

**MASTER OF SCIENCE (DIETETICS AND  
FOOD SERVICE MANAGEMENT)****Term-End Examination****December, 2007****MFN-008 : PRINCIPLES OF FOOD SCIENCE**Time :  $2\frac{1}{2}$  hours

Maximum Marks : 75

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**Note :** Answer **four** questions in all. Question no. 1 is **compulsory**.

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1. (a) Explain briefly in 2 – 3 sentences each :  $2 \times 5 = 10$
- (i) Bound water
  - (ii) Objective evaluation of food
  - (iii) Asepsis
  - (iv) Blanching
  - (v) Sweetness
- (b) Differentiate between :  $2\frac{1}{2} \times 2 = 5$
- (i) Sterilization and Pasteurization
  - (ii) Protein isolates and Protein concentrates

2. (a) What are chemical preservatives ? Describe their mode of action by giving suitable examples. 10
- (b) What is fermentation ? Describe the various types of fermented foods using different micro-organisms. 10
3. (a) Give the functional roles of the following nutrients in the food industry : 10
- (i) Vitamin B (Thiamine)
- (ii) Ca
- (iii) Phosphates
- (iv) Sodium
- (v) Riboflavin
- (b) Discuss the application of enzymatic analysis in food industry. Describe how enzyme assay is helpful in determining the extent of freshness in wheat and milk. 10
4. (a) Differentiate between sols, gels and suspensions, giving examples. 10
- (b) Explain briefly the changes that take place during baking of cereals, cooking of vegetables, eggs and fish. 10
5. (a) Discuss the significance of 12 D concept in canning. 10
- (b) What is the importance of freezing as a method of processing in food industry ? Explain highlighting the different freezing methods used. 10

6. (a) Define starches, modified starches and non-starch polysaccharides (NSP). 6
- (b) Explain briefly the functional role of the following in the food industry : 7+7=14
- (i) Algal polysaccharides
  - (ii) Seed gums
7. Write short notes on any **four** of the following : 4×5=20
- (i) Deteriorative changes in fats and oils
  - (ii) Functional properties of proteins
  - (iii) Rheology and its usefulness in foods
  - (iv) Need for new food product development
  - (v) Natural flavours

