

GUJARAT TECHNOLOGICAL UNIVERSITY**BE SEM-III Examination-Dec.-2011****Subject code: 131401****Date: 20/12/2011****Subject Name: Food Chemistry****Time: 2.30 pm -5.00 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) Enlist the different hexose sugars and discuss characteristics of any one. **05**
(b) Discuss the need of food additives. **05**
(c) Enlist major protein sources with their percent content. **04**
- Q.2** (a) Do as directed: **07**
(I) Draw structural formula of Tryglyceride.
(II) Glutenin and zein are examples of -----.
(III) Maillard reaction take place between ----- and ----- molecules.
(IV) Draw a general structural formula of amino acids.
(V) On heating most of the protein get -----.
(VI) Draw structure of C16:1(Δ 8) cis fatty acid.
(VII) What is commercial product act as butter substitute?
(b) Enlist various methods moisture estimation and explain any one. **07**
- OR**
- (b) Enlist explain the various methods of starch hydrolysis. **07**
- Q.3** (a) Explain the properties of starch. **07**
(b) What are significances of lipid in animal diet? **04**
(c) Write at least three chemical characteristics of lipids. **03**
- OR**
- Q.3** (a) Explain myoglobin and haemoglobin. **07**
(b) Explain how melting point characteristic of lipids vary with its constitutes **04**
(c) Write nutritional classification of amino acids with suitable examples for each class. **03**
- Q.4** (a) Enlist various properties that will change on denaturation of proteins. **05**
(b) Discuss rancidity causes and consequences. **05**
(c) Write functions, sources and deficiency diseases of Ca and Fe. **04**
- OR**
- Q.4** (a) How saturated fatty acids differ from unsaturated fatty acids **05**
(b) Explain functionality of proteins in food **05**
(c) Write the functions of agar, cargeenan and locust bean gum. **04**
- Q.5** (a) Define food additives and explain the selection criteria of food additives. **05**
(b) Explain flavonoids in detail. **05**
(c) Write the applications of leavening and anticaking agents. **04**
- OR**
- Q.5** (a) Enlist class-I and class-II preservatives and state their significance. **05**
(b) Enlist various methods to control water activity in food and explain any one. **05**
(c) Enlist different types of pigment and state their respective colours. **04**