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MFN-008

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

M. SC. (DFSM)

Term-End Examination

June, 2023

MFN-008 : PRINCIPLES OF FOOD SCIENCE

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

Maximum Marks : 75

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

1. (a) List any **three** areas covered within the study of food science/technology. 3
- (b) Differentiate between fibre and resistant starch giving examples. 4
- (c) Give any **two** functions of gums in the food industry with suitable examples. 2
- (d) Present any **two** factors affecting the process of deep fat frying. 2

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- (e) How are single cell proteins (SCP) different than proteins of plant origin ? Explain giving suitable examples. 4
2. Explain the following briefly giving examples :
- (a) Role of sugars in the appearance of foods 5
- (b) Uses of modified starches in food and confectionery industry 5
- (c) Oxidative changes occurring in fats and oils 5
3. (a) Enumerate the *three* functional properties of proteins and their application in the food industry. 10
- (b) Give the functional role of Vitamin B6, Niacin, Iodine, Vitamin E and Iron in the food industry. 5
4. (a) Briefly explain the uses of enzymatic analysis in food industry, giving appropriate examples. 7
- (b) Comment on the uses of microbial sources, plant sources and animal sources of natural colours in the food industry. 8

5. (a) Explain the applications and properties of the following in the food industry. Justify with suitable examples : 9
- (i) Foams
 - (ii) Gels
 - (iii) Sols
- (b) Justify the following changes giving suitable explanation :
- (i) Changes in the colour of spinach while boiling in water 3
 - (ii) High aroma, roasty, caramel flavour seen in baked cereals 3
6. (a) List any *ten* methods of food preservation giving examples. 5
- (b) What are the different dryers used in the food industry ? 3
- (c) Comment on the different methods of freezing in food industry. 5
- (d) List the advantages of microwave oven over conventional heating. 2

7. (a) Discuss the relevance and uses of fermentation in the food industry. Give examples of food fermented by bacteria, moulds and yeasts. 8
- (b) Enumerate the use of chemicals as preservative in the food industry. 7
8. Write short notes on any *three* of the following : 5+5+5
- (a) Flowchart for postharvest system of cereal processing
- (b) Role of sensory evaluation and methods used for sensory evaluation in product development
- (c) Functional foods and their uses in food industry
- (d) Preservation by concentration
- (e) Methods of Pasteurization