

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER-III (NEW) EXAMINATION – WINTER 2017
Subject Code: 2132805
Date: 21/11/2017
Subject Name: 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) Write Aufbau, Hund and Pauli's principles for electronic configuration of any element. **03**
 (b) Differentiate between Homolytic and Heterolytic bond fission. **04**
 (c) Give an account of different types of organic reactions with examples. **07**
- Q.2** (a) Define : (1) Electronegativity (2) Chirality (3) Isomerism **03**
 (b) Differentiate between electrophilic and nucleophilic reagents. **04**
 (c) What do you understand by Diazotisation reaction? Explain coupling reactions of aryldiazonium salts with different phenols. **07**
- OR**
- (c) Explain polarity of covalent bonds and its connection with dipole moment. **07**
- Q.3** (a) Describe functional isomerism with suitable examples. **03**
 (b) Write any four nucleophilic substitution reactions of alkyl halides. **04**
 (c) How will you describe geometrical isomerism with proper examples? **07**
- OR**
- Q.3** (a) What are the general physical properties of esters? **03**
 (b) How will you check optical activity of a molecule by using polarimeter? **04**
 (c) How will you prepare amides by different methods? **07**
- Q.4** (a) Write and explain Huckle Fule for aromaticity. **03**
 (b) How Formic acid can be prepared from Formaldehyde and Oxalic acid? What are the uses of Formic acid? **04**
 (c) Describe important electrophilic substitution reactions of Anthracene. **07**
- OR**
- Q.4** (a) Write only equations with necessary reaction conditions of Bromination, Nitration and Sulphonation of Aniline. **03**
 (b) With important reaction conditions show how Pyridine will undergo electrophilic substitution reaction with KNO_3 , H_2SO_4 , Br_2 ? **04**
 (c) Describe chemistry of Toluene. **07**
- Q.5** (a) Write only equations with necessary reaction conditions of any three methods of preparation of Pyrrole. **03**
 (b) What do you understand by Heterocyclic compounds? Give examples of five and six member heterocyclic compounds with structures. **04**
 (c) How will you identify given unknown organic compound in laboratory? **07**
- OR**
- Q.5** (a) What are the uses of Urea? **03**
 (b) Compare aldehydes with ketones. **04**
 (c) How different organic solids can be purified by different methods? **07**
