No. of Printed Pages : 2

MFN-002

MASTER OF SCIENCE (DIETETICS AND FOOD SERVICE MANAGEMENT)

01423

Term-End Examination

December, 2015

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) What are Polysaccharides ? Explain the different types of polysaccharides giving examples. **5**

(b) What are neutral fats ? Give examples and their functions. **5**

(c) Give general structure of amino acid with one example each of polar, non-polar, acidic and basic amino acids. **5**

2. (a) What do you understand by enzyme specificity ? List its different types. **5**

(b) Give any four important Physico-Chemical properties of Vitamin C. **5**

(c) What are coenzymes ? Give classification of hydrogen transferring coenzymes. Which coenzymes is derived from Vitamin Niacin ? **2+2+1**

3. (a) Enumerate the four structural levels of protein with suitable examples. 5

(b) Explain the process of protein digestion. 5

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

4. (a) List the function of citric acid cycle. 2

(b) Discuss about energy production in glycolysis giving chemical reactions. 8

(c) Differentiate between glycolysis and glycogenolysis. 5

5. (a) Discuss the role of carnitine in transfer of fatty acid. 5

(b) Define Lipoprotein and apolipoprotein with suitable examples. 5

(c) What is hyperlipoproteinemia and how it is classified ? 5

6. (a) Give the reactions involved in Urea Cycle, indicating the enzymes and coenzymes. 5

(b) Explain the salvage pathway for purine synthesis. 5

(c) Give different ways by which non essential amino acid is synthesised. Give the reactions invovled. 5

7. (a) What are free radicals ? Give their role in Lipid Peroxidation. 5

(b) Explain the effect of Insulin on Carbohydrate metabolism. 5

(c) Why Tyrosine becomes an essential amino acid for PKU patients ? Explain briefly. 5