

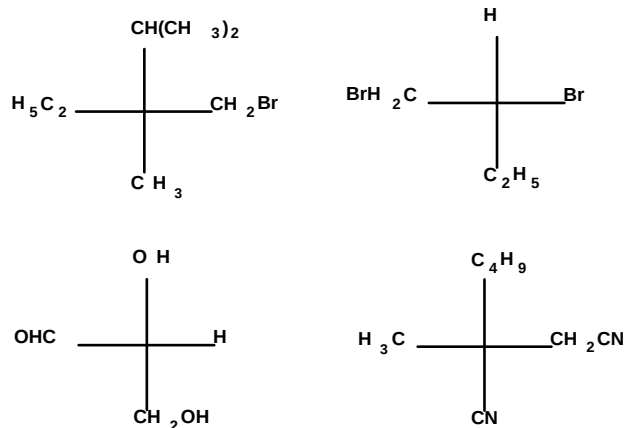
GUJARAT TECHNOLOGICAL UNIVERSITY
B. Pharm. – SEMESTER – IV • EXAMINATION – WINTER • 2014

Subject Code: 240003**Date: 29-12-2014****Subject Name: Pharmaceutical Chemistry - IV****Time: 02:30 pm - 05:30 pm****Total Marks: 80****Instructions:**

1. Attempt any five questions.
2. Make suitable assumptions wherever necessary.
3. Figures to the right indicate full marks.

- Q.1** (a) Enlist the different methods for the preparation of amines and explain Hofmann degradation method with mechanism. **06**
- (b) Give the detailed reaction and mechanism for nitration of benzene. **05**
- (c) Write a short note on Huckel's rule. **05**

- Q.2** (a) Give the R & S configuration to following compounds. **06**



- (b) Write a note on arenes. **05**
- (c) Enlist the different methods of preparation of aldehydes and explain any two of them. **05**
- Q.3** (a) Comment on the following statement. **06**
- i. Ketones are more reactive than aldehydes towards nucleophilic addition reaction.
 - ii. Halogens are meta- director groups towards electrophilic aromatic substitution reaction.
 - iii. Esters are more reactive than acid chlorides towards nucleophilic substitution reaction.
- (b) Explain the nucleophilic addition to α, β -unsaturated carbonyl compounds with example. **05**
- (c) What is racemic mixture? Write a short note on resolution of racemic mixture. **05**
- Q.4** (a) Give the following conversions. **06**
- i. Benzene to ethylbenzene
 - ii. Aniline to phenol
 - iii. Phenol to salicylic acid
 - iv. Malonic acid to 2-methylpropanoic acid
- (b) Describe the method for preparation of diazonium salt and explain their importance in organic synthesis with respect to sandmeyer's reaction. **05**

	(c)	Write a note on microwave synthesis.	05
Q.5	(a)	Define phenols, and explain any two methods for the synthesis of phenols.	06
	(b)	What is nucleophilic aromatic substitution reaction? Explain the bimolecular displacement mechanism with example.	05
	(c)	Which product would be formed from the reaction of benzoyl chloride with aniline, explain with mechanism.	05
Q. 6	(a)	Enlist the different methods for the synthesis of carboxylic acids and explain the Kolbe reaction.	06
	(b)	What is conformation? Draw all conformers of n-butane and comment on stability of each conformer.	05
	(c)	Give the structures and IUPAC name of the following compounds.	05
		i. Trifluoroacetic acid	
		ii. Anthranilic acid	
		iii. Diethyl oxalate	
		iv. Propyl acetate	
		v. Diethyl ketone	
Q. 7	(a)	I. The observed rotation of 2.0 gm of compound in 20 ml of solution in polarimeter 50 cm long tube is +13.4. What is the specific rotation of the compound?	06
		II. Explain the following terms. Stereoselective and stereospecific reactions	
	(b)	Write a short note on Reimer-Tiemann reaction.	05
	(c)	Write a short note on acetoacetic ester synthesis.	05
