

GUJARAT TECHNOLOGICAL UNIVERSITY

BE- SEMESTER-V (NEW) EXAMINATION – WINTER 2020

Subject Code:3153622

Date:22/01/2021

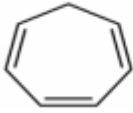


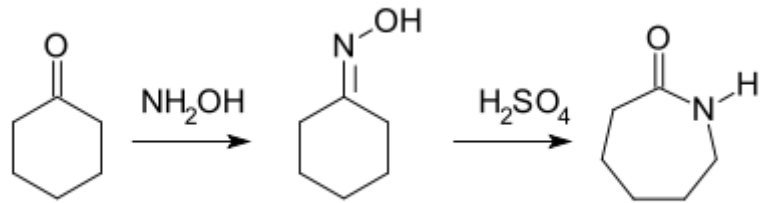
Subject Name:Chemical synthesis for Technologists

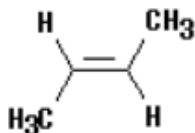
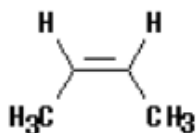
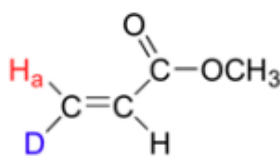
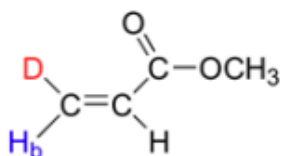
Time:10:30 AM TO 12:30 PM

Total Marks: 56

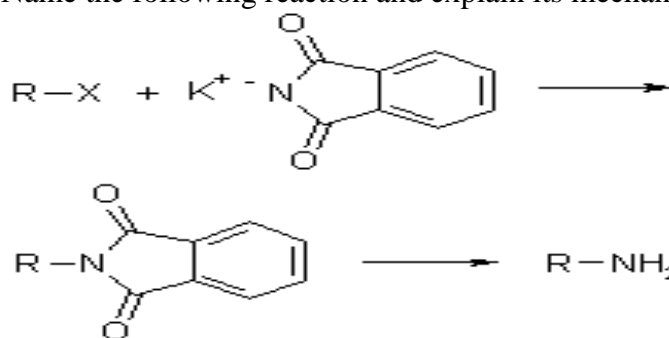
Instructions:

1. Attempt any **FOUR** questions out of **EIGHT** questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

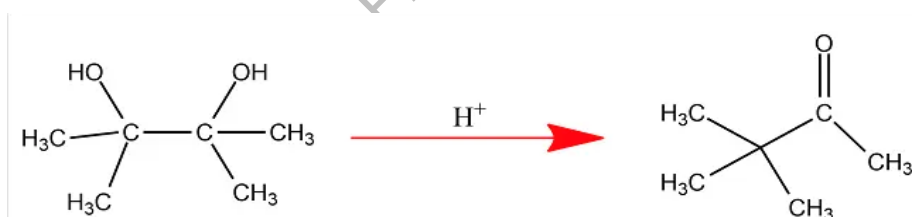
	MARKS
Q.1 (a) Write short note on Benzidine rearrangement.	03
(b) Write down Nucleophilic substitution reaction of Pyridine.	04
(c) Define Aromaticity. Explain Huckel rule in detail showing the behavioural approach of different Organic molecules in proving their aromatic characteristics.	07
Q.2 (a) State whether the following compounds are aromatic or non-aromatic.	03
a.  b.  c. 	
(b) Name the following reaction and explain its mechanism and application in detail.	04
	
cyclohexanone cyclohexanoxime caprolactam	
(c) Explain why,	07
1. Pyridine is more basic than pyrrole. 2. Pyridine is less basic than aliphatic amine. 3. Pyridine is more basic than aniline	
Q.3 (a) Explain Isomerism in substituted Naphthalene with example of it.	03
(b) Which of the following compound will exhibit optical activity?	04
1. Meso-2,3-Dihydroxybutane 2. Mixture of 1 gm of (+)-erythro-2-bromo-3-chloro butane & 0.5 gm (-)-erythro-2-bromo-3-chloro butane	
(c) Write detailed mechanism and applications of Darzens reaction.	07
Q.4 (a) Write a note on Annulene.	03
(b) Give E & Z Notation to the following:	04



- (c) Write detailed mechanism and applications of Rosenmund reaction. **07**
- Q.5** (a) Explain only mechanism of Leuckart reaction. **03**
 (b) Write methods of synthesis for Furan. **04**
 (c) Write detailed mechanism and applications of Knoevenagel condensation. **07**
- Q.6** (a) Name the following reaction and explain its mechanism and application in detail. **03**



- (b) Write down electrophilic substitution reaction of Pyrrole. **04**
 (c) Explain detailed mechanism of MPV reduction with one application. **07**
- Q.7** (a) Differentiate between Enantiomers and Diastereomers. **03**
 (b) Explain why, methyl (-CH₃ group) acts as ortho-para directing. **04**
 (c) Name the following reaction and explain its mechanism and application in detail. **07**



- Q.8** (a) Write a short note on Geometrical Isomerism. **03**
 (b) Write a note on: Opposite behaviour of Halogen group. **04**
 (c) Name the following reaction and explain its mechanism and application in detail. **07**

