Kinetic Particle Model of Matter

Question Paper

Course	CIE IGCSE Physics
Section	2. Thermal Physics
Topic	Kinetic Particle Model of Matter
Difficulty	Easy

Time Allowed 10

Score /4

Percentage /100

Question 1

A popular demonstration of kinetic theory is to view smoke particles through a microscope, while illuminating them with a bright light.

The diagram shows the view of the smoke particles through a microscope. They are moving about randomly.

What causes the motion of the smoke particles?

A. The smoke particles are attracted to each other.

B. The smoke particles vibrate because they are warm.

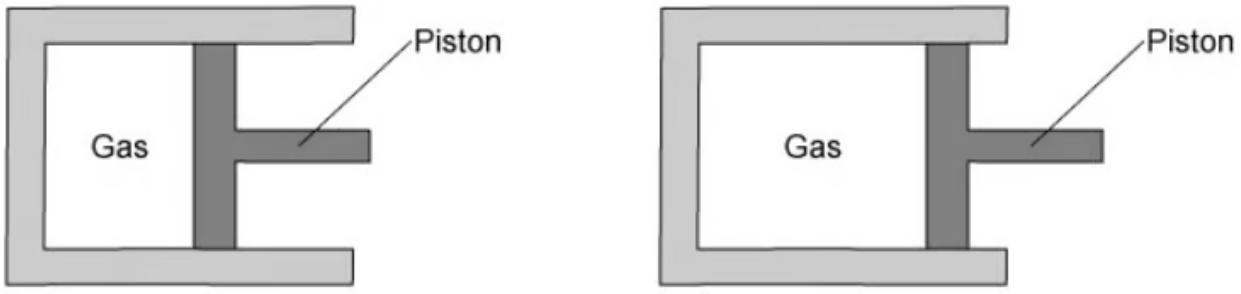
C. Smaller air particles are colliding with the smoke particles.

D. The microscope is vibrating slightly, making the smoke particles *appear* to move.

[1 mark]

Question 2

A sealed piston is used to expand a gas. No gas escapes during the process.



What happens to both the density of the gas and to its pressure when it is expanded in this way?

	Density	Pressure
A	stays the same	stays the same
B	increases	decreases
C	decreases	stays the same
D	decreases	decreases

[1 mark]

Question 3

Descriptions of two different states of matter are shown below.

To which state of matter do each of the descriptions fit?

X: the molecules are very close together, in fixed positions. They vibrate around these fixed positions.

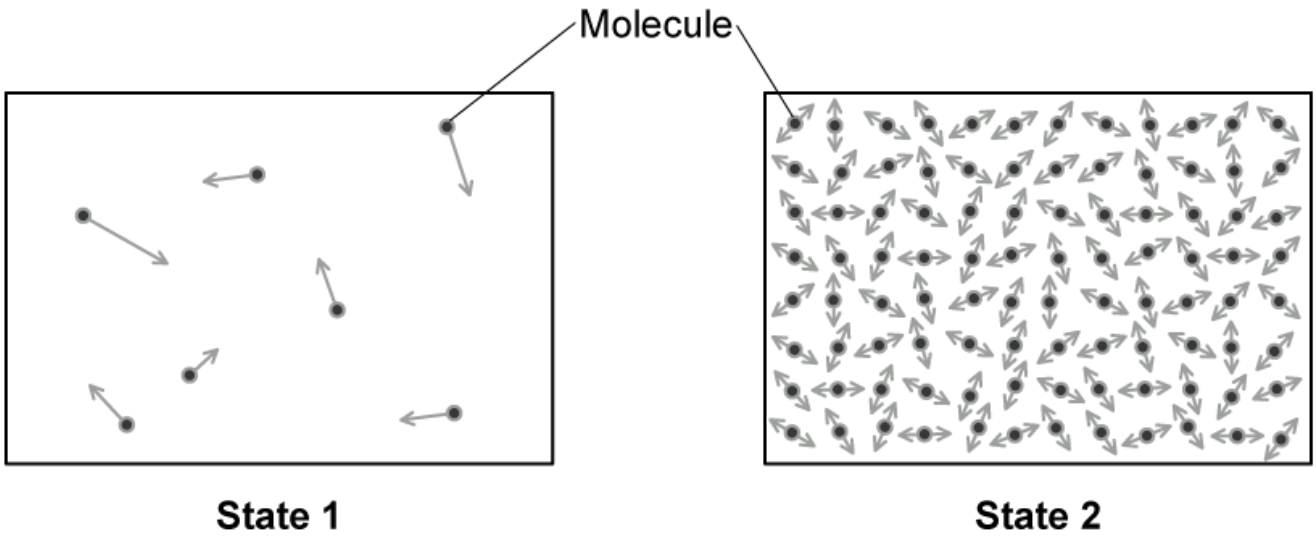
Y: the molecules move rapidly and randomly in straight lines until they collide with something. The molecules are spaced apart very far.

	State X	State Y
A	solid	liquid
B	solid	gas
C	liquid	gas
D	gas	liquid

[1 mark]

Question 4

The diagrams represent the molecules in two different states of matter. The arrows show the motion of the molecules.



Which state represents a solid?

A. state 1

B. neither

C. both

D. state 2

[1 mark]