

ROLL No.....

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

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

(Marks allotted to each question are given in brackets)

- 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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ACADEMIC YEAR 2014-2015

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

(Marks allotted to each question are given in brackets)

- Q.1. (a) Define Food Science.
(b) Enumerate its importance for catering establishments. (3+7=10)
- Q.2. (a) Classify carbohydrates.
(b) Describe **any five** functions of carbohydrates in food preparation. (5+5=10)
- OR
- Explain the process of gelatinization with the help of an illustration and state the factors affecting it. (10)
- Q.3. (a) Describe **three** types of dispersions.
(b) Explain some colloids that can be formed during food preparation. (5+5=10)
- OR
- Define the role of emulsifying agents in food and explain the characteristics of emulsions. (10)
- Q.4. Illustrate the basic structure of proteins. State the properties of proteins that are useful in various food preparations. (5+5=10)
- Q.5. What is the importance of antioxidants in food? Explain **any two** types of spoilage conditions seen in fats and list some preventive measures. (3+7=10)

- Q.6. How is the proximate analysis of food constituents conducted in the food industry? (10)
- OR
- Define sensory assessment of food quality. Draw a standard format of a score card used for sensory evaluation of food. (3+7=10)
- Q.7. Why is the demand for food processing greatly increasing? Explain the types of processing methods by application of heat. (3+7=10)
- OR
- Explain the science behind the detection of flavour by the five sensory organs of the body. (10)
- Q.8. List at least **two** differences:
(a) Winterisation and Homogenization
(b) Microwave and Irradiation
(c) CAP and MAP
(d) Leavening and shortening agent
(e) Natural and synthetic emulsifiers (5x2=10)
- Q.9. Answer in brief:
(a) Flavour of tea (b) Fermentation
(c) Taste panel (d) Refining of fats
(e) Syneresis (5x2=10)
- Q.10. Fill in the blanks:
(a) _____ is the enzyme responsible for undesirable browning in food (phenol oxidase, amylase, papain).
(b) Cream is an example of _____ (aerosol, emulsion, solid foam).
(c) Masticometer is a device used to measure the _____ of a product (Chewiness, flow, colour).
(d) A processing technique applying heat which kills only the disease causing micro-organism is _____ (sterilization, pasteurization, drying).
(e) A flavour component in wine which contributes to the mouth feel and colour and breaks down during aging is _____ (nicotine, caffeine, tannin). (5x2=10)

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NATIONAL COUNCIL FOR HOTEL MANAGEMENT
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ACADEMIC YEAR 2015-2016

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

(Marks allotted to each question are given in brackets)

- Q.1. Define food science and discuss the relationship of food science with food chemistry, food micro-biology and food processing. (10)
- Q.2. Define emulsion. Discuss two types of emulsion (O/W, W/O). State the role of emulsifying agent. (10)
- Q.3. What are Fats and Oils? Differentiate between them. (10)
OR
Discuss the functional properties of proteins i.e. Viscosity, Foamability, Gelation and Emulsification.
- Q.4. Differentiate between amylose and amylopectin. Explain the factors affecting starch gel formation. (10)
- Q.5. Define Enzymatic Browning in food. How will you prevent enzymatic browning reactions? (10)
- Q.6. Give brief description of the following: (5+5=10)
(a) Dextrinisation (b) Gelatinisation

- Q.7. Explain the sensory evaluation of food quality. (10)
OR
Discuss the types of colloidal system.
- Q.8. Explain the following terms (any five): (5x2=10)
(a) Pasteurisation (b) Winterisation
(c) Denaturation of proteins (d) Syneresis
(e) Food rheology (f) Food enzyme
(g) Reaction maillard
- Q.9. Explain the classification of food flavours. (10)
OR
What are the objectives of food processing? Describe two food preservation methods.
- Q.10. Fill in the blanks: (10x1=10)
(a) HTST stands for _____.
(b) Rancidity occurs in _____.
(c) Polyphenolase is _____ which causes enzymatic browning.
(d) _____ is natural emulsifying agent.
(e) _____ compound is formed in maillard reaction.
(f) the protein gluten is present in _____.
(g) _____ is the natural pigment in tomatoes.
(h) _____ is a crystalloid.
(i) _____ is a proteolytic enzyme present in pineapple.
(j) Dry heating of starch is known as _____.

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ACADEMIC YEAR 2016-2017

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

(Marks allotted to each question are given in brackets)

Q.1. The hotel industry uses the principles of food science in many of its operations. Explain how?

OR

Food Science is inter-related with various other field. Explain. (10)

Q.2. What is the effect of cooking on the following foods (any two):
(a) Carbohydrates (b) Protein (c) Fats (2x5=10)

Q.3. Name five examples of processed foods available in stores today. What are the benefits of food processing?

OR

Highlight the types of food processing techniques using heat and cold temperature. (10)

Q.4. (a) Classify carbohydrates.
(b) Describe any five functions of carbohydrates in food preparation.
OR
How are the various colloids formed? Explain each one in brief. (10)

Q.5. How does the process of enzymatic browning occur in foods and how can it be prevented? (10)

Q.6. Discuss the functional properties of proteins (i.e. Viscosity, Foamability, Gelatin, Emulsification) (10)

Q.7. Differentiate between the following (any five):
(a) Gelatinization and Gelation
(b) Brownian Movement and Tyndall effect.
(c) Flavour in Tea and Wine.
(d) Caramel and Dextrin
(e) Food Microbiology and Food Technology
(f) Marmalade and Marshmallow (5x2=10)

Q.8. Write short notes on:
(a) Commercial uses of fat
(b) Autoxidation (5+5=10)

Q.9. What are the requirements while conducting sensory evaluation?
OR
What are the refining techniques used for oils? (10)

Q.10. A State whether True or False:
(i) MAP stands for Modified Atmosphere Packaging
(ii) Sensory evaluation produces the same result every time it is conducted.
(iii) Lard is a type of plant fat.
(iv) Gelatin is used while making puddings.
(v) True solutions separate on standing.
B Give one word for (any five):
(i) Mixture of 2 immiscible liquids _____.
(ii) An example of a synthetic emulsifier _____.
(iii) Person who innovates or discovers new products _____.
(iv) Proteins that react as acids or bases are given the term _____.
(v) Class of carbohydrate that do not dissolve in water _____.
(vi) A flavour component in fish _____. (5+5=10)
