Experimental Techniques – 2022 IGCSE

1. June/2022/Paper_11/No.3

Which method is used to separate a mixture of the following liquids?

liquid	boiling point / °C
methanol	64.5
ethanol	78.5
propan-1-ol	97.2
butan-1-ol	117.0

A crystallisation

B evaporation

C filtration

D fractional distillation

2. June/2022/Paper_11/No.4

Which substance should be pure for the intended use?

A a drug for curing disease

B limestone for iron extraction

C petroleum for fractional distillation

D water for washing a car

3. June/2022/Paper_12/No.3

Which method is used to separate a mixture of the following liquids?

liquid	boiling point / °C
methanol	64.5
ethanol	78.5
propan-1-ol	97.2
butan-1-ol	117.0

A crystallisation

B evaporation

C filtration

D fractional distillation

4. June/2022/Paper_13/No.2

Which method is used to separate a mixture of the following liquids?

liquid	boiling point / °C
methanol	64.5
ethanol	78.5
propan-1-ol	97.2
butan-1-ol	117.0

A crystallisation

B evaporation

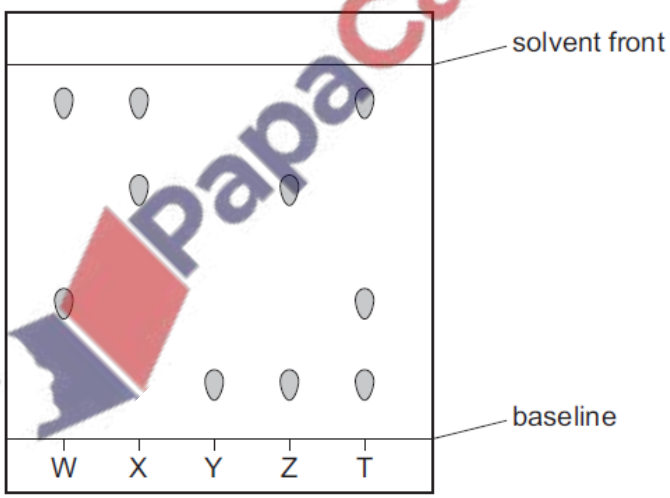
C filtration

D fractional distillation

5. June/2022/Paper_13/No.3

Paper chromatography is used to separate four different coloured inks, W, X, Y and Z, and an unknown ink T.

The chromatogram is shown.



Which inks are present in ink T?

A W and X **B** W and Y **C** X and Z **D** Y and Z

6. June/2022/Paper_21/No.2

A student measures the time taken for 2.0 g of magnesium to dissolve in 50 cm^3 of dilute sulfuric acid.

Which apparatus is essential to complete the experiment?

1 stop-clock

2 measuring cylinder

3 thermometer

4 balance

A 1, 2 and 4 **B** 1 and 2 only **C** 1 and 4 only **D** 2, 3 and 4

7. June/2022/Paper_21/No.4

Which substance should be pure for the intended use?

A a drug for curing disease

B limestone for iron extraction

C petroleum for fractional distillation

D water for washing a car

8. June/2022/Paper_22/No.2

A student measures the time taken for 2.0 g of magnesium to dissolve in 50 cm^3 of dilute sulfuric acid.

Which apparatus is essential to complete the experiment?

1 stop-clock

2 measuring cylinder

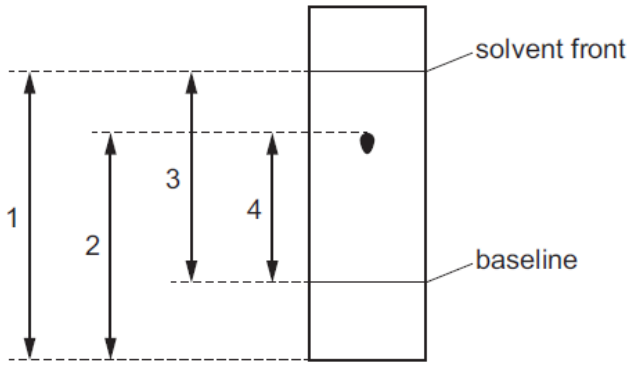
3 thermometer

4 balance

A 1, 2 and 4 **B** 1 and 2 only **C** 1 and 4 only **D** 2, 3 and 4

9. June/2022/Paper_22/No.3

A chromatogram of a single substance T is shown.



Which measurements are used to find the R_f value of T?

A 1 and 2 **B** 1 and 4 **C** 2 and 3 **D** 3 and 4

10. June/2022/Paper_23/No.2

A student measures the time taken for 2.0 g of magnesium to dissolve in 50 cm^3 of dilute sulfuric acid.

Which apparatus is essential to complete the experiment?

1 stop-clock

2 measuring cylinder

3 thermometer

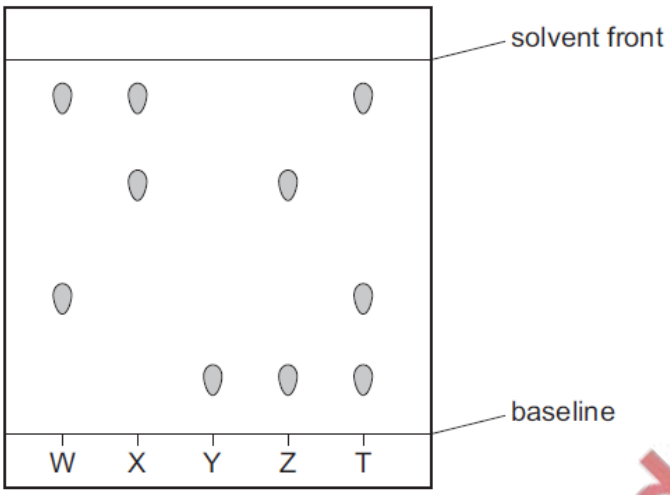
4 balance

A 1, 2 and 4 **B** 1 and 2 only **C** 1 and 4 only **D** 2, 3 and 4

11. June/2022/Paper_23/No.4

Paper chromatography is used to separate four different coloured inks, W, X, Y and Z, and an unknown ink T.

The chromatogram is shown.

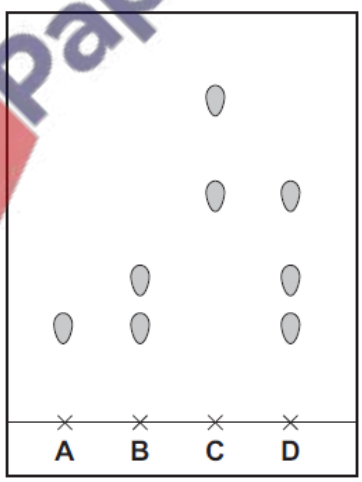


Which inks are present in ink T?

A W and X **B** W and Y **C** X and Z **D** Y and Z

12. March/2022/Paper_12/No.3

Which dye on the chromatogram is a pure substance?



13. March/2022/Paper_12/No.4

Which piece of apparatus is used to measure exactly 5.00 cm^3 of a liquid?

A 5 cm^3 beaker

B 10 cm^3 measuring cylinder

C 25 cm^3 pipette

D 50 cm^3 burette

14. March/2022/Paper_12/No.5

Fermentation of sugar produces a mixture of ethanol solution and solid yeast.

How is the solid yeast removed from the mixture?

A crystallisation

B distillation

C filtration

D fractional distillation

15. March/2022/Paper_22/No.5

Fermentation of sugar produces a mixture of ethanol solution and solid yeast.

How is the solid yeast removed from the mixture?

A crystallisation

B distillation

C filtration

D fractional distillation