

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

[M. SC. (DFSM)]

Term-End Examination

June, 2026

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) Differentiate between food processing and food preservation giving appropriate examples. 3
- (b) Give *two* examples for each of the following : 10
- (i) Low acid foods

- (ii) Drying techniques
 - (iii) Concentrated foods
 - (iv) Freezing Systems
 - (v) Food products which involve microwave vacuum drying
 - (vi) Food fermented by moulds
 - (vii) Accepted chemical food preservatives
 - (viii) Steps involved in post-harvest system of cereal processing
 - (ix) Effect of heat processing on fish
 - (x) Method to measure color in food
- (c) Name any *two* instruments you may use to measure the texture of foods. 2
2. (a) Briefly explain the role of sugar in the appearance of foods highlighting the non-enzymatic browning reactions. 10
- (b) Comment on gelation as a functional property of proteins, highlighting its role in food preparation. 5

3. Explain the following briefly giving examples : 5+5+5
- (a) Oxidative changes occurring in fats and oils causing deterioration
 - (b) Enzyme utilization in food industry
 - (c) Application of starches in the food industry
4. (a) What are foams and emulsions ? How are they formed ? Discuss their application in the food industry. 8
- (b) What are non-starch polysaccharides ? Give some of their important uses in the food industry. 7
5. (a) Why do we need to concentrate or isolate a protein from a product ? Discuss briefly the uses of protein concentrates and isolates in the food industry giving examples. 2+8
- (b) What is a pigment ? Give the natural colours used in foods. 5

6. (a) As a food scientist, you have developed a new food product. What acceptance test you would use for sensory evaluation ? 8
- (b) Explain the following highlighting their role in product development : 4+3
- (i) Functional foods
- (ii) Shelf life
7. Write short notes on any *three* of the following : 5+5+5
- (a) Cold shortening in meat
- (b) Traditional methods of food preservation
- (c) Alterations occurring in vegetables during processing.
- (d) Uses of invert sugar in the food industry.
- (e) Different methods for freezing foods.

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