

Seat No.: _____

Enrolment No. _____

GUJARAT TECHNOLOGICAL UNIVERSITY

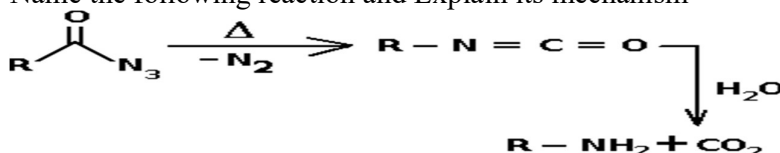
BE - SEMESTER-III (New) EXAMINATION – WINTER 2018

Subject Code: 2133605
Date: 01/12/2018
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 (a) Explain Ozonolysis reaction with example.	03
(b) Write a short note on Inductive effect.	04
(c) Explain SN^1 & SN^2 reaction with mechanism.	07
Q.2 (a) Explain only mechanism of diazotization reaction.	03
(b) Explain Markovnikov rule with example.	04
(c) Write a short note on following:	07
i. Stability of carbocation	
ii. Hyperconjugation	
OR	
(c) Who were the pioneers of Alkylation & Acylation reaction? Explain its mechanism.	07
Q.3 (a) Write a note on Saccharin.	03
(b) How does aniline react with;	04
1. Acetic anhydride	
2. Bromine	
3. Chloroform and alc. KOH	
4. $NaNO_2$ at 0 to 5°C	
(c) Explain Witting reaction with mechanism.	07
OR	
Q.3 (a) Give use & synthesis of DDT.	03
(b) Draw structure corresponding to the following IUPAC names:	04
i. 4-Hexen-3-one	
ii. 2-Butenal	
iii. 2-Methyl-4-oxopentanoic acid	
iv. 1-Ethoxy-1-propanol	
(c) Name the following reaction and Explain its mechanism.	07
$R-C(=O)OH \xrightarrow{SOCl_2} R-C(=O)Cl \xrightarrow{CH_2N_2} R-C(=O)-CH=N^+=N^- \xrightarrow[H_2O]{Ag_2O} R-CH_2-COOH$	
Q.4 (a) Write a short note on Diels-Alder reaction.	03
(b) Write the IUPAC names for each of the following compounds:	04
i. $CH_3CH_2CH(OCH_3)CH_2COCl$	
ii. $CH_3CH_2COCH_2CH_2COOCH_3$	
iii. $CH_3CH=CHCH_2OH$	
iv. $CH_2=CH-CH_2CH=CH_2$	
(c) Explain Aldol and Cross aldol reaction with mechanism.	07
OR	
Q.4 (a) Write a short note on Birch reduction.	03

- (b) How will you convert; 04
 a. Bromo benzene \rightarrow Benzoic acid
 b. Aniline \rightarrow p-Nitro aniline
- (c) How will you convert primary amide to primary amine? Give name of the reaction and explain its mechanism also. 07
- Q.5** (a) Explain Reformatsky reaction with mechanism. 03
 (b) Explain why, 04
 1. phenol is more acidic than ethyl alcohol.
 2. p-Toluidine is more basic than aniline.
- (c) Explain only mechanism of the following reaction: 07
 1. Benzillic acid rearrangement
 2. Baker Venkatraman reaction
- OR**
- Q.5** (a) Explain Canizzaro reaction with mechanism. 03
 (b) Compound A, $C_7H_5O_6N_3$, undergoes oxidation with acidified potassium dichromate to give a mono carboxylic acid B $C_7H_3O_8N_3$. When B is heated in acetic acid solution, C $C_6H_3O_6N_3$ is formed. Deduce the structural formulas of A, B and C. Write equations for the reactions involved. 04
- (c) Name the following reaction and Explain its mechanism 07



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