14CHU22

PSG COLLEGE OF ARTS & SCIENCE
(AUTONOMOUS)

BSc DEGREE EXAMINATION MAY 2017
(Sixth Semester)

Branch – **CHEMISTRY**

ORGANIC CHEMISTRY - II

Time : Three Hours Maximum : 75 Marks

SECTION-A (20 Marks)
Answer **ALL** questions
ALL questions carry **EQUAL** marks (10 x 2 = 20)

1 Although pyrrole, furan and thiophene do not contain any benzene ring still they are classed as aromatic compounds. Give reason.

2 Under what conditions NBS adds bromine across carbon – carbon double bonds?

3 What is isoelectric point of an aminoacid?

4 Distinguish between RNA and DNA.

5 Identify the product and name the rearrangement

$$R-\overset{\overset{O}{\|}}{C}-N_3 \xrightarrow{\Delta} \text{product} \xrightarrow{H_2O} \text{product} \xrightarrow{-CO_2} \text{product}$$

6 What is the basic difference between Clemmensen reduction and Wolff-Kishner reduction? What is the intermediate formed in Wolff-Kishner reduction mechanism?

7 Give one example of each dehydrohalogenation and dehydration reaction.

8 Why is chlorobenzene less reactive than benzylcholride towards nucleophilic substitution reaction?

9 Explain why equatorial conformation of methyl cyclohexane is stabler than corresponding axial conformation.

10 Distinguish between configuration and conformation.

SECTION - B (25 Marks)
Answer **ALL** Questions
ALL Questions Carry **EQUAL** Marks (5 x 5 = 25)

11 a How is quinoline obtained by Skraup's synthesis?

OR

b Outline the preparation and any four synthetic applications of periodic acid.

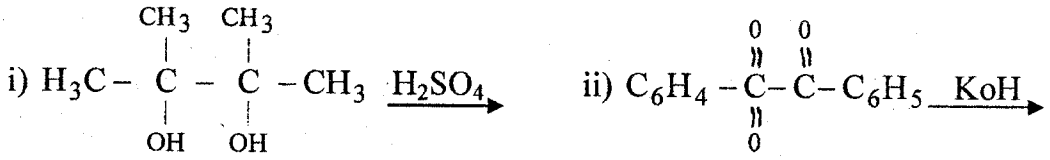
12 a i)How will you prepare glycine by Gabriel's phthalimide method?
ii) How will you synthesis a tripeptide using amino acids such as glycine, alanine and valine (Gly-Ala-Val)?

OR

b What do you mean by end group analysis? How are N – terminal and C – terminal amino acids protected? Illustrate with suitable example.

Cont ...

13 a Identify the product and predict the mechanism for the following rearrangements :



OR

b Illustrate Beckmann and Hofmann rearrangements with suitable mechanism.

14 a Explain Hofmann and Saytzeff's eliminations with suitable examples.

OR

b Illustrate Benzyne mechanism with suitable example.

15 a Starting from ethyl adipate how will you synthesise cyclopentane by Dieckmann's method?

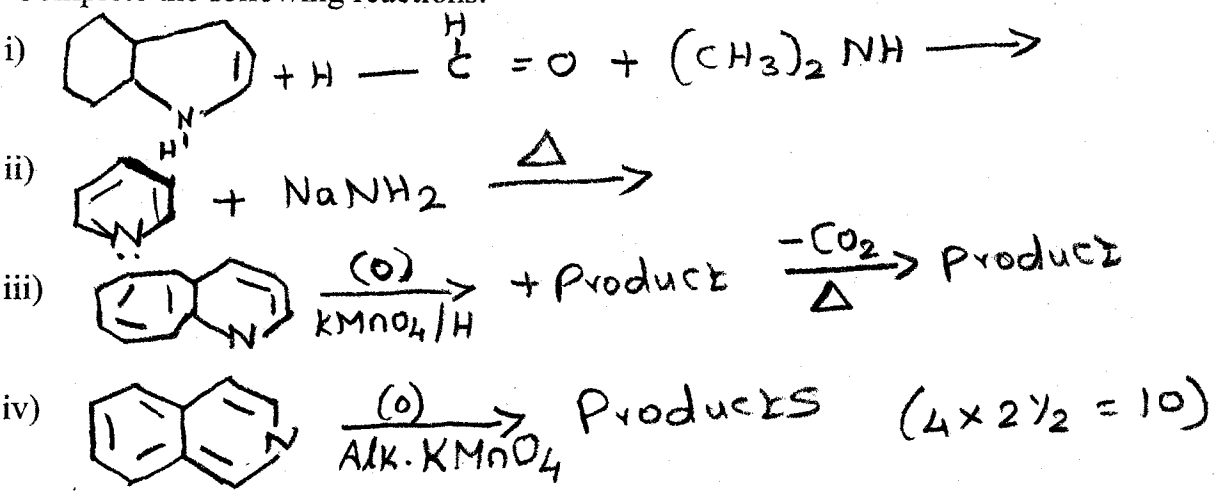
OR

b Draw the Newmann projections of n-butane conformations and explain their relative stabilities.

SECTION - C (30 Marks)

Answer any **THREE** Questions
ALL Questions Carry **EQUAL** Marks (3 x 10 = 30)

16 Outline Fisher Indole synthesis
Complete the following reactions:



17 i) How are proteins classified? (4)
ii) Discuss the primary and secondary structure of proteins. (6)

18 i) Illustrate Claisen and Cope rearrangements with suitable mechanism. (5)
ii) Explain Meerwein – Ponndorf – Verley reduction with suitable mechanism. (5)

19 i) Discuss the effect of Solvent on SN^1 and SN^2 reactions. (5)
ii) Compare E^1 and E^2 reactions. (5)

20 i) Discuss the Baeyer's strain theory and its modification. (5)
ii) Draw the chair conformations of cis-and trans – 1, 3 – dimethylcyclohexane and which form is more stable? (5)

Z-Z-Z END