

02743

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

**Term-End Examination**

**June, 2016**

**MFN-008 : PRINCIPLES OF FOOD SCIENCE**

*Time : 2½ 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) Fill in the blanks : 10
- (i) Reaction between amino group of protein and reducing group of sugar at a high temperature is known as \_\_\_\_\_ reaction.
  - (ii) The science of deformation and flow of matter is known as \_\_\_\_\_.
  - (iii) Proteins from sources like algae, fungi, bacteria and yeast are \_\_\_\_\_.
  - (iv) The chief pigment present in green vegetables is \_\_\_\_\_.
  - (v) Mayonnaise is an example of \_\_\_\_\_ in \_\_\_\_\_ emulsion
  - (vi) Substances that can delay the onset or slow the rate of oxidative deterioration of oil/fats are \_\_\_\_\_.

- (vii) When sensory organs are used to assess the quality of food product the evaluation is said to be \_\_\_\_\_.
- (viii) Loss of liquids from gels upon standing and shrinkage of gel structure is known as \_\_\_\_\_.
- (ix) The major component of film formed on heating of milk is \_\_\_\_\_.
- (x) Sugar, salt and spices belong to \_\_\_\_\_ preservatives and are considered relatively safe for consumption.

(b) State True or False and correct the false statements : 5

- (i) Flavour is combination of both taste and smell.
- (ii) Chlorophyll enhances to dark green colour when food is heated in acidic solution.
- (iii) Eggs lose their heat coagulation properties on drying.
- (iv) Water activity is the ratio of vapour pressure of a food to the vapour pressure of pure water.
- (v) Caramelization is formation of dark coloured complexes when sugars are heated at high temperature.

2. (a) Differentiate between colloids and crystalloids. Describe properties of colloidal system. 3+7
- (b) What are the various factors affecting the process of deep fat frying ? 5

3. (a) How does the dough formation takes place ? Describe the factors affecting the protein-protein interaction during dough formation. 7
- (b) What is the affect of heat processing on milk and Eggs ? 4+4=8
4. (a) Mention any two applications of whey protein concentrates and say protein concentrates. 7
- (b) Give the functional and nutritional role of essential minerals in food industry. 8
5. (a) What are the various methods of concentration being used in food processing ? 10
- (b) Enlist five fermented foods consumed in India. 5
6. Enumerate various causes of food spoilage. 5+10  
Discuss briefly the principles and methods of food preservation.
7. Differentiate between any five : 5x3=15
- (a) Blanching and Pasteurization
- (b) Drying and Concentration
- (c) Emulsions and Foams
- (d) Sieving and Winnowing
- (e) Sensory evaluation and Objective evaluation
- (f) Protein Isolates and Protein hydrolysate
- (g) Enzymatic and non-enzymatic browning
-