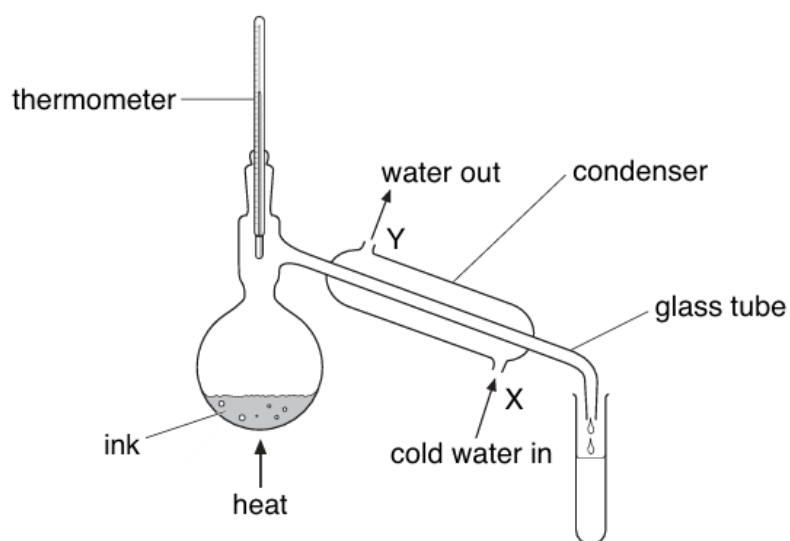


12. Rema used the apparatus below to distil 100 cm³ of water-soluble ink.



apparatus A

not to scale

- (a) Which processes occur during distillation?
Tick the correct box.

condensation then evaporation

☐

evaporation then condensation

☐

melting then boiling

☐

melting then evaporation

☐

- (b) Give the name of the colourless liquid that collects in the test-tube.

- (c) What would the temperature reading be on the thermometer when the ink has been boiling for two minutes?

_____ °C

- (d) (i) Water at 15°C enters the condenser at X.
Predict the temperature of the water when it leaves the condenser at Y.

_____ $^{\circ}\text{C}$

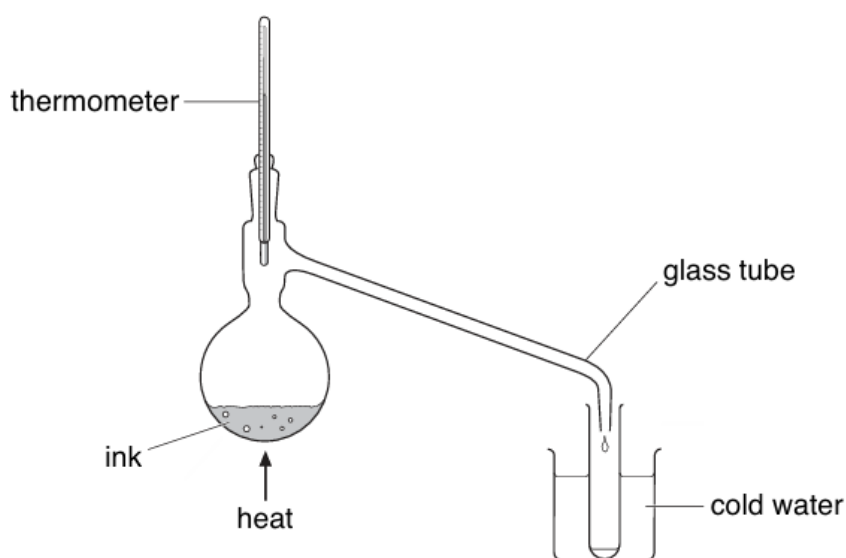
Explain this change of temperature.

- (ii) Give **two** ways in which the water vapour changes as it passes down the glass tube in the condenser.

1. _____

2. _____

- (e) Peter used the apparatus below to distil 100 cm^3 of water-soluble ink.



apparatus B

not to scale

Why is the condenser in **apparatus A** better than the glass tube and beaker of water in **apparatus B**?

maximum 7 marks