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MFN-002

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

[M. SC. (DFSM)]

Term-End Examination

June, 2026

MFN-002 : NUTRITIONAL BIOCHEMISTRY

Time : 2½ Hours

Maximum Marks : 75

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

(ii) *Attempt any **five** questions in all.*

(iii) *All questions carry equal marks.*

1. (a) Graphically represent the following :

- | | |
|-----------------------------|---|
| (i) Stereoisomerism | 2 |
| (ii) Glycosidic linkage | 2 |
| (iii) Triglyceride | 2 |
| (iv) Peptide bond formation | 2 |

- (b) Differentiate between DNA and RNA. 3
- (c) Name the biological active form of : 2
 - (i) Pyridoxine
 - (ii) Folic acid
- (d) Give the steps involved in the formation of Vitamin D in the skin. 2
- 2. (a) Give the structure and significance of *n*-3 and *n*-6 fatty acids in our diet. 6
- (b) Explain briefly the enzymes involved in the digestion of proteins in our body and their action. 9
- 3. (a) What are Enzymes ? Explain the mechanism of enzyme action in our body. 1+5
- (b) Explain briefly how lipids are transported in blood in our body. 5

- (c) Briefly explain calcium homeostasis. 4
4. (a) Discuss the components of electron transport chain. 5
- (b) What is Gluconeogenesis ? What are its substrates ? 5
- (c) Give the role of citric acid cycle. 5
5. (a) Differentiate between low density lipoproteins and high density lipoproteins. 5
- (b) Explain the steps involved in the synthesis of fatty acids in our body. 10
6. Explain the following, highlighting the defective enzyme : 5+5+5
- (i) Tyrosinemia
- (ii) Glycogen storage disease
- (iii) PKU

7. Write short notes on any *three* of the following : 5+5+5

- (a) Antioxidant defense system
- (b) Transamination reactions
- (c) De-Nova synthesis of purines
- (d) Hemoglobinopathies
- (e) Classification of hormones based on their mechanism of action.

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