

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-III (New) EXAMINATION – WINTER 2018****Subject Code: 2130404****Date: 12/12/2018****Subject Name: Fundamentals of Organic 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) Define: 1) Fission Reaction 2) Free Radical **03**
 (b) What are carbohydrates? Classify carbohydrates giving examples. **04**
 (c) Explain organic reaction. Classify different types of organic reactions **07**
- Q.2** (a) What are reactive intermediates? Explain carbocation and carboanion in detail. **03**
 (b) Give the synthesis of Congo red. **04**
 (c) What are dyes? Classify them on the basis of their applications. **07**
- OR**
- (c) Write a short note on Electron Displacement. **07**
- Q.3** (a) Explain Hyper consumption. **03**
 (b) Write a short note on polymerization process. **04**
 (c) What is meant by the term unit process? Explain nitration and amination with suitable examples. **07**
- OR**
- Q.3** (a) Explain unit process of oxidation in detail. **03**
 (b) What is Esterification? Explain esterification with its mechanism and illustrations. **04**
 (c) Explain preparation, property and manufacturing process of acetic acid. **07**
- Q.4** (a) Draw the structure of DNA and RNA. **03**
 (b) Write a note on preparation and properties of carboxylic acids. **04**
 (c) Enlist manufacturing of Cane Sugar from Sugarcane with flow sheet diagram. **07**
- OR**
- Q.4** (a) Give the synthesis of Phenolphthalein. **03**
 (b) What are proteins? Classify them on the basis of structures. **04**
 (c) What is isomerism? Explain optical isomerism in detail. **07**
- Q.5** (a) Enlist methods for the Resolution of racemic mixture in detail. **03**
 (b) Explain the application of Polarimeter. **04**
 (c) What are Amino acids? Mention classification of Amino acids. **07**
- OR**
- Q.5** (a) Explain Lambert Beer Law. **03**
 (b) Discuss Thermo Gravimetric (TGA) Analysis in brief. **04**
 (c) What is Chromatography? Explain GC and HPLC. **07**
