

No. of Printed Pages : 4

**MFN-002**

**MASTER OF SCIENCE (FOOD AND  
NUTRITION) M. Sc. (DFSM)**

**Term-End Examination**

**December, 2022**

**MFN-002 : NUTRITIONAL BIOCHEMISTRY**

*Time : 2½ Hours*

*Maximum Marks : 75*

---

*Note : Question No. 1 is compulsory. Attempt five questions in all. All questions carry equal marks.*

---

1. Answer the following questions briefly :

1×15=15

- (a) Give an example of aldose-ketose sugar isomers.
- (b) Give example of *two* amino acids with polar side chain.
- (c) What is Nucleoside ?
- (d) What is the active form of vitamin—Niacin ?

**P. T. O.**

- (e) Give *one* example each of enzymes belonging to class oxidoreductase and hydrolase.
  - (f) Define isoenzymes and give example.
  - (g) List enzymes of intestinal juice.
  - (h) What do you understand by the term anaplerotic reaction ?
  - (i) What are phospholipids ?
  - (j) Give example of ketogenic amino acid.
  - (k) Give example of group I hormone.
  - (l) Name the defective enzyme in Von Gierke's syndrome.
  - (m) Which enzyme is responsible for conversion of pyruvate to acetyl co-A ?
  - (n) Which vitamin acts as an antioxidant ?
  - (o) Give example of PUFA.
2. Differentiate between any *three* of the following : 3×5=15
- (a) Competitive and non-competitive inhibitors

- (b) Carbonyl phosphate synthase I and Carbonyl phosphate synthase II
  - (c) Glycogen breakdown and glycogen synthesis
  - (d) Fat soluble and water soluble vitamin
  - (e) Structural difference between RNA and DNA
3. Write short notes on any *three* of the following : 3×5=15
- (a) Urea cycle
  - (b) Salvage pathway for purine biosynthesis
  - (c)  $\beta$  oxidation
  - (d) Oxidative branch of pentose-phosphate pathway ?
4. (a) What is the role of pancreas in digestion ? 3
- (b) What is glycogen storage diseases ? 5
- (c) What is electron transport chain ? List its components. 5
- (d) What is Cori-cycle ? 2

5. (a) What are antioxidants ? Give their classification and role in brief. 5
- (b) Give the role of insulin in carbohydrate metabolism. 5
- (c) Elaborate on the role of vitamin A in visual cycle. 5
6. (a) What is sickle cell anaemia ? Explain its biochemistry. 5
- (b) How does breakdown of polyunsaturated acid differ from saturated fatty acid ? 5
- (c) How are lipids transported in blood ? 5