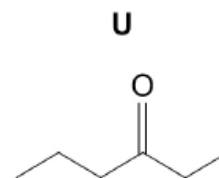
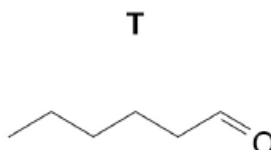
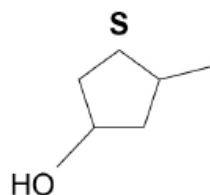
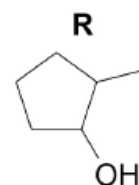
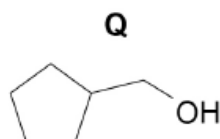
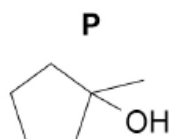


AQA – Aldehydes and Ketones – A2 Chemistry P2

1. June/ 2020/Paper_2/No.3

0 3

This question is about the structural isomers shown.



0 3 . 1

Identify the isomer(s) that would react when warmed with acidified potassium dichromate(VI).

State the expected observation when acidified potassium dichromate(VI) reacts.

[2 marks]

Isomer(s) _____

Expected observation _____

0 3 . 2

Identify the isomer(s) that would react with Tollens' reagent.

State the expected observation when Tollens' reagent reacts.

[2 marks]

Isomer(s) _____

Expected observation _____

0 3 . 3

Separate samples of each isomer are warmed with ethanoic acid and a few drops of concentrated sulfuric acid. In each case the mixture is then poured into a solution of sodium hydrogencarbonate.

Identify the isomer(s) that would react with ethanoic acid.

Suggest a simple way to detect if the ethanoic acid reacts with each isomer.

Give a reason why the mixture is poured into sodium hydrogencarbonate solution.

[3 marks]

Isomer(s) _____

Suggestion _____

Reason _____

0 3 . 4

State the type of structural isomerism shown by isomers **P**, **Q**, **R** and **S**.

[1 mark]

0 3 . 5

Describe fully how infrared spectra can be used to distinguish between isomers **R**, **S** and **T**.

Use data from **Table A** in the Data Booklet in your answer.

[4 marks]

0 3 . 6

State why mass spectrometry using electrospray ionisation is **not** a suitable method to distinguish between the isomers.

[1 mark]

2. June/ 2019/Paper_2/No.13

1 3

Aqueous NaBH_4 reduces aldehydes but does not reduce alkenes.

1 3 . 1

Show the first step of the mechanism of the reaction between NaBH_4 and 2-methylbutanal.

You should include two curly arrows.

Explain why NaBH_4 reduces 2-methylbutanal but has no reaction with 2-methylbut-1-ene.**[5 marks]**

First step of mechanism

Explanation _____

1 3 . 2

A student attempted to reduce a sample of 2-methylbutanal but added insufficient NaBH_4

The student confirmed that the reduction was incomplete by using a chemical test.

Give the reagent and observation for the chemical test.

[2 marks]

Reagent _____

Observation _____
