



UTTARAKHAND OPEN UNIVERSITY, HALDWANI (NAINITAL)

M.Sc. First Year Chemistry*Last Date of Submission:**15 May, 2015***Course Title: Organic Chemistry****Course Code: CHE502****Year: 2014-15****Maximum Marks: 40 Marks****Section 'A'**

Section 'A' contains 08 short answer type questions of 5 marks each. Learners are required to answer 4 questions only. Answers of short answer-type questions must be restricted to 250 words approximately.

Briefly discuss the following:

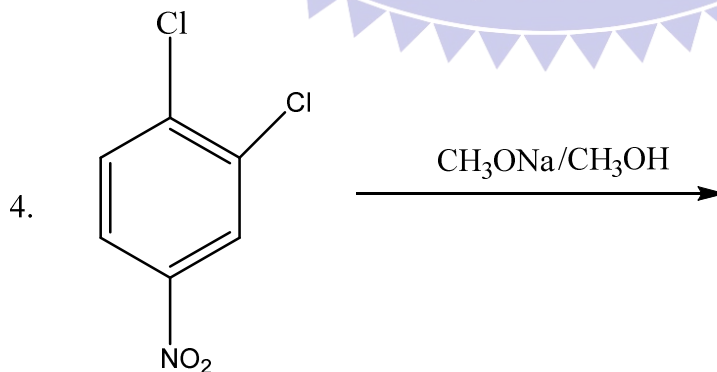
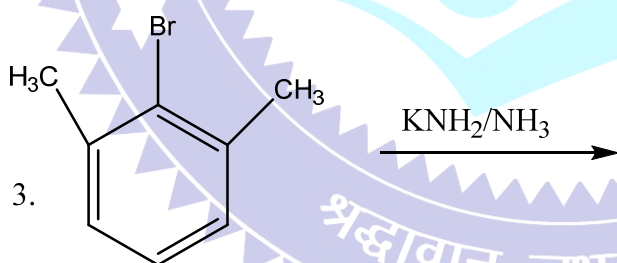
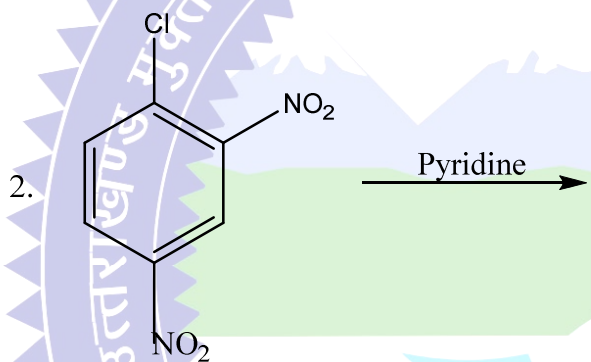
1. What is element of symmetry? Explain types of element of symmetry.
2. Give one example each with mechanism for α -elimination, E2, E1 and E1cB reaction.
3. Explain terpenoids and Alkaloids in brief, give the suitable examples of terpenoid and Terpenoids.
4. Describe the Octant rule and explain its application in the determination of configuration in chiral cyclohexane.
5. Give brief account of the followings:
 - a. Alternant and non-alternant hydrocarbon.
 - b. Hyperconjugation
 - c. Resonance energy
6. Write explanatory note on :
 - a. Stereochemistry of spiranes
 - b. Absolute configuration of biphenyls
7. Write down a short note on the followings :
 - a. Fries Rearrangement
 - b. Ruff degradation
8. Write the synthesis of Indole

Section 'B'

Section 'B' contains 04 long answer-type questions of 10 marks each. Learners are required to answer 02 questions only.

1. (a) Discuss the structure isolation, synthesis and chemical reactivity of azulenes.
- (b) Draw the Newman Conformations of n- butane.
- (c) What are the main characteristic features of configurational and conformational isomers.
- (d) Explain the terms aromatic, antiaromatic and non aromatic with suitable examples.

2. Predict the major product and mechanism of the following reactions:



3. a Describe the general methods of preparation of carbazole.
- b What are polysaccharides? Name two naturally occurring polysaccharides of α - D glucose?
- c. Describe the biogenic pathway of monoterpenoids.
4. Write the mechanism of the following reactions:
- Hofmann rearrangement
 - Sharpless asymmetric epoxidation
 - Ozonolysis of alkenes
 - Ruff degradation

