Seat No.: _____ **Enrolment No._____**

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–IV (OLD) - EXAMINATION – SUMMER 2017

Subject Code: 143501 **Date: 01/06/2017**

Subject Name: Organic Chemistry for Technologists-II

Time: 10:30 AM to 01:00 PM **Total Marks: 70**

Instructions:

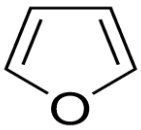
1. **Attempt all questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

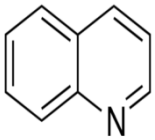
Q.1 **(a)** Explain Pinacol-Pinacolone rearrangement with mechanism. **07**

(b) Explain why, **07**

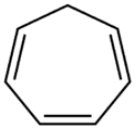
a. Methyl group ($-CH_3$) acts as ortho-para director.
b. Nitro group ($-NO_2$) acts as meta director.

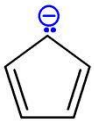
Q.2 **(a)** 1.Give IUPAC and general names of the following compounds **04**

a. 

b. 

2.State whether the following compounds are aromatic or non-aromatic. **03**

a. 

b. 

c. 

(b) Explain Benzidine rearrangement with mechanism. **07**

OR

(b) Write a note on: Reduction of Nitro aromatic compound. **07**

Q.3 **(a)** How is Pyrrole synthesized? Describe its important reaction **07**

(b) Write Skraup synthesis. Give the uses of Furfural **07**

OR

Q.3 **(a)** Explain why, **07**

1. Pyridine is more basic than pyrolle.
2. Pyridine is less basic than aliphatic amine.
3. Pyridine is more basic than aniline.

(b) Give only chemical reaction for following: **07**

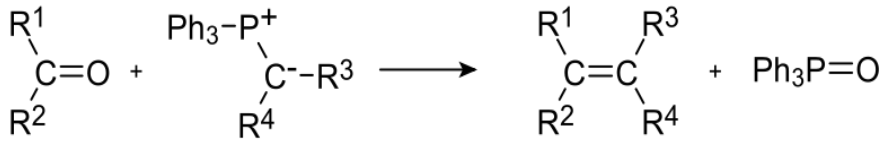
a. Benzene → Aniline
b. Toluene → Chloramine-T

Q.4 **(a)** Explain Birch reduction with mechanism. **07**

(b) Explain Pinner reaction with mechanism. **07**

OR

Q.4 **(a)** Name the following reaction and Explain its mechanism & application in detail. **07**



(b) Write a note on: Baeyer-Villiger oxidation reaction with mechanism. **07**

Q.5 **(a)** How will you convert phenol into:

a. Salicylic acid. **04**

b. Salicylaldehyde. **03**

(b) 1. How will you synthesize DDT from Chlorobenzene? **04**

2. How will you synthesize Saccharin from Toluene? **03**

OR

Q.5 **(a)** How does aniline react with; **07**

(a)Acetic anhydride (b)Bromine water (c)Benzaldehyde

(d)Conc. H_2SO_4 at 180^0C (e)Acetyl chloride

(f)Nitrous acid at $0^0$to 5^0C(g)Chloroform and alc. KOH

(b) 1. Compound (A) C_6H_6O is soluble in NaOH when treated with $CHCl_3$ & NaOH, it forms (B) (Reimer-Tiemann reaction). Compound (B), an oxidation gives (C) which reacts with acetic anhydride in the presence of a small amount of H_2SO_4 to form (D), $C_9H_8O_4$. Deduce the structural formulas of (A), (B), (C) & (D). Write equation for the reaction involved. **04**

2. How will you distinguish between N-methylaniline and N, N-dimethylaniline? **03**

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