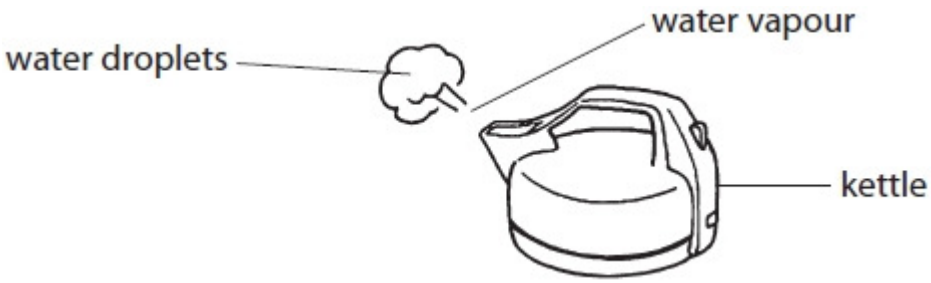
Chemistry Questions

Q1.

The diagram shows a kettle of boiling water.



As the water vapour cools it turns into droplets of liquid water.

(a) The change of state when water vapour changes into liquid water is described as

(1)

- ☒ **A** boiling
- ☒ **B** condensation
- ☒ **C** evaporation
- ☒ **D** sublimation

(b) Describe what happens when water vapour cools to form liquid water.

Your answer should include the change in the energy, arrangement and movement of the particles.

(3)

change in energy

.....

.....

.....

change in arrangement

.....

.....

.....

change in movement

.....

.....

.....

(c) The photograph shows an aeroplane that has a rocket motor.



(a) One of the tanks on the aeroplane contains liquid oxygen.

(i) Complete the diagram to show the arrangement of the particles in a liquid.
One particle has been drawn for you.

(2)



(ii) Much more oxygen can be stored in the tank when the oxygen is a liquid rather than a gas.
Give a reason for this in terms of the arrangement of the particles.

(1)

.....

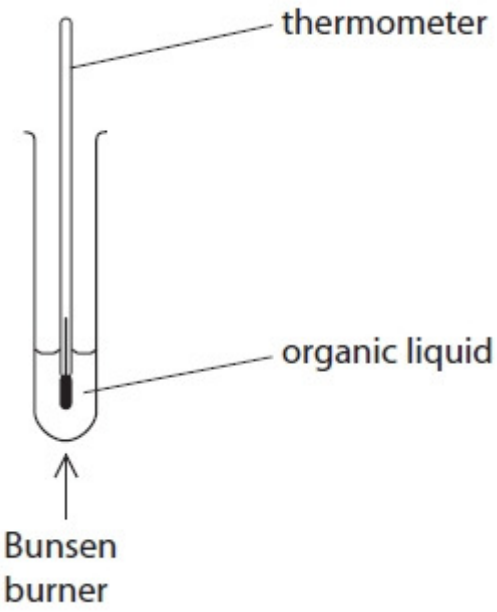
.....

.....

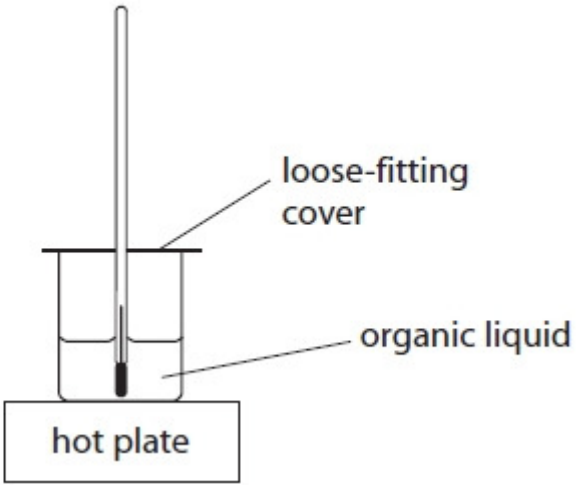
(Total for Question = 7 marks)

Q2.

A teacher discussed with her students whether the boiling points of compounds are related to the size of their particles.
The students suggested measuring the boiling points of some organic compounds using this apparatus.



(a) The teacher said that their suggested method was too dangerous.
She recommended using the apparatus shown below instead.



(i) Give the names of the two pieces of apparatus used to hold the liquids in these diagrams.

(2)

.....

.....

(ii) Suggest **one** reason why this apparatus is better than the students' suggestion.

(1)

.....

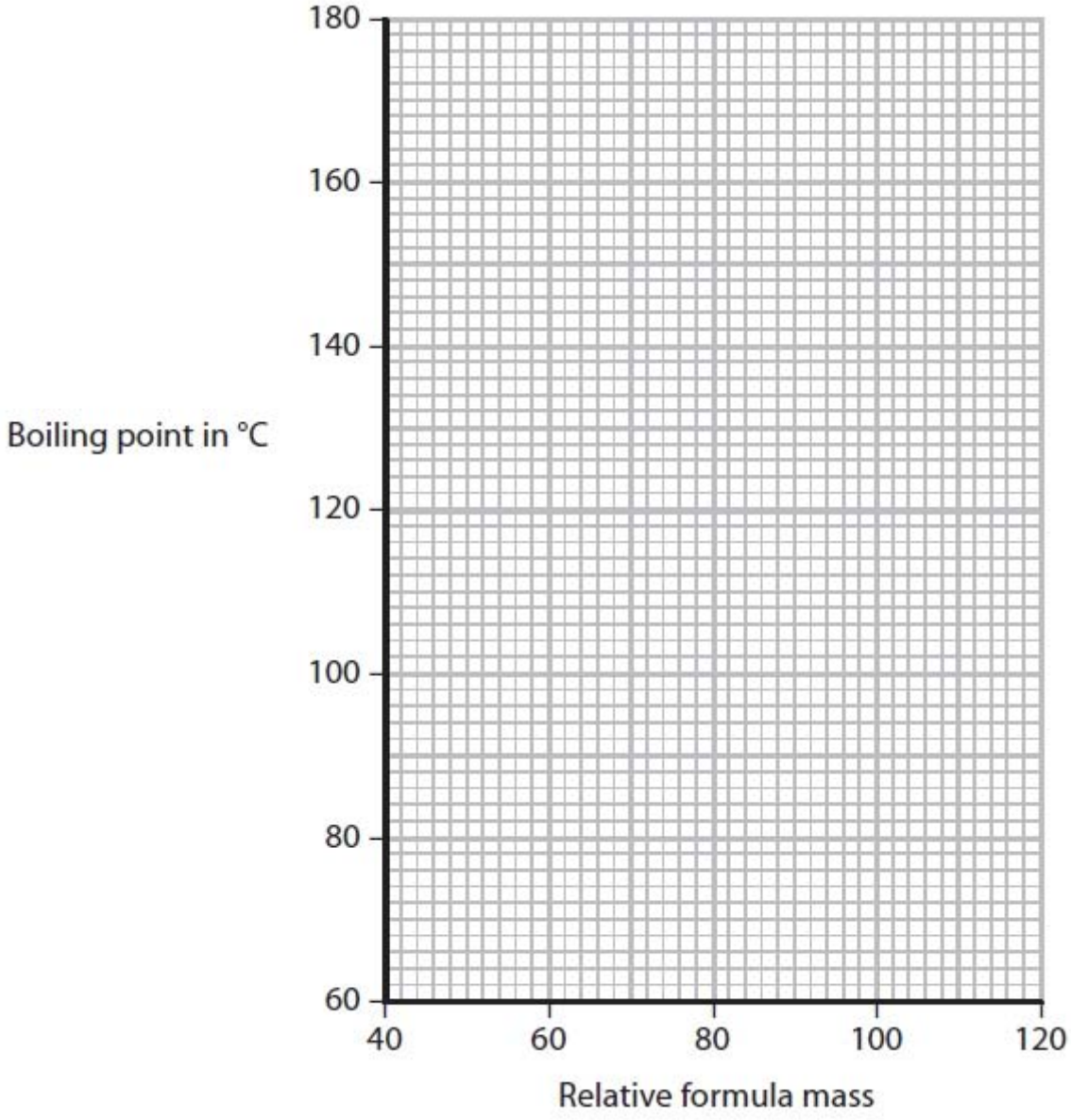
.....

(b) The students used the apparatus recommended by the teacher to measure the boiling points of five alcohols.
Their results are shown in the table.

	Alcohol				
	A	B	C	D	E
Boiling point in °C	78	96	138	157	176
Relative formula mass	46	60	88	102	116

(i) Plot a graph of the data in the table on the grid.
Draw a straight line of best fit through the points.

(4)



(ii) Describe the relationship shown by your graph.

(1)

.....

.....

(iii) Use your graph to predict the boiling point of the alcohol that has a relative formula mass of 74.

(1)

.....

(iv) Which of the alcohols **A**, **B**, **C**, **D** or **E** is the least volatile?

(1)

.....

(c) The five alcohols may be used as fuels.

(i) What is a fuel?

(1)

.....

(ii) Which gas from the air reacts with these alcohols when they are used as fuels?

(1)

.....

(iii) Name another substance used as a fuel.

(1)

.....

(Total for Question = 13 marks)