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MFN-008

MASTER OF SCIENCE
DIETETICS AND FOOD SERVICE MANAGEMENT
[M. SC. (DFSM)]
Term-End Examination
June, 2024

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.*

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1. (a) Explain the following in **2-3** sentences each : 10

   (i) Amylose and Amylopectin

   (ii) Shelf-life

   (iii) Hurdle concept

   (iv) Organoleptic properties

   (v) Expression of moisture content in foods

(b) Give *one* example each of the following : 5

(i) Non-starch polysaccharide

(ii) Algal polysaccharide

(iii) Seed gum

(iv) Exudate gums

(v) Microbial polysaccharide

2. Explain the following briefly giving examples :

(a) Maillard reaction in food during processing. 5

(b) Autoxidation in fats and oils. 5

(c) Emerging trends in the area of food science/technology. 5

3. (a) Briefly discuss the applications of protein concentrates, isolates and hydrolysates in the food industry. 10

(b) Present the functional role of calcium and iron in the food industry. 5

4. (a) Briefly explain the role of enzymes in the food industry. 5

(b) Present the classification of colloidal system giving examples. 5

(c) Enumerate the different textural parameters of food giving examples. 5

5. (a) Enlist the advantages of food processing. 5

(b) Briefly explain the alteration occurring in the following foods during processing : 5+5

(i) Fruits and vegetables

(ii) Milk and milk products

6. Describe the methods and principle of good preservation commonly used today. 15

7. Differentiate between the following processes used in the food industry highlighting their process and advantages : 5+5+5

(a) Pasteurization

(b) Sterilization

(c) Canning

8. Write short notes on any *three* of the following : 5 each

(a) Freezing as a method of food preservation

(b) Foods fermented by bacteria used in our cuisine.

(c) Use of chemicals as preservatives

(d) Factors responsible for developing of new products.

(e) Microwave *vs.* Conventional heating