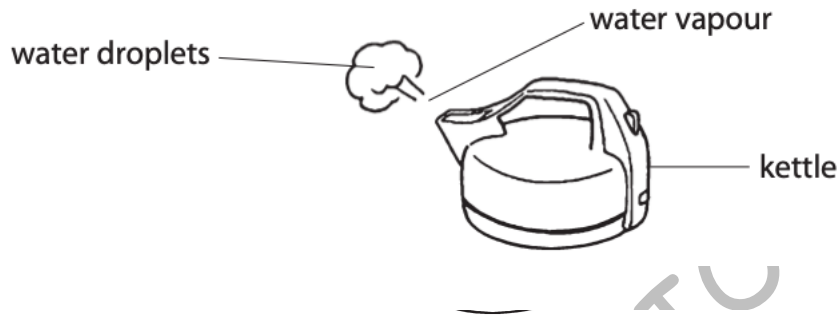


Year9 -States of Matter Study Questions

1) 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

.....

.....

(Total for Question 1 = 4 marks)

2) In chemistry, the state symbols (s), (l), (g) and (aq) are often used.

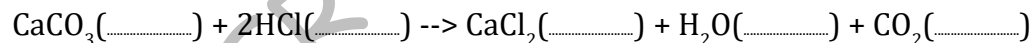
(a) The table shows some changes of state.

Complete the table to show the state symbol before and after the change.

Change of state	State symbol before change	State symbol after change
Water boils in a kettle		
Ethene is converted to poly(ethene)		
Crystals of iodine sublime on heating		

(b) Some marble chips are added to a solution of hydrochloric acid.

Complete the equation for the reaction that occurs by writing the appropriate state symbol after each formula. (3)



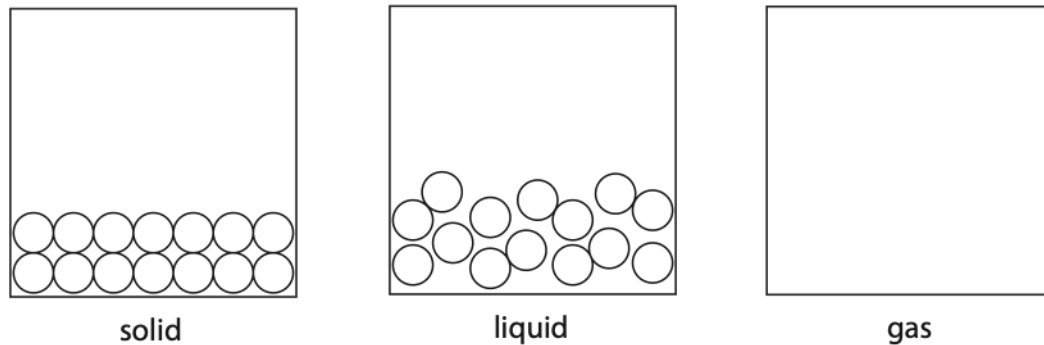
(c) Which state symbol is used most often for the elements of the Periodic Table at room temperature? (1)

.....

(Total for Question 2 = 6 marks)

3) This question is about the states of matter.

(a) The diagram shows the three states of matter for a substance.



Each circle represents a molecule of the substance.

(i) Complete the diagram by drawing six circles to represent molecules in the gas state. (1)

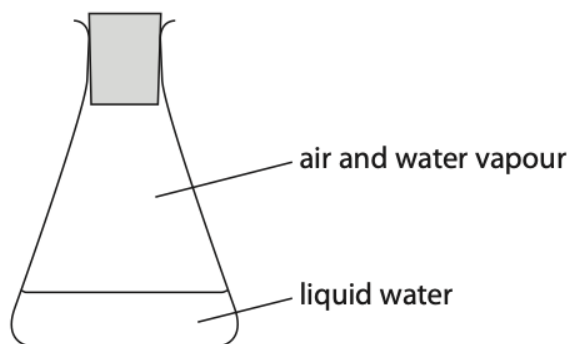
(ii) Which statement is correct about the movement or arrangement of the molecules of this substance? (1)

- A They move randomly in the solid state.
- B They move randomly in the liquid state.
- C They are arranged in fixed positions in the liquid state.
- D They are arranged in fixed positions in the gas state.

(iii) Which term is used for a solid changing to a liquid?

- A boiling
- B condensing
- C freezing
- D melting

b) Some cold water is poured into a conical flask and a bung inserted. The diagram shows the flask after a few minutes.



(i) What is occurring in the flask?

(1)

- A boiling and condensing
- B condensing and evaporating
- C evaporating and freezing
- D freezing and melting

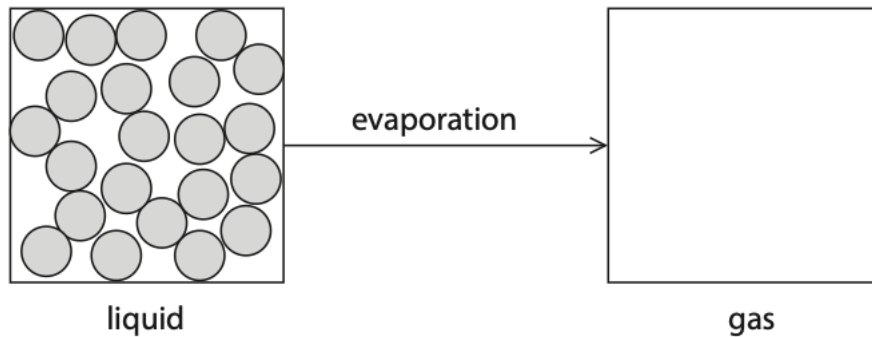
(ii) Which formula represents a substance that is **not** present in the flask?

(1)

- A $\text{H}_2\text{O}(\text{g})$
- B $\text{H}_2\text{O}(\text{l})$
- C $\text{N}_2(\text{g})$
- D $\text{N}_2(\text{l})$

(Total for Question 3 = 5 marks)

4) When a liquid evaporates at room temperature, it changes into a gas. The diagram shows the arrangement of the particles in a liquid.



(a) Complete the diagram to show the arrangement of four particles in a gas.

(1)

(b) Describe the movement of particles in a gas.

(1)

.....

.....

(c) Explain why heating a liquid causes it to evaporate more quickly.

(2)

.....

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(Total for Question 4 = 4 marks)

END OF TEST

PAST PAPER QUESTIONS 1C