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

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–III (NEW) - EXAMINATION – SUMMER 2017

Subject Code: 2133605 **Date: 02/06/2017**

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	Draw the structure of DDT.	
	2	Define the term: Mesomeric effect.	
	3	Name any one sulpha drug.	
	4	Which alkyl free radical is most stable?	
	5	$AlCl_3$, CH_3OH, NH_3—Which is a Lewis acid?	
	6	Define the term: free radical	
	7	--------test is used to distinguish primary and secondary amine.	
	8	Heterolytic fission of covalent bond leads to the formation of_____.	
	9	Draw the structure of 3-Hydroxy propanoic acid.	
	10	Isopropyl bromide reacts with alcoholic KOH to give ---------.	
	11	Define term: Saytzeff Rule.	
	12	Draw the structure of Chloramine T.	
	13	When phenol treat with neutral $FeCl_3$, it gives _____color.	
	14	Define term: Electrophiles	
Q.2	**(a)**	Write a note on: Saccharin	**03**
	(b)	How does aniline react with; 1.Acetic anhydride 2.Aldehyde 3.chloroform and alc.KOH 4.$NaNO_2$ at 0 to 5^0C	**04**
	(c)	Explain SN^1 and SN^2 with mechanism.	**07**
		OR	
	(c)	Explain Baeyer Villiger oxidation with mechanism.	**07**
Q.3	**(a)**	How will you synthesize alcohol using Grignard reaction?	**03**
	(b)	Compound A, C_6H_6O, is soluble in NaOH. When treated with $CHCl_3$ and 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 and D. Write equations for the reactions involved.	**04**
	(c)	Explain Aldol & cross Aldol reaction with example.	**07**
		OR	
Q.3	**(a)**	Write a short note on Inductive effect with example.	**03**

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

a. $C_3H_7COOCH_3$
b. $(CH_3)_2C{=}CHCH_2CH_2CHOHCH_3$
c. $CH_3CH_2CH(OCH_3)CH_2COCl$
d. $CH_3CH{=}CHCH_2OH$

(c)
a. Writ a short note on Stability of carbanion. **07**
b. Benzyl carbonium ion is more stable than ethyl carbonium ion- justify the statement with proper reason.

Q.4 **(a)** Write a short note on Hyperconjugation. **03**

(b) How will you convert; **04**
a. Phenol → p-Nitro phenol
b. Benzene → p-Nitro aniline

(c) How will you convert primary amide to primary amine? Give name of the reaction and explain its mechanism also. **07**

OR

Q.4 **(a)** Give use & synthesis of DDT. **03**

(b) Describe heterolytic fission of a covalent bond. How carbocations are formed? **04**

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

Q.5 **(a)** Write a short note on Diels-Alder reaction. **03**

(b) Draw structure corresponding to the following IUPAC names **04**

a. 4-Hexen-3-one
b. 3-Hydroxy-butane-1-oic acid
c. 3,5-Dimethyl-4-hexen-1-yne
d. 2,4-Pentane dione

(c) Explain Reformatsky reaction with mechanism. **07**

OR

Q.5 **(a)** Define Cannizzaro reaction. **03**

(b) Explain why, **04**
a. p-Nitro aniline is less basic than aniline?
b. p-Toluidine is more basic than aniline?

(c) Explain Arndt Eistert synthesis with mechanism. **07**

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