

Register Number:

Name of the Candidate:

B.Sc. DEGREE EXAMINATION, May 2015

(APPLIED CHEMISTRY)

(SECOND YEAR)

(PART-III)

(GROUP-A: MAIN)

640: ORGANIC CHEMISTRY

Time: Three hours

Maximum: 100 marks

Answer One Full Question from each Unit (5×20=100)

UNIT-I

1. a) Explain the haemolytic and heterolytic cleavage. (6)
- b) Discuss the addition of chlorine of benzene under sunlight. (6)
- c) Name the difference types of reactions. Taking one example, explain rearrangement reaction. (8)

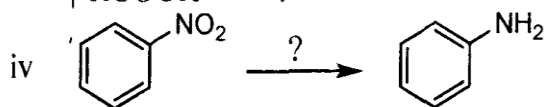
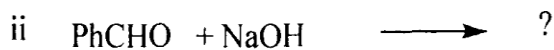
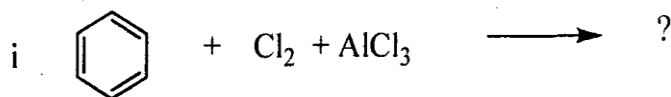
(OR)

2. a) Define the term: Electrophile and Nucleophile. Give atleast three examples for each. (6)
- b) Name the different types of polymerization reaction. Taking one example, explain anionic polymerization. (8)
- c) Complete the following: (6)
- i. $\text{RCl} + \text{AlCl}_3 \rightarrow ?$
- ii. $\text{CH}_3\text{CH}_2\text{CH}(\text{NMe}_3^+)\text{CH}_3 + \text{Ag}_2\text{O} \rightarrow ?$
- iii. Anisole + HCHO + HCl $\rightarrow ?$

UNIT-II

3. a) Discuss the commercial synthesis of phthalic anhydride. (6)
- b) Explain the importance of alkylating reagents. Give one example. (6)

c) Complete the following: (8)



(OR)

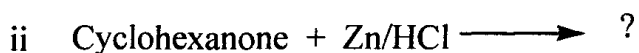
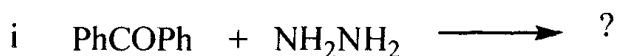
4. a) Discuss esterification reaction. (6)

b) Outline the synthesis of: (8)

i) Crotonaldehyde from acetaldehyde

ii) Cinnamic acid from benzaldehyde

c) Predict the product(s) of the following: (6)

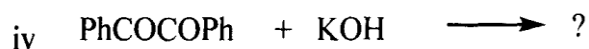
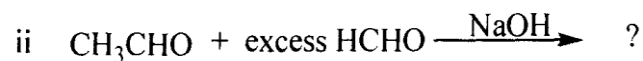
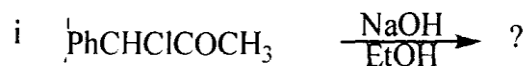


UNIT-III

5. a) What do you mean by Benzoin condensation reaction? (6)

b) Explain Favorskii rearrangement. (6)

c) Complete the following: (8)

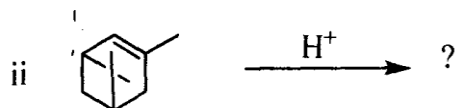
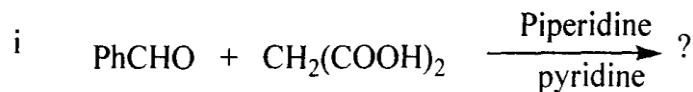


(OR)

6. a) Discuss Knoevenagal reaction and its industrial applications. (6)

b) Explain pinacol-pinacolone rearrangement. (6)

c) Complete the following: (8)



UNIT-IV

7. a) Discuss the structural elucidation of α -pinene. (8)

b) What are proteins? How are they classified? (6)

c) Write the structure of the following: (6)

i) α -pinene ii) Piperine iii) Camphor

(OR)

8. a) Define isoprene rule. Identify the isoprene unit in α -pinene and camphor. (6)

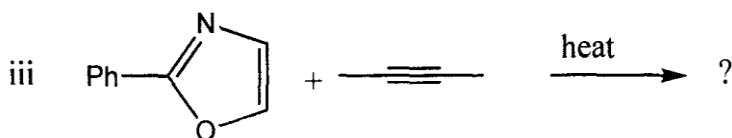
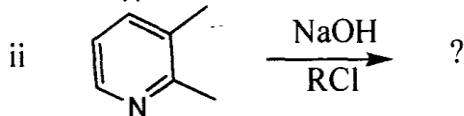
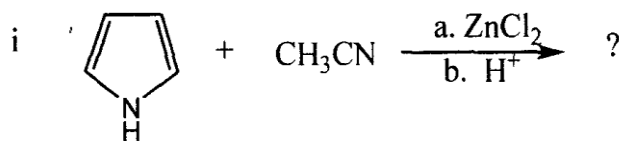
b) Explain how you establish the structure of nicotine. (8)

c) Explain how the following are isolated from natural sources. (6)

i) proteins and ii) Terpenoids

UNIT-V

9. a) Complete the following: (6)



b) Give two important reactions of: (6)

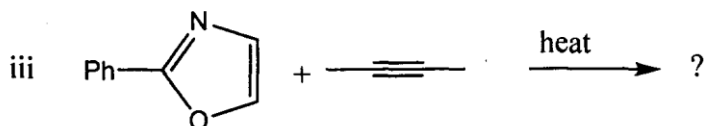
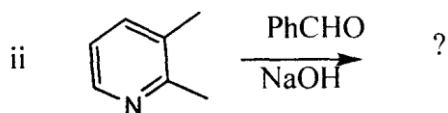
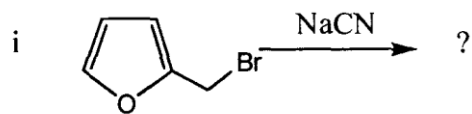
i) Oxazole and ii) Thiophene

c) Give the synthesis of: (8)

Imidazole & 2,5dimethyl furan.

(OR)

10. a) Predict the product(s) for the following: (8)



b) Give two important reactions of: (6)

i) Indole & ii) Imidazole

c) Give the synthesis of: (6)

Thiazole & 2,4-dimethylpyridine
