

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

**M. SC. (DFSM)**

**Term-End Examination**

**December, 2023**

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

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

*Maximum Marks : 75*

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***Note :** Answer **five** questions in all. Question number 1 is compulsory. All questions carry equal marks.*

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1. (a) List any *four* thermal processing methods. 2
- (b) What are additives ? Give any *two* broad groups of additives used in food industry. 3
- (c) List any *four* preservatives and the food products in which they are used. 4

- (d) Define the following : 2+2
- (i) Shelf-life
  - (ii) Functional foods
- (e) What are fermented foods ? Give example of foods fermented by bacteria. 2
2. Enumerate the applications of the following in the food industry : 3×5=15
- (a) Starches
  - (b) Carboxymethyl cellulose
  - (c) Pectin
  - (d) Guar gum
  - (e) Modified starches
3. (a) What is rancidity ? Mention the compounds responsible for it. Explain how anti-oxidants delay the onset of rancidity. 5
- (b) Comment on the role of the following properties of proteins in the food preparation : 6
- (i) Gelaton

- (ii) Texturization
- (iii) Stabilizer
- (c) Differentiate between protein concentrates and protein isolates, giving examples. 4
4. (a) What are food hydrocolloids ? Describe their application in the food industry. 8
- (b) What are the deteriorative actions and useful effects of enzymes in food industry ?  
7
5. (a) Enumerate different textural parameters and describe any *two* tests for measuring texture in foods. 8
- (b) Describe the changes that occur during cooking milk and eggs.  $3\frac{1}{2} + 3\frac{1}{2}$
6. (a) Explain how the process of freezing helps in preservation of food. What are the different methods of freezing ? 10
- (b) Enumerate the basic advantages of microwave heating. 5

7. (a) What are the hedonic tests for sensory evaluation of food ? 3
- (b) What are the preliminary steps involved during preparation of raw material ? 7
- (c) Present a brief review on the traditional methods of food preservation. 5
8. Write short notes on any *three* of the following : 5 each
- (a) Dehydration of foods
- (b) Enzymatic and non-enzymatic browning
- (c) Processing of cereals for milling
- (d) Nutritional functional role of any *two* essential minerals and any *two* vitamins in the food industry
- (e) Food emulsions and how they can be stabilized