(b) Write short note on purine degradation. What is the disease caused by accumulation of its end product. 5
(c) Give list of non-essential amino acids. How are they synthesised ? Explain any one with chemical reactions. 5

6. (a) Briefly discuss how free radicals contribute to risk of cardiovascular disease. 5
(b) What are the hormones of pituitary gland ? Give the role of any two hormones. 5
(c) List any three Inborn Errors of metabolism of aromatic amino acid. Describe the metabolic disorder indicating the defective enzyme involved. 5

7. (a) List 3 steps involved in oxidation of fatty acid. 5
(b) Differentiate between Lipoproteins and apolipoproteins with suitable examples. 5
(c) Define ketosis and how it is different from ketoacidosis ? 5