

**POST GRADUATE DIPLOMA IN FOOD
SCIENCE AND TECHNOLOGY (PGDFT)**

Term-End Examination

December, 2017

MFT-001 : FOOD CHEMISTRY AND NUTRITION

Time : 3 hours

Maximum Marks : 70

- Note :**
- (i) *Answer five questions.*
 - (ii) *All questions carry equal marks.*

1. Explain the following : 7x2=14
- (a) Bound water
 - (b) Non-calorific sweetener
 - (c) Protein hydrolysate
 - (d) Antioxidant
 - (e) Essential fatty acid
 - (f) Antinutritional factors
 - (g) Microminerals (Trace elements)
2. (a) What is meant by water activity ? Explain the role of water activity in food spoilage. 2+3=5
- (b) Write about applications of carbohydrates in food industry. 4
- (c) Write notes on mutarotation and inversion of sugar. 2.5+2.5=5
3. (a) Describe two functional properties of protein used in food processing. 4
- (b) Explain the structure of amino acids with the help of a diagram. 3
- (c) Define emulsion. How does lipolysis affect the shelf life of food ? 1+3=4
- (d) Describe the process of hydrogenation of fat. 3

4. (a) Classify vitamins with examples. 3
 (b) What do you mean by isoenzymes and coenzymes ? What is the role of enzymes in cheese manufacture ? 2+2=4
 (c) Write the functions of two macro minerals and two microminerals. 4
 (d) Write a note on pesticide residue in food. 3
5. (a) Give the gross composition of milk. What are the factors affecting composition of milk ? 1+4=5
 (b) Write a note on whey protein. 2
 (c) Differentiate between DFD and PSE meat. 3
 (d) Write about the internal quality parameters of egg. 4
6. (a) Write about post-harvest changes in fruits and vegetables. List the pigments present in fruits and vegetables. 4+2=6
 (b) Explain the structure of a pulse grain with the help of a diagram. 4
 (c) Describe the functional properties of cereal protein. 4
7. (a) What is RDA ? Write about the practical application of RDA. 1+2=3
 (b) What is balanced diet ? What are the basic principles to be considered while formulating balanced diet ? 1+3=4
 (c) Explain the process of digestion of carbohydrates in human body. 4
 (d) What are the dietary sources and deficiency symptoms of vitamin D ? 3