Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–III(New) • EXAMINATION – WINTER 2016

Subject Code:2133605 **Date:04/01/2017**

Subject Name:Organic Chemistry for Technologists

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.**

MARKS

Q.1 **Short Questions** **14**

1 Define the term carbenes.

2 Draw the structure for 2, 2-di (p-Chlorophenyl)-1, 1, 1-trichloroethane.

3 Hemolytic fission of covalent bond leads to the formation of_____.

4 Give the structure of Chloramine – T.

5 Anisole is formed when phenol is treated with _____.

6 Give the structural formula of Sulphanilamide.

7 Give IUPAC name of $(CH_3CH_2)_3CCN$.

8 How many isomeric dichlorobenzene?

9 Hydrolysis of Benzal chloride gives_____.

10 CH_3OH, $AlCl_3$, NH_3 and CH_3OCH_3, which is a Lewis acid?

11 _____test is used to distinguish Aniline and N-methyl aniline.

12 Phenol, Resorcinol and catechol; Rank these molecules in decreasing order of boiling points.

13 Draw the structure of 1-ethoxy-1-propanol.

14 Define Cannizzaro reaction.

Q.2 **(a)** Why benzyl carboniumion is more stable than ethyl carboniumion? **03**

(b) What is essential difference between a free radical reaction and an ionic reaction? **04**

(c) Explain Aldol and Cross aldol reaction with mechanism **07**

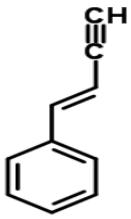
OR

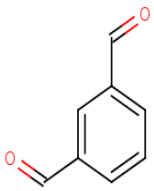
(c) Write a note on: Ardnt-Eister reaction with mechanism. **07**

Q.3 **(a)** Write a note on: Saccharin **03**

(b) Write the IUPAC names for each of the following compounds: **04**

a. $CH_3CH_2COCH_2CH_2COOCH_3$ b. $CH_3CH_2CH(OCH_3)CH_2COCl$

c. 

d. 

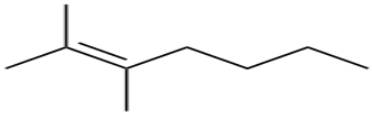
(c) What products are obtained by reduction of nitrobenzene under different conditions? **07**

OR

Q.3 **(a)** How will you convert benzene to benzyl alcohol? **03**

(b) Write the IUPAC names for each of the following compounds: **04**

a. 

b. 

c. $OHCCH_2CH_2CHO$ d. $HC{\equiv}CCH_2CH{=}CH_2$

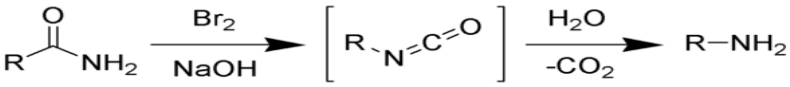
(c) Distinguish between SN^1 and SN^2 reaction with mechanism? **07**

Q.4 (a) How will you synthesis benzylamine from benzenesulfonic acid? **03**

(b) Explain why, **04**

a. p-Nitrophenol is a stronger acid than phenol?
b. o-Nitrophenol is steam volatile whereas p-Nitrophenol is not?

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



OR

Q.4 (a) Two isomeric compounds (A) and (B) have molecular formula C_7H_8O. Compound (A) readily dissolves in aqueous NaOH, but compound (B) does not. Compound (A) is insoluble in aqueous $NaHCO_3$ and reacts with bromine water form (C), $C_7H_5OBr_3$. Identify (A), (B) and (C). **03**

(b) How will you convert Nitrobenzene into 4, 4'-Benzidine? **04**

(c) How does aniline react with; **07**

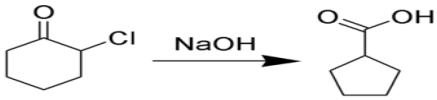
a. Acetic anhydride b. Bromine water c. Benzaldehyde
d. Conc. H_2SO_4 at 180^0C e. Acetyl chloride f. Nitrous acid at 0^0 to 5^0C.
g. Chloroform and alc. KOH

Q.5 (a) What is Inductive effect? Give one example of a system where this effect is operative. **03**

(b) Give only reaction for following conversion. **04**

a. Aniline →m-Nitroaniline
b. Aniline → p-Nitroaniline

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



OR

Q.5 (a) Explain Pinner reaction with mechanism. **03**

(b) Explain Baeyer Villiger oxidation reaction with mechanism. **04**

(c) Who were the pioneers of Alkylation & Acylation reaction? Explain its mechanism. **07**

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