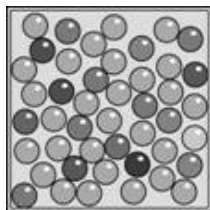


- Q1.** Marbles inside a box can be used as a model for the particles in a solid, a liquid or a gas.



Use words from the box to complete the following sentences. Each word can be used once, more than once or not at all.

gas	liquid	solid
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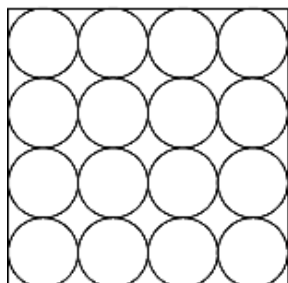
- (a) The particles in a vibrate about fixed positions. (1)
- (b) The particles in a move at high speed in any direction. (1)
- (c) The particles in a are arranged in a pattern. (1)

(Total 3 marks)

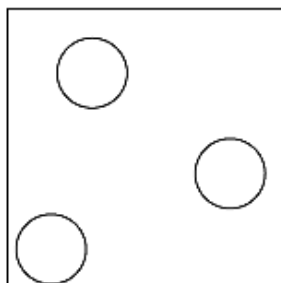
- Q2.** (a) The diagrams show the arrangement of the particles in a solid and in a gas.

Each circle represents one particle.

Solid

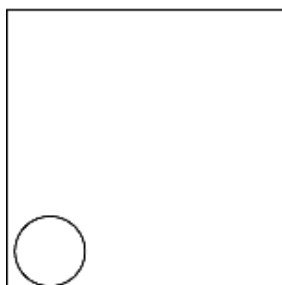


Gas



- (i) Complete the diagram below to show the arrangement of the particles in a liquid.

Liquid



(2)

- (ii) Explain, in terms of the particles, why gases are easy to compress.

.....

.....

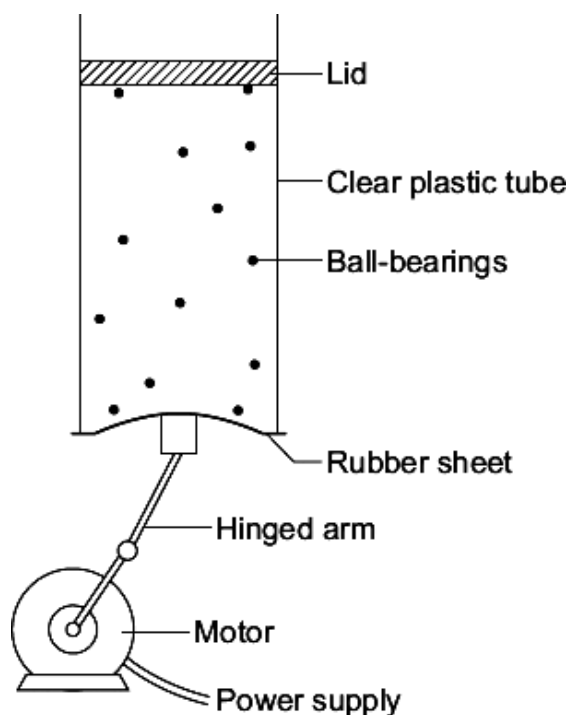
.....

.....

(2)

- (b) The diagram below shows the model that a science teacher used to show her students that there is a link between the temperature of a gas and the speed of the gas particles.

The ball-bearings represent the gas particles. Switching the motor on makes the ball-bearings move around in all directions.



- (i) How is the motion of the ball-bearings similar to the motion of the gas particles?

.....

.....

(1)

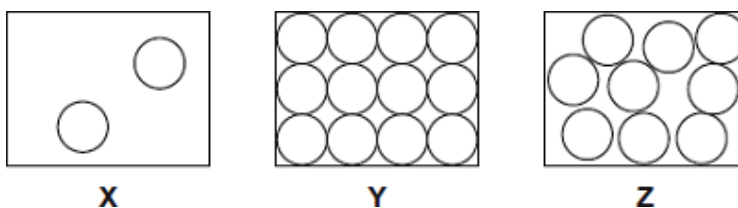
- (ii) The faster the motor runs, the faster the ball-bearings move. Increasing the speed of the motor is like increasing the temperature of a gas.

Use the model to predict what happens to the speed of the gas particles when the temperature of a gas is increased.

.....

(1)
 (Total 6 marks)

- Q3.** (a) The diagrams, **X**, **Y** and **Z**, show how the particles are arranged in the three states of matter.



- (i) Which **one** of the diagrams, **X**, **Y** or **Z**, shows the arrangement of particles in a liquid?

Write the correct answer in the box.

(1)

- (ii) Which **one** of the diagrams, **X**, **Y** or **Z**, shows the arrangement of particles in a gas?

Write the correct answer in the box.

(1)

- (b) Draw a ring around the correct answer in each box to complete each sentence.

- (i) In a gas, the particles are

vibrating in fixed positions.
 moving randomly.
 not moving.

(1)

(ii) In a solid, the forces between the particles are

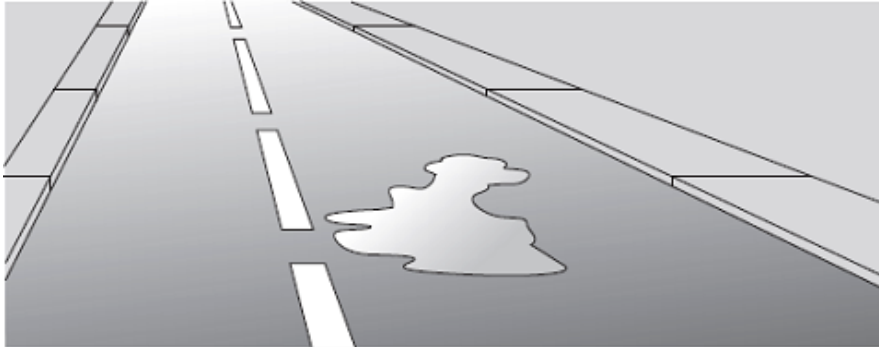
stronger than
equal to
weaker than

the forces between

the particles in a liquid.

(1)

(c) The picture shows a puddle of water in a road, after a rain shower.



(i) During the day, the puddle of water dries up and disappears. This happens because the water particles move from the puddle into the air.

What process causes water particles to move from the puddle into the air?

Draw a ring around the correct answer.

condensation

evaporation

radiation

(1)

(ii) Describe **one** change in the weather which would cause the puddle of water to dry up faster.

.....

.....

(1)

(Total 6 marks)

