

GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER- IV EXAMINATION – WINTER 2013

Subject Code: 143501**Date: 19/12/2013****Subject Name: Organic Chemistry for Technologist -II****Time: 02:30-05:00****Total Marks: 70****Instructions:**

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

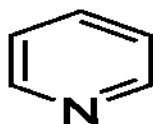
Q.1 (a) Explain Pinacol-Pinacolone rearrangement with mechanism. **07**

(b) Write a note on: **07**

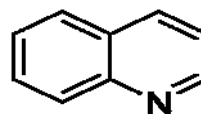
1. Directive influence of Nitro ($-\text{NO}_2$) group.
2. Directive effect of Methyl ($-\text{CH}_3$) group.

Q.2 (a) 1. Give IUPAC name for following compounds; **04**

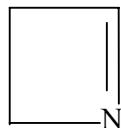
a.



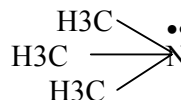
b.



c.

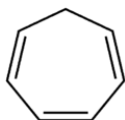


d.

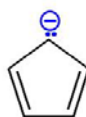


2. State whether the following compound are Aromatic or Non-Aromatic; **03**

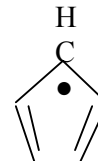
a.



b.



c.



(b) 1. Define: Sigmatropic reaction, Pericyclic reaction & Concerted reaction. **03**

2. How will you convert Nitrobenzene into 4, 4'-Benzidine? **04**

OR

(b) HBr add into a Propene, which reaction occurs? Explain it with mechanism. **07**

Q.3 (a) How does aniline react with; **07**

- | | | |
|---|--------------------|---|
| 1. Acetic anhydride | 2. Bromine water | 3. Benzaldehyde |
| 4. Conc. H_2SO_4 at 180°C | 5. Acetyl chloride | 6. Nitrous acid at 0 to 5°C . |
| 7. Chloroform and alc. KOH | | |

- (b) How will you synthesized; 07
1. Sulfanilamide from aniline.
 2. Chloramine-T from toluene.

OR

- Q.3** (a) 1. How will you synthesize DDT from Chlorobenzene? 03
 2. How will you synthesize Saccharin from Toluene? 04
- (b) 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.4** (a) How is furan synthesized? Describe its important reaction. 07
- (b) How is pyrrole synthesized? What happens when pyrrole treated with the following reagents: 07
1. Nitric acid in acetic anhydride at -10°C .
 2. Sulfur trioxide in pyridine.
 3. Benzenediazonium chloride.
 4. Bromine in alcohol.

OR

- Q.4** (a) Explain why, 07
1. Phenol is more acidic than ethyl alcohol?
 2. p-Nitrophenol is a stronger acid than phenol?
 3. o-Nitrophenol is steam volatile whereas p-Nitrophenol is not?
- (b) How will you convert phenol into: 07
1. Salicylic acid.
 2. Salicylaldehyde.
- Q.5** (a) Name the following reaction and Explain its mechanism & application in detail. 07



- (b) Write a note on: Favoriskii rearrangement. 07

OR

- Q.5** (a) Who were the pioneers of Alkylation & Acylation reaction? Explain its mechanism. 07
- (b) Write a note on: Baeyer-Villiger oxidation reaction with mechanism. 07
