Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

BE - SEMESTER–IV (New) EXAMINATION – WINTER 2015

Subject Code:2143607 **Date:19/12/2015**

Subject Name: Unit Processes in Organic Synthesis

Time: 2:30pm to 5:00pm **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)**	Answer the following: (i) What is absolute alcohol? (ii) Draw the structure of furan and pyridine. (iii) What do you understand by gel effect? (iv) Name any two nitrating agents. (v) What is transesterification? (vi) Give the reaction of acid catalyzed hydrolysis of ethyl acetate. (vii) Name any two chlorinating agents.	**07**
	(b)	With a neat diagram of Biazzi continuous nitrator, describe the process of nitration of hydrocarbon feed or polyhydric alcohol.	**07**
Q.2	**(a)**	Discuss the preparation, properties and uses of acetic acid.	**07**
	(b)	With a neat process flow diagram, describe the manufacture of aniline from phenol by ammonolysis.	**07**
		OR	
	(b)	Differentiate between sulfonation and sulfation. Cite two industrial applications of sulfonation and sulfation reactions and discuss about them briefly.	**07**
Q.3	**(a)**	Discuss the general preparation and properties of alcohols.	**07**
	(b)	Write a short note on thiols.	**07**
		OR	
Q.3	**(a)**	What is industrial alcohol? How is it manufactured?	**07**
	(b)	Write a short note on ethers and thioethers.	**07**
Q.4	**(a)**	Discuss the general properties of amines. Cite two industrial applications of amines and discuss about them briefly.	**07**
	(b)	How is formaldehyde prepared? Discuss about its properties and uses.	**07**
		OR	
Q.4	**(a)**	How is acetone prepared? Discuss about its properties and uses.	**07**
	(b)	Write a short note on polymerization of alkenes.	**07**
Q.5	**(a)**	Discuss the preparation, properties and uses of furan.	**07**
	(b)	Write a short note on biological importance of heterocyclic compounds.	**07**
		OR	
Q.5	**(a)**	Discuss the preparation, properties and uses of pyridine.	**07**
	(b)	What are sources of alkanes? Discuss any two industrial methods of manufacturing alkanes. State their applications.	**07**

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