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MFN-008

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

[M. SC. (DFSM)]

Term-End Examination

December, 2025

MFN-008 : PRINCIPLES OF FOOD SCIENCE

Time : 2 $\frac{1}{2}$ Hours Maximum Marks : 75

*Note : (i) Attempt **five** questions in all.*

(ii) Question No. 1 is compulsory.

(iii) All questions carry equal marks.

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1. (a) Define the following : 2×5=10

(i) Food Science

(ii) Invert sugar

(iii) Modified starches

(iv) Microbial polysaccharides

(v) Sensory evaluation

(b) Categorize the *three* qualities of food.

1½

(c) Name the derivative formed and give

the reaction occurring when a vegetable

becomes olive green on cooking. 2½

(d) List any *two* preliminary preparation

processes of raw material. 1

2. (a) What are starches ? Highlight their basic properties and applications in the food industry. 10
- (b) Enumerate the uses of non-starch polysaccharides in the food industry. 5
3. Explain the following briefly, giving suitable examples/justifications : 5+5+5
- (a) Protein concentrates and their uses in the food industry
- (b) Deteriorative changes occurring in fats and oils
- (c) Functional role of minerals in the food industry

4. (a) Present a brief review on natural colours in food and their sources and uses in the food industry. 7
- (b) Comment on the utilization of enzymes in the food industry giving examples. 8
5. (a) Discuss the role of emulsifiers in achieving a stable product in food industry. 8
- (b) What are the changes occurring in fruits and vegetables during the process of dehydration and freezing? 7
6. (a) Briefly explain the thermal processing methods commonly used in the food industry. 10

- (b) Elaborate on the role of fermentation in food industry, highlighting fermented foods available for use today. 5
7. (a) What do you understand by the term 'New Product Development' ? What are the different phases involved in developing a new product ? 2+6
- (b) Enlist the traditional methods of food preservation. Elaborate on the principle involved in any *one* method of preservation. 3+4
8. Write short notes on any *three* of the following : 5+5+5
- (a) Different methods of freezing food

- (b) Alterations occurring in milk and milk products during processing
- (c) Factors influencing sensitivity of taste
- (d) Non-nutritive sweeteners

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