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MFN-008

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

M. SC. (DFSM)

Term-End Examination

June, 2019

MFN-008 : PRINCIPLES OF FOOD SCIENCE

Time : 2 $\frac{1}{2}$ Hours

Maximum Marks : 75

Note : Answer four questions in all. Q. No. 1 is compulsory.

1. Give one food application for each of the following : 15

- (i) Acidulant
- (ii) Emulsifier
- (iii) Single Cell Protein (SCP)
- (iv) Sugar
- (v) Pectin
- (vi) Nicotinic acid
- (vii) Modified Starch
- (viii) Protein
- (ix) Phosphates

- (x) Chymosin
 - (xi) Caramalization
 - (xii) Foams
 - (xiii) Satting
 - (xiv) Seed gums
 - (xv) Gluten
2. (a) What is non-enzymatic browning ?
Describe the browning reactions occurring
in food during processing. 10
- (b) Illustrate the starch structure and describe
its properties and functions which are in
use in the food industry. 10
3. Explain the following briefly, giving examples :
5+5+5+5
- (i) Algal polysaccharides
 - (ii) Use of food additives in food industry
 - (iii) Surface properties of proteins
 - (iv) Application of enzymatic analysis in food
industry
4. Briefly describe the following with appropriate
examples : 5+5+5+5
- (a) 12 D concept in the context of food
sterilization

- (b) Freezing as a preservative method
 - (c) Minimally processed foods
 - (d) Drying processes for food dehydration
5. (a) What do you understand by the concept of thermal decomposition of fats and oils ? Present a critical review on this concept. 7
- (b) What are the alterations occurring in cereals and legumes during processing and storage ? Explain giving examples. 7
- (c) Mention the alterations occurring in the following during food processing : 3+3
- (i) Milk and milk products
 - (ii) Meat and meat products
6. (a) Define the following terms and briefly explain the relationship between them : 2+2+2+4
- (i) Product development
 - (ii) Functional foods
 - (iii) Sensory evaluation
- (b) What is fermentation ? Briefly discuss the role of microorganisms in food production and preservation giving suitable examples.

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

5+5+5+5

- (i) Classification of foods on the basis of pH
- (ii) Use of food colours in the food industry
- (iii) Concentration as a method of food preservation
- (iv) Properties of colloidal systems
- (v) Invert sugar and its uses in food industry