



TOPIC 8 EXERCISE 1 – CHLORINATION OF ALKANES

1. Alkanes react with halogens in a reaction described as homolytic free radical substitution. Explain what is meant by the terms:
 - i) homolytic
 - ii) free radical
 - iii) substitution

2.
 - a) Using full displayed formulae, show the four steps involved in the reaction of **ethane** with chlorine to give chloroethane. State the type of reaction involved in each step.

 - b) Show by means of additional steps how this mechanism can account for the formation of:
 - iv) 1,1-dichloroethane
 - v) butane

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