Seat No.: _____ Enrolment No._____

GUJARAT TECHNOLOGICAL UNIVERSITY

B. Pharm. – SEMESTER – IV • EXAMINATION – SUMMER • 2015

Subject Code: 2240004 **Date: 03-06-2015**

Subject Name: Pharmaceutical Chemistry – VI (Organic Chemistry – II)

Time: 10:30 am - 01:30 pm **Total Marks: 80**

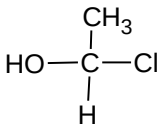
Instructions:

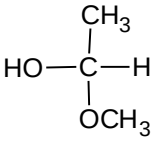
1. **Attempt any five questions.**
2. **Make suitable assumptions wherever necessary.**
3. **Figures to the right indicate full marks.**

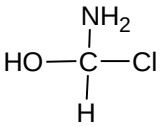
Q.1 **(a)** Define Stereoisomerism. Discuss it in detail with examples. **06**

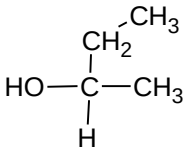
(b) How is indole synthesized? Describe its important reactions. **05**

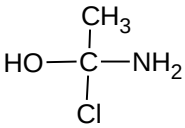
(c) Assign order of priority & R or S configuration to each of following compounds. **05**

1) 

2) 

3) 

4) 

5) 

Q.2 **(a)** Complete the following reactions. **06**

1) $H_3C—CH_2—CH_2—CHO \xrightarrow[H_2SO_4]{Na_2Cr_2O_7}$?

2) $H_3C—CH_2—CH_2—CHO \xrightarrow{H_2/Ni}$?

3) $H_3C—\overset{O}{\overset{\|}{C}}—CH_2—CH_3 \xrightarrow[H_2SO_4]{Na_2Cr_2O_7}$?

4) $H_3C—\overset{O}{\overset{\|}{C}}—CH_2—CH_3 \xrightarrow{H_2/Ni}$?

5) 

$+ KNO_3 \xrightarrow[300\ ^0C]{H_2SO_4}$?

6) 

$+ NaNH_2 \xrightarrow{100\ ^0C}$?

(b) Explain synthesis & reaction mechanism on Aldol Condensation. **05**

(c) What is green chemistry? Give brief principle of green chemistry. **05**

Q.3 **(a)** Differentiate Enantiomers & diastereomers. **06**

(b) Write short note on microwave synthesis. **05**

(c) Give atleast three method of preparation of carboxylic acids. **05**

Q.4 **(a)** Write a note on stereochemistry of Allenes & Biphenyl. **06**

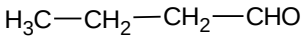
(b) Note on nucleophilic aromatic substitution reaction. **05**

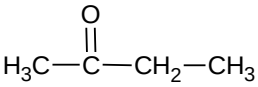
(c) Draw the structure of following i) Furan ii) Pyridazine iii) Pyrazine iv) Pyrrazole v) Isoxazole. **05**

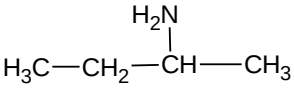
Q.5 **(a)** Give general method of preparation & chemical reaction of phenols. **06**

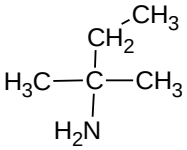
(b) Describe the preparation and properties of Imidazole. **05**

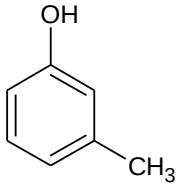
(c) Give the IUPAC name of following **05**

1) 

2) 

3) 

4) 

5) 

Q. 6 **(a)** Give at least one preparation & one chemical reaction of **06**
i)Pyrimidine ii) Thiophene

(b) Mention at least two preparation of unsaturated carbonyl compound. **05**

(c) Define the term **05**
i)Chiral center ii) Racemic Modification iii) Configuration
iv) Optical activity v) Nano Chemistry

Q.7 **(a)** How will you synthesize Quinoline and Isoquinoline? Write reaction mechanism of it. **06**

(b) Comment : **05**

i. Why pyridine undergoes electrophilic substitution reaction at 3-position.
ii. Why pyridine undergoes nucleophilic substitution reaction at 2-position.
iii. Pyridine is less basic than aliphatic amines.

(c) Write a note on conformational isomers of cyclohexane. **05**

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