

**M. Sc. (DIETETICS AND FOOD  
SERVICE MANAGEMENT)**

**[M. Sc. (DFSM)]**

**Term-End Examination**

**December, 2024**

**MFN–002 : NUTRITIONAL BIOCHEMISTRY**

*Time :  $2\frac{1}{2}$  Hours*

*Maximum Marks : 75*

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

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

(iii) *All questions carry equal marks.*

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1. (a) Give an example of reducing sugar. 1
- (b) What are essential fatty acids ? Explain  
with example. 2
- (c) Give examples of *two* basic amino acids. 2
- (d) What is active form of Vit. B<sub>5</sub> ? 1
- (e) Differentiate between Apoenzyme and  
Holoenzyme. 3

- (f) Define microminerals and give examples. 2
- (g) What are Group I Hormones ? Explain with examples. 3
- (h) Give the defective enzyme in alkaptonurea. 1
2. (a) Describe the complete digestive process occurring in stomach. 5
- (b) Give the process of complete digestion of fats in the body with enzymes involved. 5
- (c) Our food contain wide range of free radical scavenging molecules. Give the names and explain their role. 5
3. (a) What is the role of TCA cycle ? Give the reaction where high energy GTP is generated in the cycle. 5
- (b) Write a short note on glycogen storage diseases. 5
- (c) Give reaction and enzymes involved in 3 irreversible reactions of glycolysis. 5
4. (a) Give steps involved in breakdown of palmitic acid by  $\beta$ -oxidation. 5
- (b) Give origin and fate of LDL cholesterol. 5

- (c) Explain the effect of insulin on carbohydrate metabolism. 5
5. (a) Give a brief account of urea cycle with enzymes and coenzymes involved in it. 5
- (b) Give origin of atoms in purine rings. 3
- (c) How does sulphonamide inhibit purine synthesis ? 3
- (d) Differentiate between competitive and non-competitive enzyme inhibition. 4
6. (a) How do fat soluble vitamins differ from water soluble vitamins ? 2
- (b) List different second messengers required for hormone action. 5
- (c) Give characteristic symptom and defective enzyme in Gauchers' disease. 3
- (d) Write a short note on Sickle Cell Anaemia. 5

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