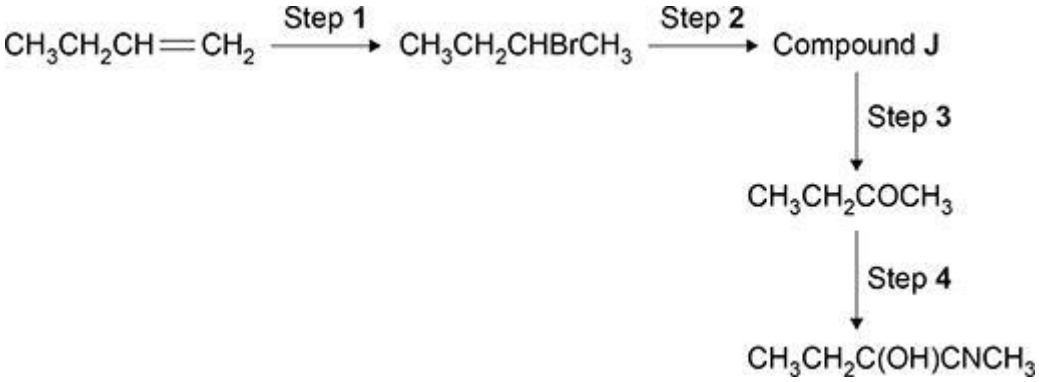
Practice Question Set For A-Level
Subject : Chemistry
Paper-2 Topic: Alcohols

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Name of the Student:_____
Max. Marks : 21 Marks **Time : 21 Minutes**

Q1.

This question is about an organic synthesis.



(a) Name the mechanism in Step **1**.

State the reagent(s) used for Step **1**.

Name of mechanism _____

Reagent(s) _____

(2)

(b) Identify compound **J**.

State the reagent(s) and conditions needed for Step **2**.

Compound **J** _____

Reagent(s) and conditions _____

_____

(2)

(c) State the reagent(s) used for Step **4**.

Outline the mechanism for Step **4**.

Reagent(s) _____

Mechanism

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(5)

(d) Explain why Step **4** produces a racemic mixture.

_____

_____

_____

_____

_____

_____

(3)

(Total 12 marks)

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Q2.

This question is about the analysis of organic compounds.

For each pair of compounds in parts (a) and (b), give a reagent (or combination of reagents) that could be added separately to each compound in a single reaction to distinguish between them.

State what is observed in each case.

(a) $CH_3CH_2CH_2CHO$ and $CH_3CH_2CH(OH)CH_3$

Reagent(s) _____

Observation with $CH_3CH_2CH_2CHO$ _____

_____

Observation with $CH_3CH_2CH(OH)CH_3$ _____

_____

(3)

(b) Cyclohexane and cyclohexene

Reagent(s) _____

Observation with cyclohexane _____

_____

Observation with cyclohexene _____

_____

(3)

(c) The table below gives the precise relative molecular masses (M_r) of some organic compounds measured using high resolution mass spectrometry.

Molecular formula	C_5H_{12}	C_5H_{10}	C_6H_6
$\boldsymbol{M_r}$	72.1416	70.1260	to be calculated

Use these data to find the relative atomic masses (A_r) of hydrogen and carbon. Give your answers to 4 decimal places.

Use these calculated A_r values to find the relative molecular mass (M_r) of C_6H_6 Give your answer to 4 decimal places.

A_r of hydrogen _____

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A_r of carbon _____

M_r of C_6H_6 _____

(3)

(Total 9 marks)

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