

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-III (New) EXAMINATION – WINTER 2018

Subject Code: 2131406

Date: 12/12/2018

Subject Name: Food Chemistry

Time: 10:30 AM TO 01:00 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) Give two examples of each of following **06**
 1. Essential amino acids
 2. Saturated fatty acids
 3. Simple proteins
- (b) Define carbohydrates and state the importance of carbohydrate in human diet. **04**
- (c) Write a note on “Water activity of Foods” **04**
- Q.2** (a) Differentiate between oils and fats **03**
 (b) Describe the biological functions of food proteins **04**
 (c) Enlist the different monosaccharides and explain properties and applications of any one monosaccharide with structural formula. **07**
- OR**
- (c) Describe the phenomena of starch gelatinization and retrogradation. **07**
- Q.3** (a) Write a brief note on ‘unsaturated fatty acid’ **03**
 (b) Comment on “Protein electrophoresis” **04**
 (c) Give the detailed classification of amino acids. **07**
- OR**
- Q.3** (a) Write a note on types of water in food **03**
 (b) Describe three dimensional network theory of gel formation **04**
 (c) Explain different physical properties of lipids **07**
- Q.4** (a) Describe the role of salt in food preservation. **03**
 (b) Explain the role of maltodextrin in manufacturing of fruit powders. **04**
- (c) What is polysaccharide? Enlist the different polysaccharides and state their functions in foods. **07**
- OR**
- Q.4** (a) What are the ideal characteristics of food additives? **03**
 (b) Mention the role of various gums in food products. **04**
 (c) Describe of following food additives: **07**
 1. Anticaking agent 2. Emulsifier
- Q.5** (a) Write a note on “Secondary levels of protein structure.” **03**
 (b) Describe various chemical properties of proteins **04**
 (c) Explain thermo-gravimetric methods used for determination of moisture in food **07**
- OR**
- Q.5** (a) Write a brief note on ‘Cholesterol’ **03**
 (b) Explain the phenomena of protein denaturation **04**
 (c) Describe the effect of reducing water activity on various biochemical processes in food **07**