

**MASTER OF SCIENCE (DIETETICS AND FOOD SERVICE MANAGEMENT)****Term-End Examination****June, 2017****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.*

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1. (a) Give one example each of the components of the following. Sugars, Starch and Non-Starch polysaccharide, found in our diet. 3
- (b) Mention the compound responsible for rancidity of fats and name the compound liberated by hypolysis. 2
- (c) What is a single cell protein ? 2
- (d) Name any two readily oxidable compounds which are protected by Vitamin E. 2
- (e) Name any two nutritional functional role of phosphate in the food industry. 2
- (f) Name any one natural food colour obtained from the following : 3
- (i) Microbial Source
  - (ii) Animal Source
  - (iii) Plant Source
- (g) Name the effect caused due to autoclaving milk. 1

2. Explain the applications of the following in the food industry. Give appropriate examples. 5+5+5
- (a) Starches
  - (b) Pectin
  - (c) Guar Gum
3. (a) What is autoxidation ? Present a schematic illustration summarizing the process of lipid oxidation. 3+7
- (b) Briefly explain the maillard reaction and its significance. 5
4. (a) Comment on the following functional properties of protein and its uses in food preparation : 4+4
- (i) Texturization
  - (ii) Protein - protein interaction
- (b) Describe the application of enzymatic analysis in food industry giving appropriate examples. 7
5. Define Sols, Gels, Foams and emulsions. How are they formed ? What are the factors affecting their stability ? Elaborate. 15
6. Explain briefly the following alterations in food : 3+3+3+3+3
- (a) Green vegetables become olive green on cooking.
  - (b) Cooked flavour appearing on heating milk.
  - (c) Browning occurring in fruits and vegetables.
  - (d) Reversion flavour in oils
  - (e) Maillard reaction in eggs.

7. Briefly describe some of the common traditional methods and principles of preservation used at home and in a small scale industry. 15
8. Write short notes on **any five** of the following 50 - 100 words each only. 3+3+3+3+3
- (a) Canning and advantages of canned foods
  - (b) Simple techniques used for evaporation during the concentration process
  - (c) Fermentation as a food processing method
  - (d) Food applications of microwave
  - (e) Common preservatives in food products
  - (f) Sensory Evaluation of food products
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