

No. of Printed Pages : 5

MFN-02

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

[M. SC. (DFSM)]

Term-End Examination

June, 2025

MFN-02 : NUTRITIONAL BIOCHEMISTRY

Time : 2½ Hours

Maximum Marks : 75

Note : Question No. 1 is compulsory. Only five questions are to be attempted in total. All questions carry equal marks.

1. (a) Give an example of non-reducing sugar. 1

- (b) What are essential fatty acids ? Explain with examples. 2
- (c) Give an example of sulfur containing amino acid. 1
- (d) What is the active form of vitamin niacin ? 1
- (e) Briefly define Isoenzymes and give examples. 3
- (f) Define antioxidants and give *two* examples. 3
- (g) What are macrominerals ? 2
- (h) Give defective enzymes in metabolic disorder Phenyl Ketone Urea (PKU). 1
- (i) Give *two* examples of group-2 hormones. 1

2. (a) List various organs involved in digestion and their role. 5
- (b) How are proteins digested in digestive system ? 5
- (c) What are free radicals ? Briefly explain with appropriate examples. 5
3. (a) What function is played by citric acid cycle ? Give the reaction for the formation of citrate in TCA cycle. 5
- (b) Differentiate between Glycogenesis and Glycogenolysis. 5
- (c) Describe the oxidative branch of pentose-phosphate pathway. 5
4. (a) Write a short note on Lipoprotein. 5

- (b) Differentiate between fatty acid synthesis and fatty acid degradation. 5
- (c) Give the role of parathormone in Ca^{2+} homeostasis. 5
5. (a) Give the importance of urea cycle. 3
- (b) What is the end product of purine degradation ? Which disease is caused due to accumulation of its end product ? 3
- (c) Give the origin of atoms in the pyrimidine ring. 3
- (d) Draw Lineweaver-Burk plot enzyme showing competitive enzyme inhibition. Label the plot properly. 6

6. (a) What are second messengers ? Which class of hormone require them ? Explain briefly. 5
- (b) Give examples of water soluble vitamins, with their source and deficiency disorders. 7
- (c) Write a short note on Thalassemia. 3

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