



UTTARAKHAND OPEN UNIVERSITY, HALDWANI (NAINITAL)
उत्तराखंड मुक्त विश्वविद्यालय, हल्द्वानी(नैनीताल)

M.Sc. CHEMISTRY (MSCCH-12)

ASSIGNMENT- FIRST YEAR

Last Date of Submission: 15 May

जमा करने की अन्तिम तिथि: 15 मई

Course Title: Organic Chemistry

Course code: CHE502

Year: 2012-13

Maximum Marks : 40

Section 'A'

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

Briefly discuss the following:

1. In compounds with one chiral center, is it possible to interconvert enantiomers? How?
2. An olefin synthesis yielded a mixture of the *E* and *Z* isomers. How do establish the ratio of these isomers from ¹H nmr spectrum of the reaction mixture.
3. What are main features of pericyclic reactions? Give one example each for electrocyclic reactions and cycloadditions.
4. Explain mechanism of S_E¹ and S_E² reactions with the suitable examples.
5. Write a short note on 'Aromaticity'.
6. Give any two methods of synthesis and properties of isoquinoline.
7. What are terpenoids? How are they classified? What is the significance of (1) isoprene rule (2) Special isoprene rule and gem dialkyl rule.
8. What are Hofmann exhaustive methylation and Emde degradation of an alkaloid? What Information one gets from them? Discuss any two examples.

Section 'B'

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

1. Describe the electronic effects in organic molecules and the factors affecting the availability of electrons.
2. Write an essay on 'Resolution of Racemates'.
3. How the structure of camphor is established? Show that the structure of camphoronic acid, camphoric acid and camphor can be confirmed by their synthesis.
4. What are carbohydrates? How are the monosaccharides classified? Discuss the general reactions of monosaccharides both aldoses and ketoses.

Or

Discuss the various steps of structure determination of starch. How does its structure differ from cellulose.