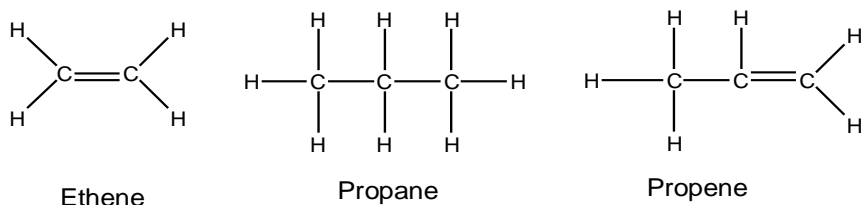


Oil Refining: Questions

1. Decane is an alkane with a formula $C_{10}H_{22}$.

(a) Cracking decane, under certain conditions, produces three products. These are



(i) Which of these products is saturated and which is unsaturated?

Saturated _____

Unsaturated _____ [2]

(ii) Describe a test which can be used to test whether a hydrocarbon is saturated or unsaturated.

Test _____ [1]

Result for both hydrocarbons _____

_____ [1]

(iii) Suggest a use of unsaturated hydrocarbons.

_____ [1]

(iv) Cracking decane, under different conditions, produces two molecules. One of these molecules is ethene. What is the formula of the other product? Suggest a use for this product.

Formula _____

Use _____ [2]

- (b) Another process in oil refining, called platforming, involves re-forming straight chain alkanes into branched chain alkanes. Passing octane vapour (C_8H_{18}) over a platinum catalyst at high pressure and high temperature, produces a branched chain alkane. Draw the structure of a branched chain alkane with the formula C_8H_{18} .

[1]