

# NCERT/CBSE CHEMISTRY CLASS 12 textbook

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Answers to NCERT/CBSE CHEMISTRY Class 12(Class XII)textbook

CHAPTER TEN

HALOALKANES AND HALOARENES

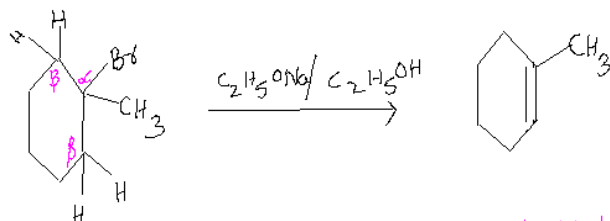
EXERCISES

## 10.10

Predict all the alkenes that would be formed by dehydrohalogenation of the following halides with sodium ethoxide in ethanol and identify the major alkene:

The alkenes that is formed by dehydrohalogenation of the halides with sodium ethoxide in ethanol depends upon the beta hydrogen present on either side of the halogen in the respective alkylhalides. If the beta hydrogens on either side of the halide is same then only one type of alkene will be obtained. If the alkyl halide has two different sets of beta hydrogens then two types of alkene may be obtained. According to Saytzeffs rule more highly substituted alkene is more stable and will form the major product.

(i) 1-Bromo-1-methylcyclohexane :-

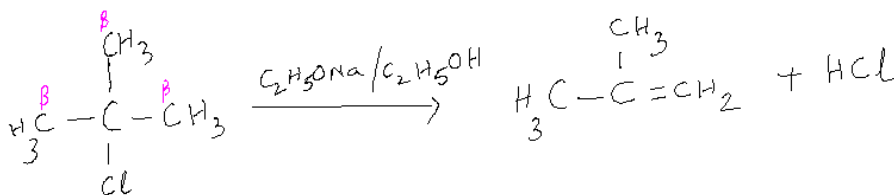


1-bromo-1-Methyl cyclohexane

1-Methyl cyclohexane

As discussed above the number of beta hydrogens on either side of Br atom is equivalent in 1-Bromo-1-methylcyclohexane . Therefore only one type of alkene 1-Metyl cyclohexane is formed.

(ii) 2-Chloro-2-methylbutane :-



2-Chloro-2-methyl butane

2-Methyl propene

Even in the above equation we see that all the nine beta hydrogens in 2-Chloro-2-methylbutane are equivalent , Therefore only one type of alkene 2-Methylpropene will be formed.

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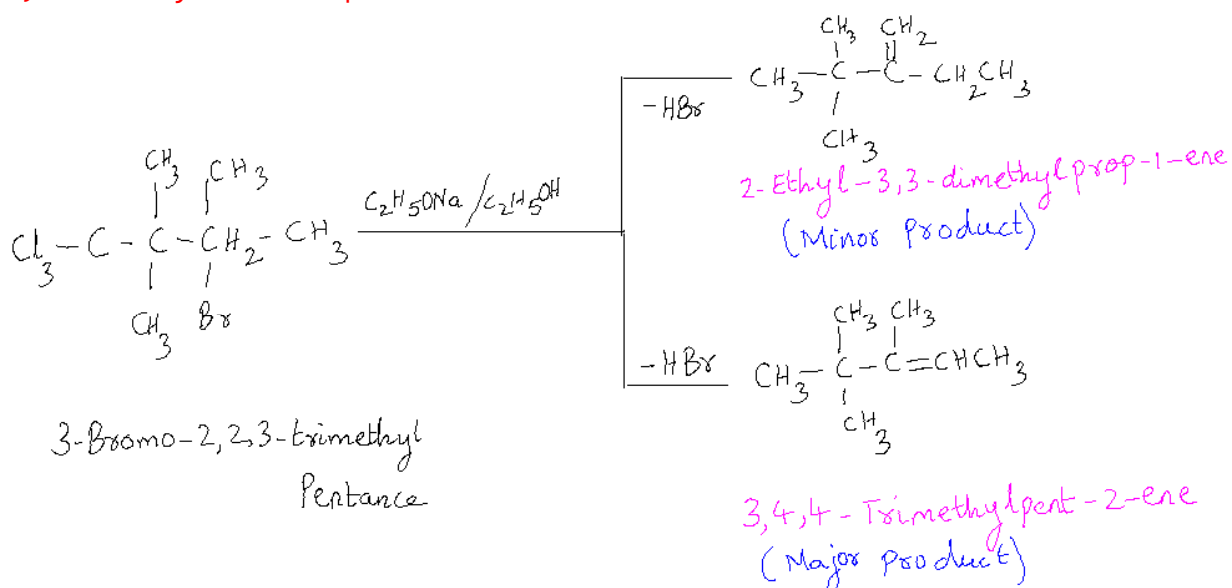
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(iii) 2,2,3-Trimethyl-3- bromopentane



In the above equation we see two different products are formed. 2,2,3-Trimethyl-3- bromopentane has two different sets of beta hydrogens and therefore gives two different types of alkenes with sodium ethoxide in alcohol. As per Saytzeff rule more highly substituted alkene will be the major product. In the above reaction the major product will be 3,4,4 -trimethylpent-2-ene.

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