

**MASTER OF SCIENCE (DIETETICS AND  
FOOD SERVICE MANAGEMENT) (M.Sc. DFSM)**

**Term-End Examination**

**June, 2022**

**MFN-008 : PRINCIPLES OF FOOD SCIENCE**

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

*Maximum Marks : 75*

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**Note :** 1. Answer **four** questions in all.

2. Question no. 1 is **compulsory**.

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1. (a) Differentiate between food science and food technology. 4
- (b) Mention any two important emerging areas in food science and technology. 2
- (c) Name the two building blocks of starch. 2
- (d) Give the formula for calculating the moisture content of food. 2
- (e) Name any one substance you would use for the following : 2
- (i) Extension of storage life of fresh produce
- (ii) Induction of early and uniform ripening
- (f) Define Irradiation. Give any two uses of irradiation. 3

2. (a) Elaborate on the applications of starches and modified starches in the food industry, giving appropriate examples. 6+6
- (b) Briefly discuss the properties related to protein-protein interaction with special reference to dough formation. 8
3. (a) Explain the process of lipid autoxidation, giving the schematic presentation/summary. 10
- (b) Give the functional role of the following minerals in the food industry : 10
- (i) Bromine
  - (ii) Calcium
  - (iii) Iodine
  - (iv) Iron
  - (v) Phosphates
  - (vi) Potassium
  - (vii) Sodium
  - (viii) Sulphur
  - (ix) Zinc
  - (x) Magnesium

4. (a) Briefly explain the uses of enzymes in the food industry. Justify your answer, giving suitable examples. 8
- (b) Enumerate the microbial, animal and plant sources of natural colourants in foods. 8
- (c) What are Non-starch Polysaccharides ? Give any two examples highlighting their food application. 2+2
5. (a) Differentiate between sols, foams and emulsions. Present their applications in the food industry. 10
- (b) Explain briefly any one alteration occurring in the following foods during processing and storage : 2+2+2+2+2
- (i) Fruits and vegetables
- (ii) Milk and milk products
- (iii) Meat and poultry
- (iv) Eggs
- (v) Nuts and oilseeds
6. Briefly explain the following methods of food processing/preservation and their uses in the food industry (each method may be explained in 250 – 300 words each) : 5+5+5+5
- (a) Freezing
- (b) Fermentation
- (c) Blanching
- (d) Concentration

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

- (a) Protein isolates and their uses in the food industry
  - (b) Factors affecting process of deep fat frying
  - (c) Minimally processed fresh foods
  - (d) Sensory evaluation of food products
  - (e) Uses of functional foods in new product development
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