

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

Term-End Examination

December, 2021

MFN-008 : PRINCIPLES OF FOOD SCIENCE

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

Maximum Marks : 75

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

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

1. (a) Differentiate between Food Science and Food Technology. 2
- (b) List any four applications of starches in the food industry. 2
- (c) Differentiate between visible and invisible fats, giving examples. 2
- (d) List the three categories in which food protein sources can be categorised. 2
- (e) List the application of the following nutrients in the food industry : 4
- (i) Vitamin A water soluble
- (ii) Phosphate
- (iii) Sodium
- (iv) Vitamin B₂

- (f) List any three natural food colourants from plant sources. $1 \frac{1}{2}$
- (g) Enlist any three vocabulary you will use to describe sensory characteristics of food products. $1 \frac{1}{2}$
- 2. Explain the following briefly :**
- (a) Deteriorative changes occurring in fats and oils 7
- (b) Surface properties of proteins 6
- (c) Properties of starch used in food industry 7
- 3. (a) Mention the changes that occur in the following foods during processing and storage : 4+4**
- (i) Fruits and Vegetables
- (ii) Milk and Milk products
- (b) What is the difference between Sols, Gels and Suspensions ? Explain, giving examples. 8
- (c) Explain the principle behind dough formation. 4
- 4. (a) What are the different methods of drying foods ? Explain briefly, highlighting how the process of drying preserves foods. 10**
- (b) Discuss the role of fermentation in food preservation. Give examples of fermented foods. 10

5. (a) What are enzymes ? Briefly discuss its uses in the food industry. 8
- (b) Briefly explain how freezing as a method helps to preserve foods. Enumerate the different freezing systems. 12
6. (a) What do you understand by product development ? Briefly explain the different phases of developing a new product. 2+8
- (b) What are acceptance tests ? Discuss briefly how they can be used for evaluation of food products. 2+8
7. Write short notes on any **four** of the following : 5+5+5+5
- (a) Irradiation
- (b) Role of emulsifier in achieving a stable product
- (c) Use of Gums in the food industry
- (d) Minimally Processed Foods
- (e) Non-enzymatic Browning
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