

ROLL No.....

NATIONAL COUNCIL FOR HOTEL MANAGEMENT  
AND CATERING TECHNOLOGY, NOIDA  
**ACADEMIC YEAR 2013-2014**

COURSE : 2<sup>nd</sup> Semester of 3-year B.Sc. in H&HA  
SUBJECT : Principles of Food Science  
TIME ALLOWED : 03 Hours MAX. MARKS: 100

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(Marks allotted to each question are given in brackets)

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Q.1. Define Food Science, Food Processing and Food Microbiology. Discuss the inter-relationship between them. (10)

Q.2. What is starch in connection to amylose and amylopectin? Explain the factors affecting starch gel formation. (10)

Q.3. Discuss the functional properties of proteins (i.e. Viscosity, Foam ability, Gelation, Emulsification).

**OR**

Explain briefly the types and properties of colloids. (10)

Q.4. Define Enzymatic Browning. How will you prevent enzymatic browning reactions? (2+8=10)

Q.5. Give brief description of the following:  
(a) Dextrinisation (b) Maillard reaction (5+5=10)

**OR**

What are fats and oils? Differentiate between them. (2+8=10)

Q.6. Explain the sensory evaluation of food quality.  
**OR**  
Explain the classification of food flavours. (10)

Q.7. What is emulsion? Differentiate between O/W and W/O emulsion. Discuss briefly the role of emulsifying agent in food preparation. (2+6+2=10)

Q.8. Define/explain the following with examples (**any five**):

- (a) Syneresis
- (b) Pasteurisation
- (c) Denaturation of proteins
- (d) Shortening agent
- (e) Winterisation
- (f) Food rheology
- (g) Proximate analysis of foods

(5x2=10)

Q.9. Give reasons for the following (**any five**):

- (a) Weeping of jelly
- (b) It is necessary to add extra flour to brown sauce
- (c) Dried fruits and vegetables on storage get browned
- (d) It is not desirable to add rice and sugar to milk or water in making rice payasam
- (e) Danger zone temperature for food products are 5 to 63° C.
- (f) Enzymatic browning can be stopped by dipping the cut vegetables and fruits in water.

(5x2=10)

Q.10. Fill in the blanks:

- (a) The continuous phase in milk is \_\_\_\_\_.
- (b) \_\_\_\_\_ is a protein present in wheat flour.
- (c) \_\_\_\_\_ is formed in maillard reaction.
- (d) The unpleasant odour of fat results in \_\_\_\_\_.
- (e) Flavour reversion is a phenomenon usually encountered in \_\_\_\_\_.
- (f) \_\_\_\_\_ is the natural pigment in green vegetables.
- (g) LTH stands for \_\_\_\_\_.
- (h) \_\_\_\_\_ is a crystalloid.
- (i) Polyphenolase is \_\_\_\_\_ which causes enzymatic browning.
- (j) \_\_\_\_\_ is a proteolytic enzyme present in papaya.

(10x1=10)

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