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**MFN-008**

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# MASTER OF SCIENCE (DIETETICS AND FOOD SERVICE MANAGEMENT)

## Term-End Examination

## December, 2014

## MFN-008 : PRINCIPLES OF FOOD SCIENCE

*Time : 2½ hours* *Maximum Marks : 75*

***Note :*** *Question No. **1** is **compulsory**. Attempt **five** questions in all. All questions carry **equal** marks.*

**1.** Explain briefly the following in 2-3 sentences each : **1½x10=15**

(a) Steps involved in product development
(b) Functional foods
(c) Rheology of foods
(d) Canning process
(e) Foam formation in foods
(f) Modified starches in confectionary industry
(g) Enzymes in Brewing industry
(h) Whey protein concentrates
(i) Food irradiation
(j) Commercial sterilization

**2.** (a) Explain how the process of freezing helps in preservation of food ? What are different methods of freezing ? **3+7=10**

(b) What are the factors that influence microwave heating pattern ? **5**

3. (a) Enumerate different textural parameters and describe any two tests for measuring texture in foods. 8

(b) What are the changes that occur during baking of cereals and cooking of eggs ? 3.5+3.5=7

4. (a) What are food hydro-colloids ? Describe their application in food industry. 8

(b) What are Hedonic test for sensory evaluation of foods ? 3

(c) List some natural food colourants obtained from microbial, animal and plant sources. 4

5. (a) Give the functional and nutritional role of any four essential minerals in food industry. 8

(b) List the factors affecting the process of deep fat frying. 3

(c) What are food emulsions ? How can they be stabilized ? 4

6. (a) What are the deteriorative actions and useful effects of enzymes in food processing operations ? 8

(b) What are the preliminary steps involved during preparation of raw materials ? 7

7. Write short notes on **any three** of the following : 5+5+5=15

(a) Chemical and microbial changes in food spoilage

(b) Changes in proteins in dough formation

(c) Dehydration of foods

(d) Enzymatic and non-enzymatic browning

(e) Processing of cereals for milling

(f) Single cell protein