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MFN-002

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

M.SC. (DFSM)

Term-End Examination

June, 2023

**MFN-002 : NUTRITIONAL
BIOCHEMISTRY**

Time : 2½ Hours

Maximum Marks : 75

Note : (i) *Question no. 1 is compulsory.*

(ii) *Only 5 questions are to be attempted in total.*

(iii) *All questions carry equal marks.*

1. (a) Give example of sugars showing epimerism. 1
- (b) Give example of amino acid with non-polar side chain. 1
- (c) What is nucleotide ? 1
- (d) Name the vitamin which contains metal in its structure. 1

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- (e) Define Holoenzyme. 1
- (f) Name one enzyme which is released in liver diseases. 1
- (g) Define glucogenic amino acid. 1
- (h) What do you understand by anaplerotic reaction ? 2
- (i) Define antioxidant with an example. 2
- (j) Which enzyme is defective in Tay-Sacch's disease ? 1
- (k) What are essential fatty acids ? Explain with examples. 2
- (l) Which minerals are essential for body ? 1
2. Differentiate between the following : $5 \times 3 = 15$
- (a) Glycolysis and gluconeogenesis
- (b) Macro and micro minerals
- (c) Fatty acid breakdown and fatty acid synthesis
3. (a) What are Vitamins ? Give its classification and role. 5
- (b) Give brief account of alanine cycle. 3
- (c) Mention about ATP utilizing steps of Glycolysis. 3

- (d) How is cholesterol broken down in the body ? 4
4. Write short notes on the following :
- (a) Origin of atoms present in purine ring 3
- (b) Difference between breakdown of purine and pyrimidine. 3
- (c) Role of Vitamin K as an anticoagulant. 5
- (b) Hormonal control of blood sugar in the body. 4
5. (a) What do you understand by haemoglobinopathies ? Explain with suitable examples. 6
- (b) Briefly describe the second messengers and their mechanism. 9
6. (a) Explain the role of different lipoproteins in transfer of lipids. 6
- (b) Give the steps involved in the breakdown of C₁₆ palmitic acid. 6
- (c) What is the role of transketolase and transaldolase ? 3