

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

[M. SC. (DFSM)]

Term-End Examination

December, 2024

MFN-008 : PRINCIPLES OF FOOD SCIENCE

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

Maximum Marks : 75

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

1. (a) Enlist any *two* areas covered within the study of food science and technology. 2
- (b) What is invert sugar ? Give *two* applications of invert sugar in food industry. 2

- (c) Differentiate between starch and non-starch polysaccharides, giving suitable examples. 2+2
- (d) Define Food Rheology. List the *three* components/aspects that rheology deals with. 3
- (e) List any *one* functional role of the following in the food industry : 2
- (i) Bromine
- (ii) Phosphates
- (f) Give *one* example each of the following colloidal system : 2
- (i) Foam
- (ii) Sol
2. (a) Briefly discuss the role of fermentation in the food industry highlighting the agents and food products obtained from this process. 10
- (b) Explain any *one* functional role of sugars in the food industry. 5

3. Explain the use of the following in the food industry : 5+5+5
- (a) Food additives
 - (b) Algal polysaccharides
 - (c) Protein isolates
4. (a) Explain the process of thermal decomposition of fats and oils. 7
- (b) Discuss briefly the application of enzymatic analysis in the food industry giving suitable examples. 8
5. (a) Comment on 'Freezing' as a method to preserve food, highlighting the various freezing systems used in the industry. 8
- (b) Enumerate the use of modified starches in food industry. 7
6. (a) Discuss the relevance and the steps involved in new food product development. 4+6
- (b) Explain the changes occurring in meat and meat products during processing. 5

7. Explain the following processes : 5+5+5
- (a) Pasteurization
 - (b) Primary processing of rice
 - (c) Factors responsible for food spoilage
8. Write short notes on any *three* of the following : 5+5+5
- (a) Hydration properties of proteins
 - (b) Food irradiation
 - (c) Natural pigments and colours in foods
 - (d) Acceptance test used for evaluation of food products

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