

No. of Printed Pages : 4

MFN-002

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

M. SC. (DFSM)

Term-End Examination

June, 2024

MFN-002 : NUTRITIONAL BIOCHEMISTRY

Time : 2½ Hours

Maximum Marks : 75

Note : (i) Answer **five** questions in all.

(ii) All questions carry equal marks.

(iii) Question No. 1 is compulsory.

1. (a) Give one example for each of the following :

10

(i) Isomerism of Monosaccharides

(ii) Anomers of D-glucose

(iii) Product formed by reduction of
glucose

P. T. O.

- (iv) Form of starch
 - (v) Compound lipid
 - (vi) Naturally occurring unsaturated fatty acids
 - (vii) Chemical properties of neutral fats
 - (viii) Compounds present in the structure of amino acid
 - (ix) Nitrogenous bases of nucleotide
 - (x) Co-enzyme derivative of Riboflavin
- (b) Differentiate between the following :

$$2\frac{1}{2} + 2\frac{1}{2}$$

- (i) n-3 and n-6 fatty acid
 - (ii) L-glyceraldehyde and D-glyceride
2. (a) Give the active form of the following and their biochemical functions in our body :

$$4+4$$

- (i) Niacin
 - (ii) Vitamin D
- (b) What is enzyme inhibition ? Give its significance.

$$5+2$$

3. Explain the following briefly :
- (a) Role of bile in digestion 4
 - (b) Absorption and transport of lipids in the body 6
 - (c) Digestion mechanism in the stomach 5
4. (a) Give the reactions involved in glycolysis leading to the generation of ATP. 10
- (b) Enumerate the components of the electron transport chain. 5
5. (a) Which is the site for the synthesis of fatty acid ? Explain giving the reactions involved in the synthesis of fatty acids. 2+8
- (b) Explain the metabolism and function of High Density Lipoproteins (HDL) in our body. 5
6. (a) What is urea cycle ? Indicate the various enzymes, co-enzymes involved in this cycle. 10
- (b) What are transamination reactions ? Explain briefly. 5

7. Write short notes on any *three* of the following :

5+5+5

- (i) Pyrimidine synthesis
- (ii) Enzymatic and non-enzymatic anti-oxidant defense system
- (iii) Biochemical function of folic acid in our body
- (iv) Group II hormones
- (v) Phenylketonuria—cause and dietary management