

No. of Printed Pages : 6

MFN-008

**MASTER OF SCIENCE (DIETETICS
AND FOOD SERVICE
MANAGEMENT) [M. SC. (DFSM)]
Term-End Examination
June, 2025**

MFN-008 : PRINCIPLES OF FOOD SCIENCE

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

Maximum Marks : 75

Note : (i) *Question No. 1 is compulsory.*

(ii) *Attempt **five** questions in all.*

(iii) *All questions carry equal marks.*

1. (a) List any *two* components of study of food science and technology. 2
- (b) Give a simple classification of carbohydrates with examples of these carbohydrates with their food sources. 3

C-2050/MFN-008

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(c) Differentiate between the following sets of terms :

(i) Concentration and Thermal processing $2\frac{1}{2}$

(ii) Microwave processing and Irradiation $2\frac{1}{2}$

(d) Define the following giving their application in the food industry :

(i) Foams $2\frac{1}{2}$

(ii) Gels $2\frac{1}{2}$

2. (a) Give *one* food application of the following : 5

(i) Curdlan

(ii) Gum arabic

(iii) Modified starches

(iv) Sols

(v) Whey protein concentrate

- (b) What do you understand by non-enzymatic browning reactions occurring in food ? Explain giving examples. 10
3. (a) What are the compounds formed during the oxidation of fats and oils ? Explain briefly. 5
- (b) Comment on the functional properties of proteins and their applications in food preparation. 10
4. (a) Briefly explain the role of enzyme assay in determining the freshness of foods, giving suitable examples. 9
- (b) Give the reason for the following :
- (i) Heating milk to high temperature causes a cooked flavour to appear. 2

- (ii) Undesirable changes during
canning of fish. 2
- (iii) Development of brown colour in egg
white during drying and storage. 2
5. (a) Briefly explain the role of the following
in food fermentation, giving examples :
- (i) Bacteria 5
- (ii) Moulds 5
- (b) What are minimally processed foods ?
Give examples and their advantages. 5
6. (a) What are functional foods ? Discuss
their role in new product development
giving appropriate examples. 10

- (b) What is sensory evaluation ? What are the methods available for sensory evaluation ? 1+4
7. (a) What are food additives ? Explain their uses in the food industry. 5
- (b) Give the principle of dehydration as a method of preservation. Explain the methods used for dehydration at home and commercial level. 10
8. Write short notes on any *three* of the following : 5+5+5
- (a) Use of salt, sugar as preservative
- (b) Natural food colourants obtained from microbial and animal sources

- (c) Contribution of sugar in texture of food
- (d) Favourable and unfavourable changes/alterations occurring in cereals and cereal products during processing

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