Seat No.: _____ Enrolment No. _____

# GUJARAT TECHNOLOGICAL UNIVERSITY

**B.PHARM. Sem IV– • EXAMINATION – WINTER-2016**

**Subject Code: 2240004** **Date: 24/10/2016**

**Subject Name: Pharmaceutical Chemistry-VI (Organic Chemistry-II)**

**Time: 10.30am-1.30pm** **Total Marks: 80**

**Instructions:**

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

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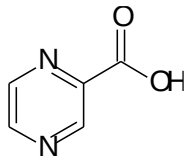
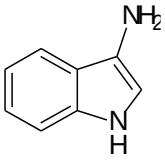
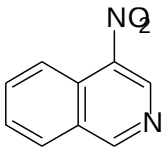
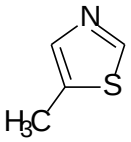
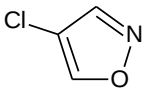
|---|---|---|---|
| **Q.1** | **(a)** | Discuss about twelve principles of green chemistry. | **06** |
| | **(b)** | Discuss on the following synthesis: (i) Pictet-Spenglar synthesis (ii) Conrad-Limpach synthesis | **05** |
| | **(c)** | Write the structure of the following compounds: (i) Pyrazole (ii) Pyridazine (iii) Isoquinoline (iv) Pyrimidine (v) Imidazole | **05** |
| **Q.2** | **(a)** | Write details on: (i) Skraup synthesis (ii) Paal Knorr synthesis | **06** |
| | **(b)** | Discuss the importance on microwave synthesis. | **05** |
| | **(c)** | Write the IUPAC name of the compounds: | **05** |

(i) 


(ii) 


(iii) 


(iv) 


(v) 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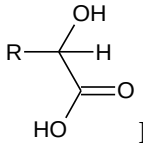
|---|---|---|---|
| **Q.3** | **(a)** | Differentiate between Enantiomers and Diastereomers with proper examples. | **06** |
| | **(b)** | How will you differentiate between aliphatic and aromatic amines. Give details on azo dye test & Hinsberg test. | **05** |
| | **(c)** | Explain the following: (i) Bischler-Naperialsky synthesis (ii) Madelung synthesis. | **05** |
| **Q.4** | **(a)** | Differentiate between optical isomerism & geometrical isomerism with proper examples. | **06** |
| | **(b)** | Which heterocyclic rings are produced with reaction: (i) Acetylene is reacted with ammonia (ii) acetylene is reacted with diazomethane? | **05** |
| | **(c)** | Define racemic mixture and its resolution methods. | **05** |
| **Q.5** | **(a)** | Give various methods for preparation of phenols. | **06** |
| | **(b)** | Write the conversion of the following compounds: (i) Phenol to salicylaldoxime (ii) Nitrobenzene to phenol | **05** |
| | **(c)** | Write a short note on nanochemistry. | **05** |

**Q. 6** **(a)** Name only the names of heterocyclic rings produced from the name reactions: **06**
(i) Fischer synthesis (ii) Hantzsch synthesis (iii) Conrad-Limpach synthesis (iv) Pictet-Spengler synthesis (v) Pfitzinger synthesis (vi) Reissert synthesis

**(b)** Discuss the importance of ionic liquid and atom economy in green chemistry synthesis. **05**

**(c)** Define chiral compounds and discuss about the isomerism generated from this. **05**




Locate the chiral point in the structure and write the name of compound when R=$CH_3$ and R=$C_6H_5$

**Q.7** **(a)** Focus on Stereochemistry of Allene, Spiran and Biphenyl. **06**

**(b)** Differentiate between Relative configuration and Absolute configuration. **05**

**(c)** Write the names of the following compounds: **05**
(i) Aromatic aldehyde & Aliphatic aldehyde (ii) Aromatic ketone & Aliphatic ketone (iii) Aromatic carboxylic acid & Aliphatic carboxylic acid (iv) Aromatic amine & Aliphatic amine (v) Aromatic enol & Aliphatic enol.

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