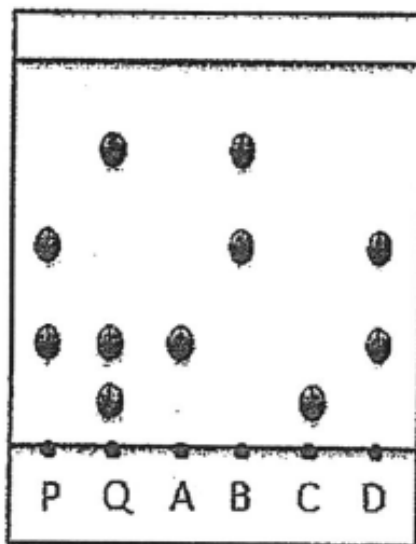


**O Level Combined Chemistry MCQs**

**Separation Techniques Test 1.0**

Q1

The diagram below shows a chromatogram. The solvent used was ethanol.



Which of the following statements is **not** correct?

- A Substance A is pure.
- B Substance P is the same as substance D.
- C Substance Q contains all the components found in A, B, C and D.
- D Substance B is more soluble in ethanol than substance A.

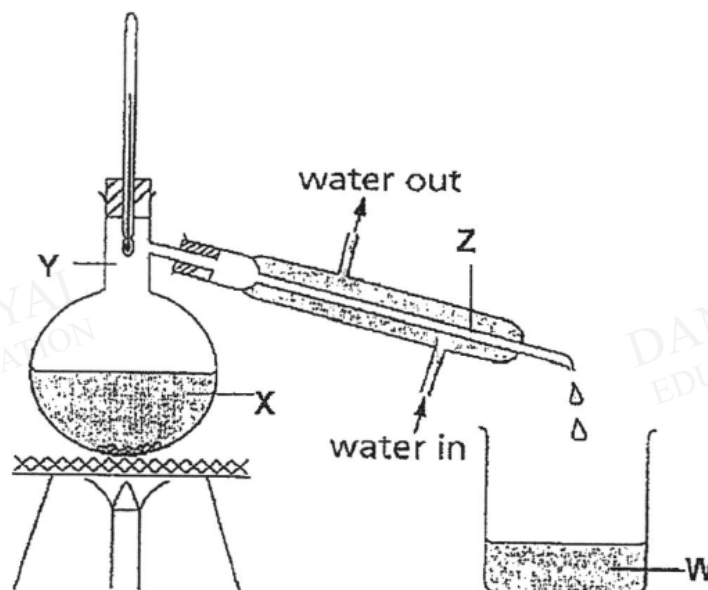
Q2

Chloroethane is an organic solvent used to wash off paint from clothing. What method can be used to recover the solvent after use and how can the purity of the solvent recovered be checked?

	method to recover solvent	purity check
A	distillation	obtain a chromatogram
B	distillation	find the boiling point
C	filtration	find the boiling point
D	filtration	obtain a chromatogram

Q3

The diagram below shows the apparatus used to obtain water from aqueous copper(II) sulfate.



Which of the following statements about the separation process is correct?

- A A blue solution is observed at W.
- B Blue crystals are formed at Z.
- C Colour of the solution at X becomes darker.
- D Temperature at Y is the same as the boiling point of copper(II) sulfate.

Q4

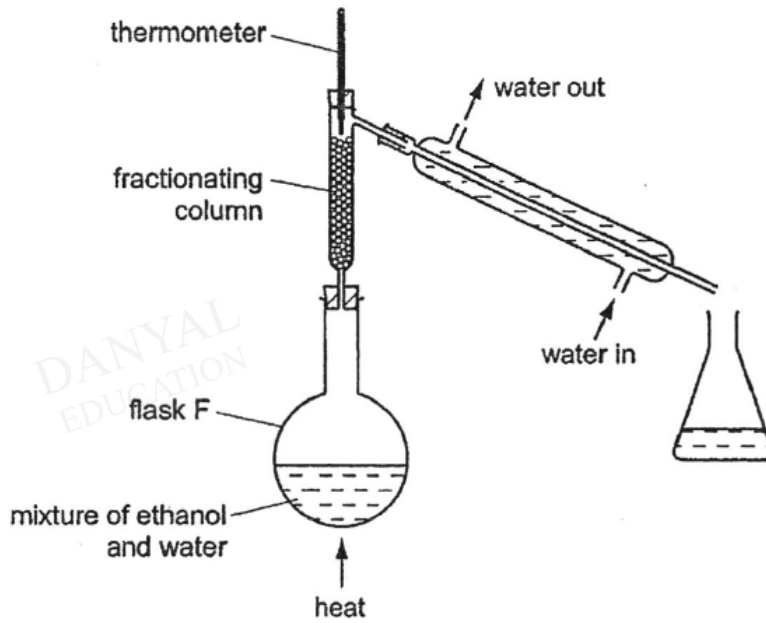
Propanol has a boiling point of 97 °C and water has a boiling point of 100 °C.

Which method is used to separate a mixture of these two liquids?

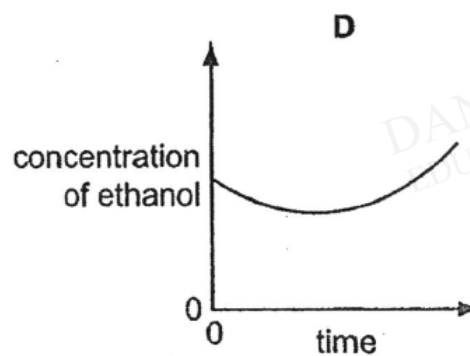
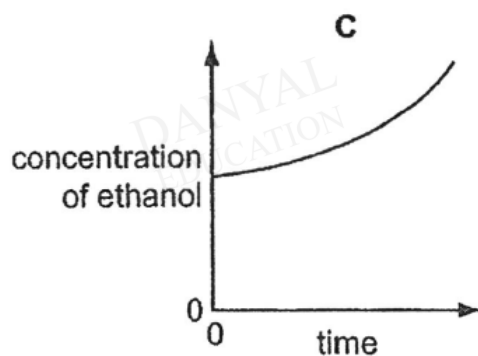
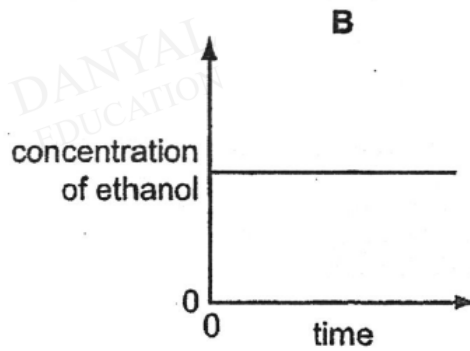
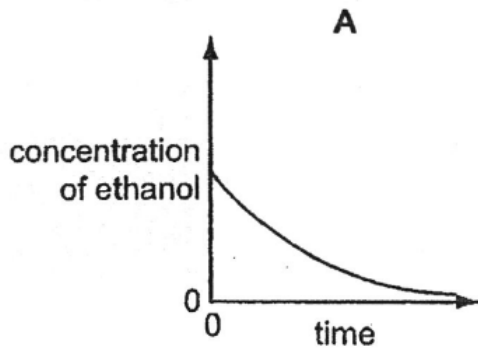
- A filtration
- B evaporation
- C fractional distillation
- D paper chromatography

Q5

The apparatus shown is used to distil ethanol (boiling point  $78\text{ }^{\circ}\text{C}$ ) from a mixture of ethanol and water.



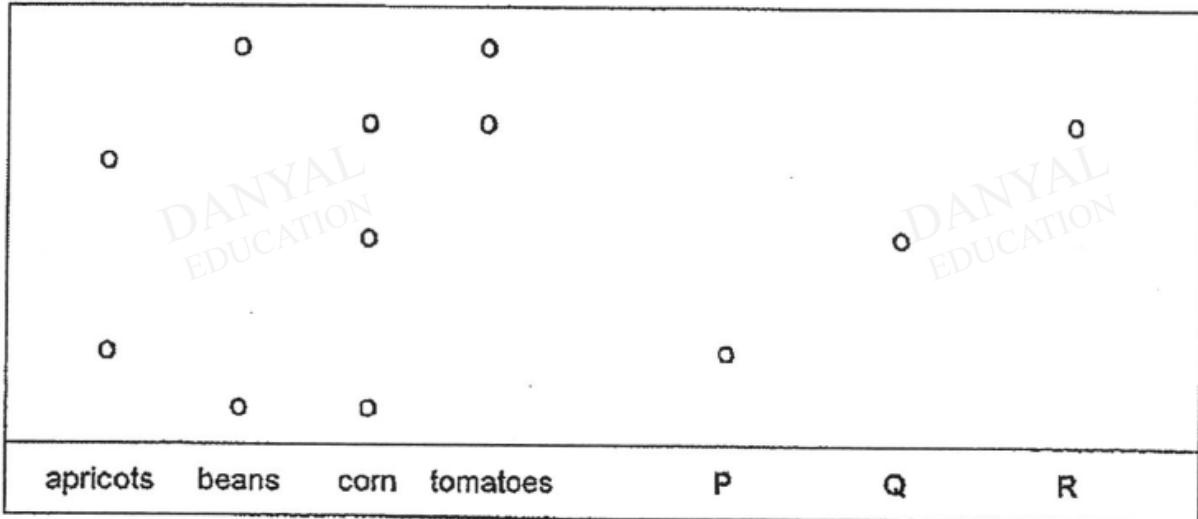
Which graph shows the change in concentration of the ethanol in flask F as the distillation proceeds?



Q6

Samples of tinned apricots, beans, corn and tomatoes were tested for additives using chromatography. The chromatograms were compared with those of three artificial additives, P, Q and R.

The results were shown below.

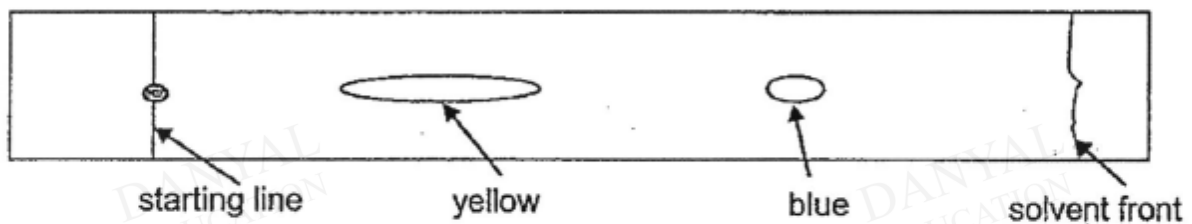


Which tinned food does not contain any artificial additives?

- A apricots
- B beans
- C corn
- D tomatoes

Q7

The chromatogram of the dyes used for the colouring of a drink is shown in the diagram below.

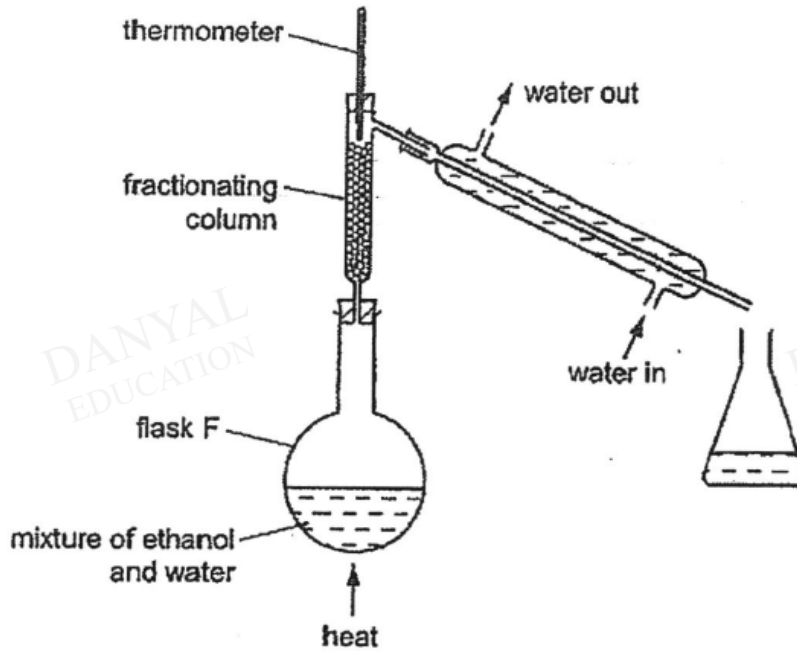


Which of the following statements can be deduced from the chromatogram?

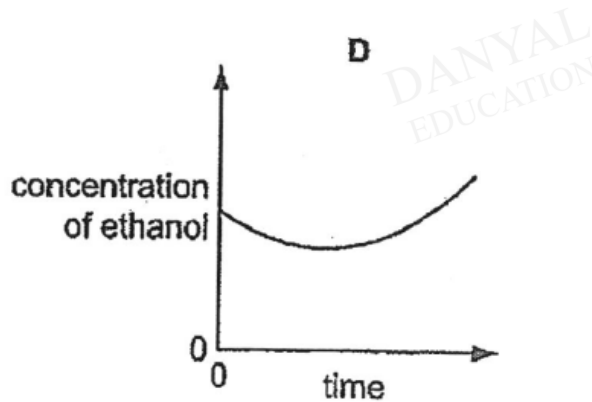
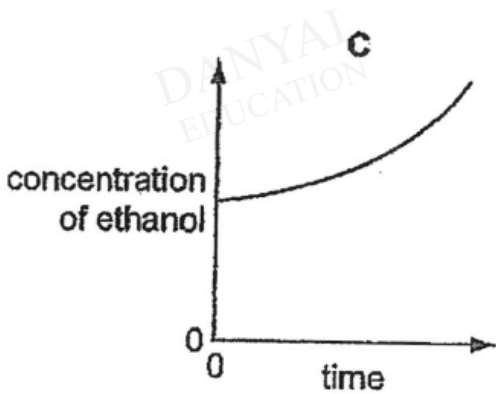
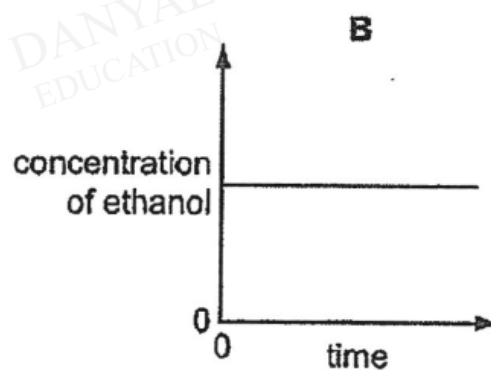
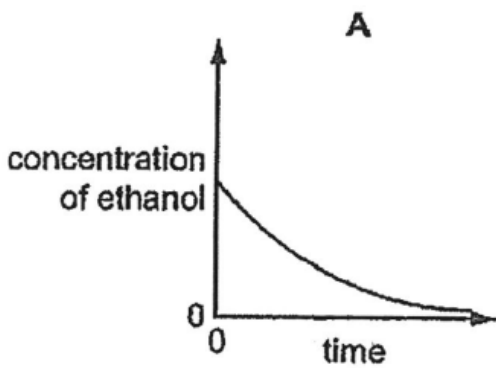
- A The colour of the drink is red.
- B The yellow dye has a higher molecular mass than the blue dye.
- C The yellow dye is less soluble than the blue dye in the solvent used.
- D The molecules of the yellow dyes are smaller than those of the blue dyes.

Q8

The apparatus shown is used to distil ethanol (boiling point  $78\text{ }^{\circ}\text{C}$ ) from a mixture of ethanol and water.

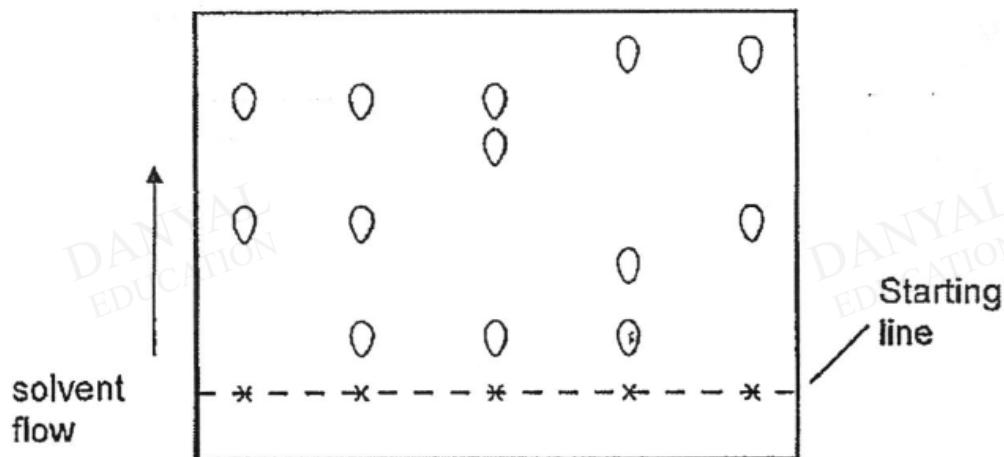


Which graph shows the change in concentration of the ethanol in flask F as the distillation proceeds?



Q9

The diagram shows a chromatogram which was prepared using spots of five different inks.



How many different dyes were used to make the five inks?

- A 5
- B 6
- C 7
- D 13

Q10

A beaker contains a mixture of ethanol and water. Which method could be used to separate the mixture of ethanol and water and the corresponding purity check for the separated ethanol?

	method of separation	purity check
<b>A</b>	filtration	check the smell and colour
<b>B</b>	fractional distillation	check the smell and colour
<b>C</b>	fractional distillation	find the boiling point
<b>D</b>	simple distillation	find the boiling point

**Answers**

**Separation Techniques Test 1.0**

Q1 C

Q2 B

Q3 C

Q4 C

Q5 A

Q6 B

Q7 C

Q8 A

Q9 B

Q10 C

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