

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

B. E. - SEMESTER – III • EXAMINATION – WINTER 2012

Subject code: 131401

Date: 07-01-2013

Subject Name: Food Chemistry

Time: 10.30 am – 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) Explain the role of invert sugar in various foods. **05**
(b) Give classification of proteins with suitable example. **05**
(c) Write the importance of sugar alcohols in diets. **04**
- Q.2** (a) Give the answer in one-two sentence only **07**
(I) Draw structural general formula of simple lipid.
(II) Draw structure of cis and trans double bond in fatty acid molecule.
(III) Reaction between reducing sugars and amino groups in food at high temperature is call-----.
(IV) Define essential amino acids.
(V) On addition of acid in milk lead to milk protein get -----.
(VI) ----- value of chemical properties is indicate the extent of rancidity in oil.
(VII) Give name of proteins present in wheat are -----,-----.
(b) Explain the properties of starch. **07**
- OR**
- (b) Explain NMR method to estimate the moisture content of food. **07**
- Q.3** (a) Explain the properties of different hexose sugars. **07**
(b) Define terms: i-Saponification Value, ii-Rancidity, iii-Amino Acids, iv- Protein denaturation, v-Essential fatty acid **04**
(c) Enlist name of three amino acids with their respective functional group. **03**
- OR**
- Q.3** (a) Explain chlorophyll in detail. **07**
(b) Discuss methods of lipid extraction from oil seeds. **04**
(c) Write functions of proteins in human diet. **03**
- Q.4** (a) Differentiate between saturated and unsaturated fatty acids. **05**
(b) Discuss lipid modified products available in markets. **05**
(c) Give the detail classification of pigments. **04**
- OR**
- Q.4** (a) Enlist impurities in crude oil extracted from oil bearing tissues (seeds) and give method employed for removal of such impurities respectively. **05**
(b) Explain gel formation theories in protein denaturation. **05**
(c) Explain the significance of Class – I preservatives. **04**
- Q.5** (a) Write the sources of Ca & Fe and deficiency diseases caused by these minerals. **05**
(b) Explain the role of chelating agents. **05**
(c) Write the short notes on tannin and betalains. **04**
- OR**
- Q.5** (a) Explain flavonoids in detail. **05**
(b) Explain the role of anticaking agents in salt. **05**
(c) Write the functions of water. **04**
