Had a go ☐ Nearly there ☐ Nailed it! ☐

Combustion and oxidation of alcohols

Practical skills

1 A student has a sample of three alcohols, **P**, **Q** and **R**, each with the formula $C_5H_{11}OH$. Each alcohol has some potassium dichromate(VI) and dilute sulfuric acid added, and the mixtures are warmed.

(a) Alcohol **Q** shows no colour change.

(i) What can be deduced about the structure of alcohol **Q**?

..... **(1 mark)**

(ii) Give the structural formula of alcohol **Q**.

..... **1 mark)**

(b) Alcohols **P** and **R** show a colour change.

(i) What colour change is seen?

..... **(2 marks)**

(ii) What can be deduced about the structures of alcohols **P** and **R**?

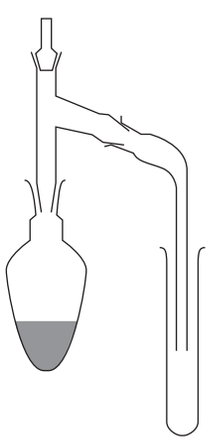
..... **(1 mark)**

(iii) What is the function of the mixture of potassium dichromate(VI) and dilute sulfuric acid?

..... **(1 mark)**

Practical skills

2 The apparatus shown can be used to change a mixture of an alcohol, potassium dichromate(VI) and dilute sulfuric acid into an aldehyde.



What would happen to the aldehyde if heated under reflux? Explain why this apparatus is used to form an aldehyde, rather than heating the mixture under reflux.

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..... **(2 marks)**