

GUJARAT TECHNOLOGICAL UNIVERSITY**BE - SEMESTER-III (NEW) - EXAMINATION – SUMMER 2017****Subject Code: 2133501****Date: 31/05/2017****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. Short Questions :** **14**
1. Define Resolution.
 2. Give the reaction of benzene with Nitrating mixture.
 3. Define Electrophile.
 4. Give IUPAC name of $\text{CH}=\text{CH}-\text{CH}(\text{NO}_2)-\text{CH}=\text{CH}-\text{CH}_2-\text{CHO}$
 5. Which is the temperature for Diazotization reaction?
 6. What do you mean by Grignard reagent?
 7. Give IUPAC name for Glycerol.
 8. Define Non classical carbonium ion.
 9. Draw the structure of BHC and give its IUPAC name.
 10. Draw two conformers of cyclohexane.
 11. Give Markonikov rule.
 12. Define inductive effect.
 13. Which is the highest electronegative atom ?
 14. What are the different arrows used to show a chemical reaction?
- Q.2** (a) Explain the difference between E1 and E2 mechanism. **03**
- (b) Explain generation and stability of carbanion. **04**
- (c) Explain the generation , stability and reactions of carbonium ion. **07**
- OR**
- (c) Explain SN1 mechanism in detail. **07**
- Q.3** (a) Write the mechanism of Benzidine rearrangement. **03**
- (b) Explain : Hyperconjugation and Resonance. **04**
- (c) Explain SN2 mechanism in detail. **07**
- OR**
- Q.3** (a) Explain the importance of knowing mechanism of any chemical reaction. **03**
- (b) Give reactions of free radicals. **04**
- (c) Explain Pincol-Pinacolone reaction with mechanism. **07**

- Q.4** (a) Explain Stereoisomerism in Tartaric acid. **03**
(b) Give the reactions of Bromobenzene with Ethyl bromide, KNH_2 , Ni-Al/NaOH and Mg/ether . **04**
(c) Draw a detailed flowsheet for chemical reactions of Phenol. **07**

OR

- Q.4** (a) Write the mechanism of Benzidine rearrangement. **03**
(b) Explain generation and stability of carbocation. **04**
(c) Give the methods of synthesis of aromatic amines? Give the reactions of aniline with (i) Acetyl chloride (ii) Benzaldehyde (iii) Methyl iodide (iv) BDC (v) Potassium Dichromate **07**

- Q.5** (a) Explain the importance of Hydrogenation reaction in organic synthesis. **03**
(b) Explain conformers of Ethane. **04**
(c) Explain mechanism of Hydroboration-oxidation reaction. **07**

OR

- Q.5** (a) Explain Ozonolysis **03**
(b) Explain Conformers of Ethane. **04**
(c) Explain Meso compounds and write a note on different methods of resolution. **07**

.....