

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER– III (New) EXAMINATION – WINTER 2019

Subject Code: 2131406

Date: 5/12/2019

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.**

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| Q.1 | (a) Differentiate between oils and fats | 03 |
| | (b) Define following | 04 |
| | 1. Saturated fatty acid | 2. Rancidity |
| | 3. Saponification value | 4. Isoelectric pH |
| | (c) Explain thermo-gravimetric methods used for determination of moisture in food | 07 |

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| Q.2 | (a) State the ideal characteristics of food additives. | 03 |
| | (b) Write a note on types of water in food | 04 |
| | (c) Describe of following food additives: | 07 |
| | 1. Anticaking agent 2. Emulsifier | |

OR

- (c) Describe the effect of water activity on biochemical processes of foods. 07

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| Q.3 | (a) Define essential amino acids and give any four examples of essential amino acids. | 03 |
| | (b) Define water activity and state how it affects on shelf life of foods | 04 |
| | (c) Give the detailed classification of food proteins. | 07 |

OR

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| Q.3 | (a) Write a short note on triglycerides | 03 |
| | (b) Describe the biological functions of food proteins | 04 |
| | (c) Describe the effect of chemical structure of water and ice molecule on their properties. | 07 |

- Q.4** (a) What is hexose sugar? State the properties of invert sugar. **03**
 (b) Explain the role of sugar in preservation of jam. **04**
 (c) Write short notes on: **07**
 1. Role of invert sugar in processed products
 2. Industrial utilization of starch

OR

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| Q.4 | (a) Explain the role of maltodextrin in manufacturing of fruit powders. | 03 |
| | (b) Define monosaccharide and explain any one in detail with chemical structure. | 04 |
| | (c) Define and explain the different types of food preservatives. | 07 |

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| Q.5 | (a) Explain “Primary level of protein structure.” | 03 |
| | (b) Write in brief about ‘Simple Lipids’ | 04 |
| | (c) What do you mean by denaturation of protein?, explain factors responsible for denaturation and effects of protein denaturation | 07 |

OR

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| Q.5 | (a) | Comment on “Protein electrophoresis” | 03 |
| | (b) | Describe three dimensional network theory of gel formation | 04 |
| | (c) | Explain different physical properties of lipids | 07 |
