Seat No.: _____ Enrolment No._____

# GUJARAT TECHNOLOGICAL UNIVERSITY

**BE - SEMESTER–III(New) EXAMINATION – SUMMER 2016**

**Subject Code:2133501** **Date:09/06/2016**

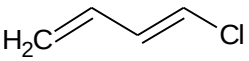
**Subject Name:Organic Chemistry**

**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 Nucleophile.
**2.** Give Markonikov rule.
**3.** Draw the structure of Resorcinol.
**4.** Define Resolution.
**5.** What is nitrating mixture?
**6.** Which is the temperature for Diazotization reaction?
**7.** Which are the conformers of cyclohexane?
**8.** What is the product of bond fission?.
**9.** Draw the structure of Benzoic acid and give its IUPAC name.
**10.** Define inductive effect.
**11.** Write the reaction of aldol reaction.
**12.** What type of isomerism is shown by Butanol and Diethyl ether.
**13.** Give IUPAC name of 

**14.** Define Racemic mixture.

**Q.2 (a)** Explain : Tautomerism. **03**
**(b)** Explain Cross aldol reaction . **04**
**(c)** Explain the detailed flow sheet for chemical reactions of phenol
**OR** **07**
**(c)** How will you synthesize Nitroaromatic compounds? Give their chemical reactions.

**Q.3 (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**

**OR**

**Q.3 (a)** Explain the difference between E1 and E2 mechanism. **03**
**(b)** Explain generation and stability of carbanion. **04**
**(c)** Explain SN1 mechanism in detail. **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)** Explain the mechanism of Pinacol-Pinacolone rearrangement. **07**

**OR**

| | | | |
|---|---|---|---|
| **Q.4** | **(a)** | Explain Hofmann reaction. | **03** |
| | **(b)** | Give the reactions of Chlorobenzene with Chlorine, NaOH under drastic conditions, Nitrating mixture, Sulphuric acid/oleum. | **04** |
| | **(c)** | Explain Friedel craft reaction and give its applications. | **07** |
| **Q.5** | **(a)** | Explain the importance of Hydrogenation reaction in organic synthesis. | **03** |
| | **(b)** | Explain conformers of Ethane. | **04** |
| | **(c)** | Explain Grignard reaction in detail with proper mechanism and examples. | **07** |

**OR**

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|---|---|---|---|
| **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** |

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