

NATIONAL COUNCIL FOR HOTEL MANAGEMENT AND CATERING TECHNOLOGY, NOIDA
ACADEMIC YEAR 2018-2019

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. Draw a chart of types of carbohydrates based on number of sugar units and their complexity. Give **one example** of each.
OR
What do you understand by gelatinization? Discuss the factors that affect the gelatinization of starch? (10)
- Q.2. What is sensory assessment of food quality and what are the parameters used to assess the same? (10)
OR
(a) Define food processing. What are the objectives of food processing?
(b) Name **any five** effects of processing on nutritive value of foods and also state **five** ways to avoid loss of nutrients. (5+5=10)
- Q.3. Differentiate between the following (**any two**):
(a) Sol and Suspension
(b) Auto oxidation and Hydrolytic rancidity
(c) Starch and Dextrin
(d) Fractionation and Winterization (2x5=10)
- Q.4. Name and describe the browning reactions that occur in food. Name five food items in which browning improve the flavour.
OR
What characteristics do colloids exhibit? Name and explain **any three**. (10)
- Q.5. What are the different types of fats based on the origin and degree of saturation? Give **one example** from each category. (10)
OR
(a) What do you mean by shortening value of fats?
(b) Why is refining of fats done and how? (5+5=10)
- Q.6. (a) Define food science. What is its scope?
(b) Name and define **any five** fields of science related to food science. (5+5=10)
- Q.7. Explain functional properties of proteins under the following:
(i) Gelation
(ii) Emulsification
(iii) Formability
(iv) Viscosity (4x2 ½ =10)
OR
Explain in detail the process of Denaturation and Coagulation of proteins with the help of suitable examples. (10)
- Q.8. Give short answers (**any two**):
(a) What do you mean by Pasteurization? How is it done?
(b) What do you mean by nutritive values, sanitary value and keeping quality of food?
(c) What is flavour and what gives flavour in garlic, chillies and wine? (2x5=10)

Q.9. **A** Name the following (**any five**):

- (i) Enzyme responsible for enzymatic browning
- (ii) Natural emulsifying agent present in egg
- (iii) Linkage of amino acids
- (iv) Flavour present in butter
- (v) Obnoxious odour and flavour in fats and oils
- (vi) Water oozing out of starch gel

(5x1=5)

B Give reasons for the following (**any two**):

- (a) Fat is used in making puff pastry.
- (b) Mixture of vinegar and oil separates on standing.
- (c) Lemon juice must be poured over cut apples.
- (d) Scum is formed over milk.

(2x 2 ½ =5)

Q.10. Match the following:

- | | |
|--------------------|-------------------------|
| (a) Acrolein | (i) Micelle Formation |
| (b) Rheology | (ii) Syneresis |
| (c) Emulsions | (iii) Maillard Reaction |
| (d) Weeping of Gel | (iv) Taste evaluation |
| (e) Caffeine | (v) Enzyme |
| (f) Heterogeneous | (vi) Coffee |
| (g) Caramel | (vii) Flowing ability |
| (h) Triangle Test | (viii) Smoking of fat |
| (i) Soufflés | (ix) Colloids |
| (j) Papain | (x) Egg foam |

(10x1=10)
