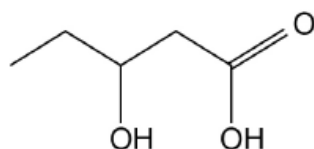


AQA – Aldehydes and Ketones – A2 2023 Chemistry P2 & P3

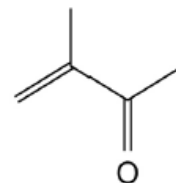
1. No.6

0 6

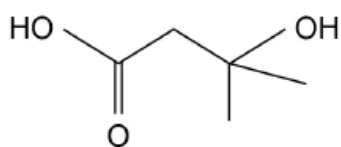
A student plans a series of chemical tests to confirm the identities of four organic liquids.



Liquid J



Liquid K



Liquid L



Liquid M

This is the student's method.

To separate test tubes containing samples of each liquid:

Test 1 add potassium dichromate(VI) solution and warm gently

Test 2 add Fehling's solution and cool in iced water

Test 3 add sodium hydrogencarbonate solution and test any gas produced with a lighted splint

Test 4 add bromine water and shake at room temperature.

0 6 . 1

Identify the missing reagent needed in **Test 1**.

[1 mark]

- 0 6 . 2** In addition to the missing reagent in **Test 1**, there is a mistake in the method for **two** of the other tests.

State the **two** mistakes.

Suggest how each of the mistakes should be corrected.

[2 marks]

Mistake 1 _____

Suggestion _____

Mistake 2 _____

Suggestion _____

- 0 6 . 3** The missing reagent is added and the mistakes are corrected.

Identify the liquid(s), **J**, **K**, **L** and **M**, that would react in each test.

State the expected observation for each reaction.

[8 marks]

Liquid(s) that react in **Test 1** _____

Expected observation _____

Liquid(s) that react in **Test 2** _____

Expected observation _____

Liquid(s) that react in **Test 3** _____

Expected observation _____

Liquid(s) that react in **Test 4** _____

Expected observation _____

0 6 . 4

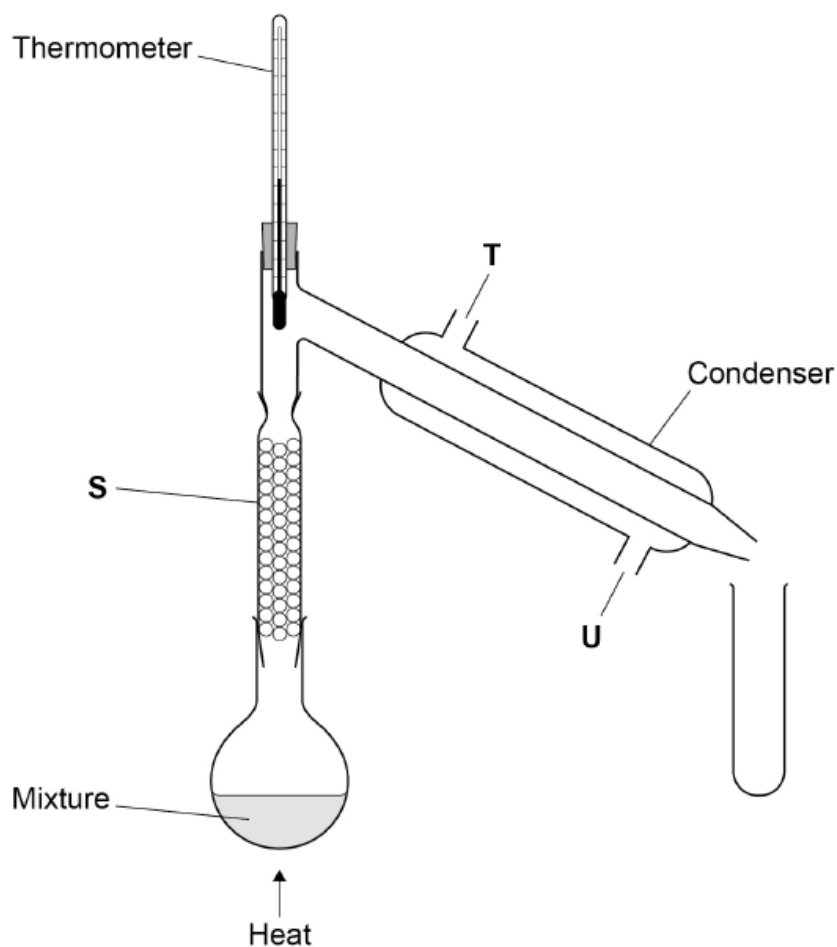
Figure 10 shows the apparatus that is used to separate a mixture of liquids **K** and **M** using fractional distillation.

Suggest labels that should be added to positions **S**, **T** and **U** in **Figure 10**.

Explain why fractional distillation is preferred to simple distillation to separate liquids **K** and **M**.

[3 marks]

Figure 10



Label **S** _____

Label **T** _____

Label **U** _____

Explanation _____

2. No.33

The skeletal formulas of two compounds are shown.



Which method would distinguish between samples of these compounds?

[1 mark]

A comparing fingerprint regions of their infrared spectra

☐

B obtaining molecular masses from their high resolution mass spectra

☐

C warming with acidified potassium dichromate(VI) solution

☐

D warming with Tollens' reagent

☐