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MFN-008

MASTER OF SCIENCE (DIETETICS AND FOOD SERVICE MANAGEMENT)

M. SC. (DFSM)

Term-End Examination

December, 2020

MFN-008 : PRINCIPLES OF FOOD SCIENCE

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

Note : *Answer* ***four*** *questions in all. Question number* ***1*** *is compulsory.*

1. (a) List any ***two*** emerging trends in the area of Food Science/Technology. 2

   (b) Give one food application of the following : 4

   (i) Agar

   (ii) Locus bean gum

   (iii) Gum arabic

   (iv) Curdlan

   (c) Enlist the different types of fatty acids giving examples of the foods they are found in. 3

(d) What is whey protein concentrate ? Enlist its uses. 2

(e) Name the dispersed phase, dispersing medium and examples of the following colloidal systems : 4

(i) Fog

(ii) Foam

(iii) Sol

(iv) Emulsion

2. (a) List the *two* main non-enzymatic browning reactions occurring in food during processing. Discuss the role of sugars in these reactions. 10

(b) List the compounds formed during the following processes in fats and oils. Explain how can you present these changes : 10

(i) Oxidation

(ii) Thermal decomposition

3. (a) Comment on the functional properties of proteins and their role in food preparation. 10

(b) Briefly discuss how enzyme assay is helpful in determining the extent of freshness in wheat grains, milk and meat, giving examples. 10

4. Explain the following briefly : 5 each

   (a) Green vegetables become olive green on cooking.

   (b) Heating milk to high temperatures causes a cooked flavour to appear.

   (c) Undesirable colour changes in canned fish.

   (d) The development of brown colour in egg white during drying as well as storage after drying.

5. (a) Briefly explain the different functions of moulds in food fermentation. 6

   (b) Enumerate the simple techniques one can use during concentration process. Give examples of food products formed by concentration process. 6

   (c) How are foods dehydrated ? Give the principle and any *two* methods one can use for dehydration. 8

6. (a) What are minimally processed foods ? Enlist their advantages. 5

   (b) Define product development. Briefly analyze the role of functional foods in product development, giving appropriate examples. 10

(c) What is shelf-life ? What are the methods of shelf-life examination ? 5

7. Write short notes on any *four* of the following : 5 each

(a) Use of salt, sugar as a preservative

(b) Freezing of food by contact with a cooled gas

(c) Food applications of microwave

(d) Uses of food additives with appropriate examples

(e) Sterilization as a food preservation method