

States of Matter

Total marks: 17

Q1.

An ink is a mixture of coloured substances dissolved in water.

The particles in the ink in the flask can be shown as in Figure 10.

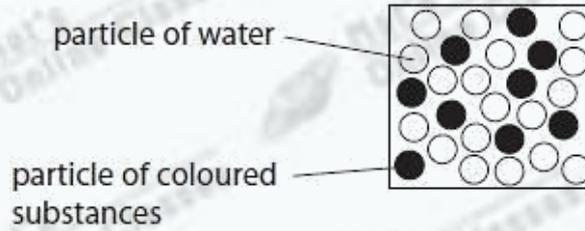


Figure 10

In the boxes below, draw the arrangement of particles that would be expected at **A** and **B** shown in Figure 9.

(2)



particles at **A**



particles at **B**

Q3.

An ink is a mixture of coloured substances dissolved in water.

Changes of state between the three states of matter are shown in Figure 11.

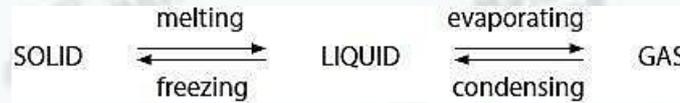


Figure 11

The changes shown are physical changes.

Explain why these changes are called physical changes rather than chemical changes.

(2)

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.....

.....

.....

Q4.

Figure 3 shows a metal spoon and two test tubes being heated in a water bath. One test tube contains a piece of chocolate, the other some liquid egg white.

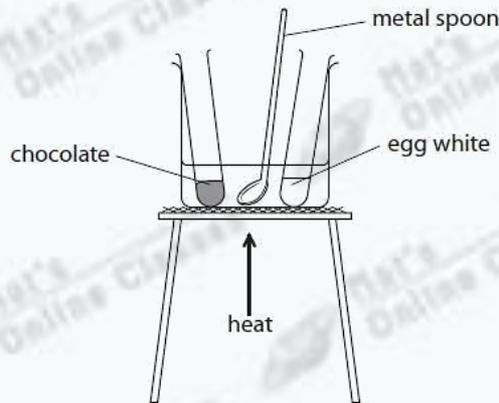


Figure 3

After heating, the spoon, the chocolate and the egg white are allowed to cool to room temperature.

Figure 4 shows the state of the three different substances before heating, when hot and after cooling.

substance	before heating	when hot	after cooling
metal spoon	solid	solid	solid
chocolate	solid	liquid	solid
egg white	liquid	solid	solid

Figure 4

Describe the differences in the arrangement and movement of the particles in a solid and in a liquid.

(2)

difference in arrangement of particles

.....
.....

difference in movement of particles

.....
.....

Q5.

Figure 5 shows the changes of state for gallium and the arrangement of particles in liquid gallium.

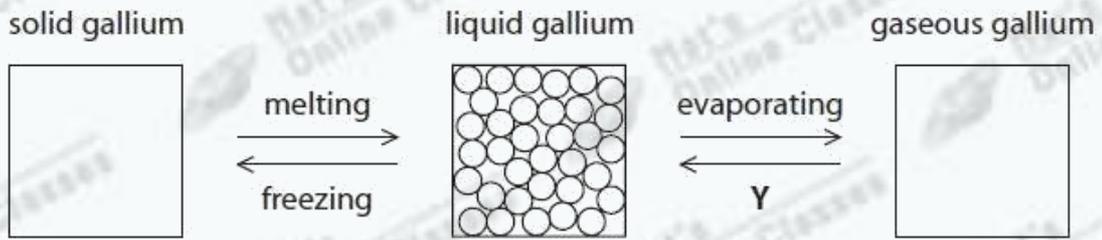


Figure 5

(i) Complete the boxes for solid gallium and gaseous gallium by drawing the arrangement of the particles in each of these physical states.

(2)

(ii) Give the name of the change of state labelled Y in Figure 5.

(1)

.....

Q6.

If liquid water is cooled below 0 °C it turns into the solid, ice.

(i) Give the name for the change of state from liquid to solid.

(1)

.....

(ii) Here are five statements about ice and water.

Place ticks in boxes by the **two** statements that are correct.

(2)

the molecules move faster in water than in ice	
the molecules are more randomly arranged in ice than in water	
the molecules start moving when water becomes ice	
the molecules are arranged regularly in ice but not in water	
the molecules have more energy in ice than in water	

Q7.

The three states of matter are solid, liquid and gas.

What is the name of the change of state when a liquid changes into a solid?

(1)

- A** condensation
- B** evaporation
- C** freezing
- D** melting

