

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER– IV(NEW) EXAMINATION – SUMMER 2015

Subject code: 2143606**Date: 05/06/2015****Subject Name: Advance Organic Chemistry for Technologists****Time: 10:30am-1.00pm****Total Marks: 70****Instructions:**

1. Attempt all questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Define Aromaticity. Explain Huckel rule in detail showing the behavioral approach of different Organic molecules in proving their aromatic characteristics. **07**
- (b) Explain in detail with mechanism of following: **07**
- (i) Bayer Villiger Reaction
 - (ii) Wittig Reaction

- Q.2** (a) Distinguishing SN1 and SN2 reactions, Explain the mechanism of nucleophilic attack on substrate during course of reaction. **07**
- (b) Explain in general the reaction involved in Aromatic Phenol formation along with different properties. **07**

OR

- (b) Explain in general the reaction involved in Aromatic Nitro derivative formation along with different properties. **07**

- Q.3** (a) Discuss in detail Elimination reaction and explain following **07**
- (i) Removal of Halogen acid from Alkyl halide
 - (ii) Dehydrations of Alcohols
- (b) Explain in detail with mechanism of following: **07**
- (i) Bayer Venkatraman Reaction
 - (ii) Mannich Reaction

OR

- Q.3** (a) Explain Electrophilic Aromatic Substitution reaction with special emphasis on Friedel Craft Alkylation and Acylation. **07**
- (b) Detail the rule involved in IUPAC for the nomenclature of simple Aromatic cyclic, bicyclic and polycyclic hydrocarbons. **07**

- Q.4** (a) Write in detail the reactions involved in synthesis and properties of Furan and Thiophene. **07**
- (b) Explain Hydroboration addition reaction for C-C, C-N, C-C double bond and C-C triple bonded compounds. **07**

OR

- Q.4** (a) Write in detail the reactions involved in synthesis and properties of Pyrrole and Pyridine. **07**
- (b) Explain oxidation reaction rearrangement of converting Acetone to Pinacol to Pinacolone and further Trimethyl acetic acid. **07**

- Q.5** (a) Explain in detail the Curtius rearrangement with atleast one example of isocyanate utility in polymerization. **07**
- (b) Explain the different reactions involved in formation and properties of **07**

OR

- Q.5** (a) Explain in detail the Diels Alder reaction with atleast one example of its utility in Steroids. **07**
- (b) Explain in detail the biological importance due to presence of one, two and poly hetero atoms in Heterocyclic compounds. **07**
