

**MASTER OF SCIENCE (DIETETICS AND  
FOOD SERVICE MANAGEMENT)**

**Term-End Examination**

**June, 2017**

00255

**MFN-002 : NUTRITIONAL BIOCHEMISTRY**

*Time : 2½ hours*

*Maximum Marks : 75*

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

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|----|-----|--|---|
| 1. | (a) | What is epimer ? Explain with example.   | 2 |
|    | (b) | Define nucleotide  | 1 |
|    | (c) | Give an example of basic amino acid  | 1 |
|    | (d) | Define Saponification  | 1 |
|    | (e) | Give two active form of niacin   | 1 |
|    | (f) | What are coenzymes ?   | 1 |
|    | (g) | What is emulsification action of bile ?  | 1 |
|    | (h) | List major substrates for gluconeogenesis  | 2 |
|    | (i) | What are Triacylglycerol   | 1 |
|    | (j) | Differentiate between glycogenic and Ketogenic amino acid.                                   | 1 |
|    | (k) | Name the molecule which helps in transfer of fatty acid from cytosol to mitochondrial matrix | 1 |

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|----|-----|---|----|
|    | (l) | List any one group - II hormone   | 1  |
|    | (m) | Name the mineral associated with antioxidant defence system   | 1  |
| 2. | (a) | What is the effect of pH, temperature on enzyme activity ? Show graphically.  | 6  |
|    | (b) | How many ATPs are produced when C <sub>18</sub> Fatty acid undergoes β-oxidation ? Give the reactions.                            | 8  |
|    | (c) | What is VLDL ? Give its composition.  | 6  |
| 3. | (a) | Give energy utilizing reactions of glycolytic pathway with enzymes involved.  | 6  |
|    | (b) | What is oxidative phosphorylation ? How many ATPs are produced from FADH <sub>2</sub> and NADH ?                                  | 8  |
|    | (c) | Explain anaplerotic reactions.  | 6  |
| 4. | (a) | Illustrate the reactions involved in the removal of ammonia from our body. What is that process called ?                          | 8  |
|    | (b) | How Purines are synthesised by salvage pathway ?  | 6  |
|    | (c) | Give Role of free radicals in Lipid peroxidation.   | 6  |
| 5. | (a) | What are microminerals or trace elements ? How are they different from macro minerals ? Enumerate the physiological role of Iron. | 10 |
|    | (b) | "Phenyl ketone Urea (PKU) is a neurometabolic disorders" Comment on the statement.  | 5  |
|    | (c) | List the different second messenger used in mechanism of hormone action.  | 5  |

6. Write short notes on **any four** of the following :

- (a) Visual Cycle 5+5+5+5
  - (b) Cholesterol biosynthesis
  - (c) Citric acid cycle
  - (d) Fate of pyruvate
  - (e) Constituents of common polysaccharides.
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