

**GUJARAT TECHNOLOGICAL UNIVERSITY****BE - SEMESTER– III (New) EXAMINATION – WINTER 2019****Subject Code: 3131406****Date: 30/11/2019****Subject Name: Food Chemistry****Time: 02:30 PM TO 05:00 PM****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Write a note on “Safety of Food Additives”. **03**  
(b) Define essential amino acids and give any six examples of essential amino acids. **04**  
(c) Give the detailed classification of food proteins. **07**
- Q.2** (a) Define following **03**  
1. Iodine Value 2. Triglyceride 3. Electrophoresis  
(b) Write in brief about ‘Simple Lipids’ **04**  
(c) Describe the effect of water activity on biochemical processes of foods. **07**
- OR**
- (c) Discuss the properties and applications of followings with suitable examples. **07**  
i. Humectant ii. Antioxidants
- Q.3** (a) Introduce briefly ‘unsaturated fatty acid’ with suitable example. **03**  
(b) What do you mean by protein denaturation? **04**  
(c) State different types of monosaccharide and discuss properties and applications of any one monosaccharide. **07**
- OR**
- Q.3** (a) Differentiate between oils and fats **03**  
(b) Briefly introduce the followings with two examples of each. **04**  
1. Conjugated protein  
2. Saturated fatty acid  
(c) Explain the effect of chemical structure of water and ice on their properties. **07**
- Q.4** (a) Define carbohydrates and state the importance of carbohydrate in human diet. **03**  
(b) Enlist chemical properties of lipids and explain any one **04**  
(c) Describe various techniques used to determine molecular weight and homogeneity of proteins **07**
- OR**
- Q.4** (a) Comment on “Omega 3 fatty acid”. **03**  
(b) Explain different types of water found in food system. **04**  
(c) Explain in detail about classification of carbohydrates. **07**
- Q.5** (a) State the properties of invert sugar. **03**  
(b) Explain the role of maltodextrin in manufacturing of fruit powders. **04**  
(c) Discuss the properties of compound lipids in detail. **07**
- OR**
- Q.5** (a) Write a brief note on ‘Cholesterol’ **03**  
(b) Highlight on the functions of food additives. **04**  
(c) Write short notes on: **07**  
i. Starch gelatinization  
ii. Food gums.

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