Seat No.:	Enrolment No.

## GUJARAT TECHNOLOGICAL UNIVERSITY BE - SEMESTER-III(NEW) • EXAMINATION – SUMMER 2015

Subject Code: 2130404 Date:04/06/2015 **Subject Name: Fundamentals of Chemistry** Time: 02.30pm-05.00pm **Total Marks: 70 Instructions:** 1. Attempt all questions. 2. Make suitable assumptions wherever necessary. 3. Figures to the right indicate full marks. **Q.1** What is a fission reaction? Explain homolytic fission with general scheme. 07 (a) What are reactive intermediates? Explain Resonance and Inductive effect. **(b)** 07 What is meant by the term Hydrocarbon? Explain various types of hydrocarbons **Q.2** (a) 07 with examples. **(b)** Write short notes on: 07 (i) Carbo cation (ii) Hyper conjugation OR Explain organic reaction. Classify different types of organic reactions along with **07** suitable examples. **Q.3** Explain nitration in detail with examples. 07 (a) What is carboxylic acid? Explain preparation, property and manufacturing 07 process of acetic acid. OR Explain nitration and sulphonation processes with suitable examples. **Q.3** (a) 07 Explain amination and oxidation processes with suitable examples. 07 **(b)** What are carbohydrates? Classify carbohydrates giving examples. 07 **Q.4** (a) Give manufacturing process of Glucose along with its properties and uses. 07 **(b) Q.4 07** (a) Write short notes on: (i) Optical isomerism (ii) Enantiomers Write short notes on: 07 (i) Optical activity of lactic acid (ii) Chromatography What are amino acids? Classify amino acids with suitable examples. Q.5 **07** (a) What are proteins? Classify proteins on the basis of their applications. **07 (b) Q.5** What is colour? Explain theory of colours in detail. 07 (a) What is dye? Classify dyes on the basis of its application. **(b) 07** 

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