

O Level Pure Chemistry MCQs

Kinetic Particle Theory Test 1.0

Q1

Which one of the following pairs of gases diffuses at the same speed?

- A nitrogen and oxygen
- B nitrogen and carbon monoxide
- C nitrogen and ammonia
- D nitrogen and nitrogen dioxide

Q2

Sulfur dioxide gas is over twice as dense as nitrogen gas. A gas jar of sulfur dioxide was placed on top of a gas jar of nitrogen gas with the open ends together.

After half an hour, which of these statements would be true?

- A The top gas jar contained nitrogen gas only.
- B Some of each gas would have moved into the other gas jar.
- C The gases would not have mixed.
- D The bottom gas jar would contain nearly all the sulfur dioxide

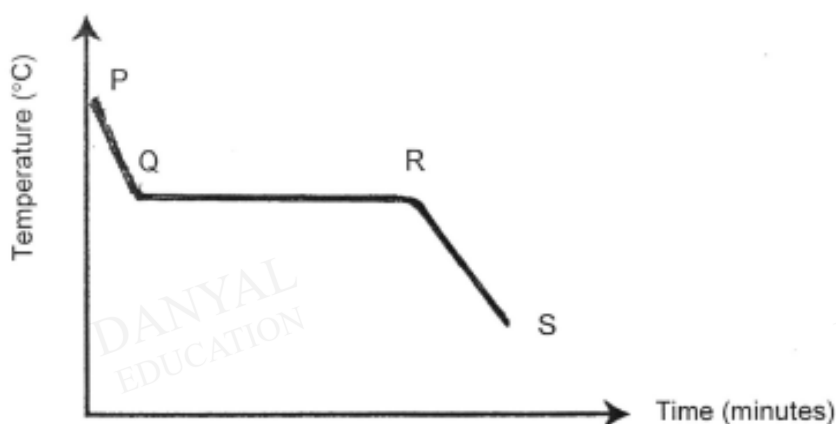
Q3

20 cm³ of ethene diffused through a porous pot in 40 seconds. How long will it take for 40 cm³ of carbon monoxide to diffuse under the same conditions of temperature and pressure?

- | | | | |
|---|------------|---|------------|
| A | 10 seconds | B | 20 seconds |
| C | 40 seconds | D | 80 seconds |

Q4

A sample of solid X was heated until it was completely melted. The graph shows how its temperature varies with time as molten X is cooled.



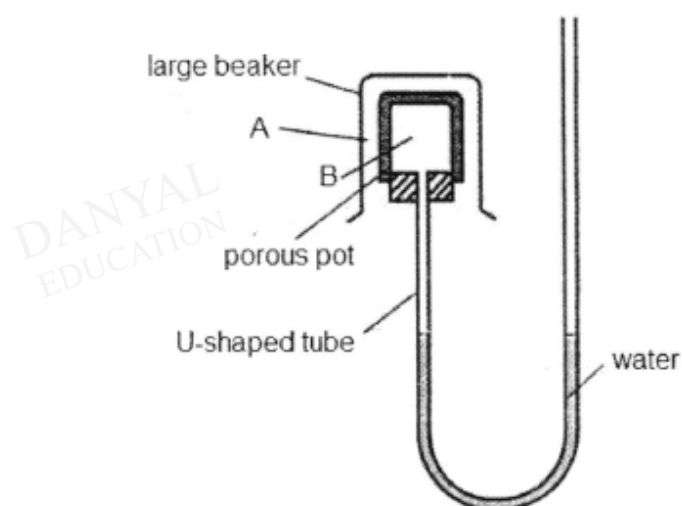
Which of the following statements are **true** about the particles in X?

- I They are closer to each other at stage RS than at stage PQ.
- II The forces of attraction are stronger at stage P than at stage S.
- III The arrangement is more orderly at stage RS than at stage PQ.
- IV Their total energy content at stage QR is lower than at stage RS.

- A I and II only are correct.
- B I and III only are correct.
- C II and III only are correct.
- D II and IV only are correct.

Q5

The following diagram shows a set up. Which pair of gases would cause a fall in the water level at the right side of the U-shaped tube?



- | | Gas A | Gas B |
|---|------------------|--------------|
| A | Nitrogen dioxide | Chlorine gas |
| B | Carbon Monoxide | Nitrogen gas |
| C | Oxygen gas | Neon |
| D | Fluorine gas | Argon |

Q6

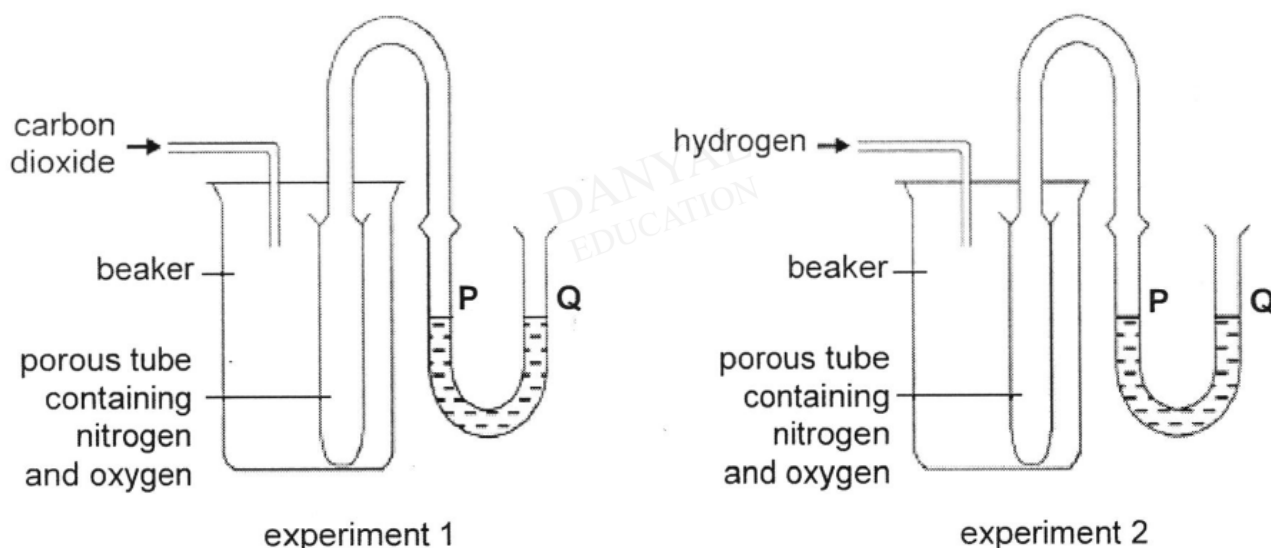
Liquid nitrogen, with a boiling point of -196°C , is often used as a coolant. It is observed that ice forms at the opening of a tank of liquid nitrogen after it is opened.

Which of the following is the best explanation for this observation?

- A Water trapped in the liquid nitrogen escapes and freezes.
- B Water vapour at 0°C is colder than liquid nitrogen and so it freezes.
- C The nitrogen boils in contact with air and then condenses to form a solid.
- D Water vapour in the air surrounding the opening of the liquid nitrogen freezes.

Q7

Two experimental set-ups used to demonstrate diffusion of gases are shown in the diagram below. What changes, if any, to the water levels at **P** and **Q** would you expect to see in both experiments?



	experiment 1	experiment 2
A	P is higher than Q	Q is higher than P
B	Q is higher than P	Q is higher than P
C	P and Q remain the same	P and Q remain the same
D	P and Q remain the same	Q is higher than P

Q8

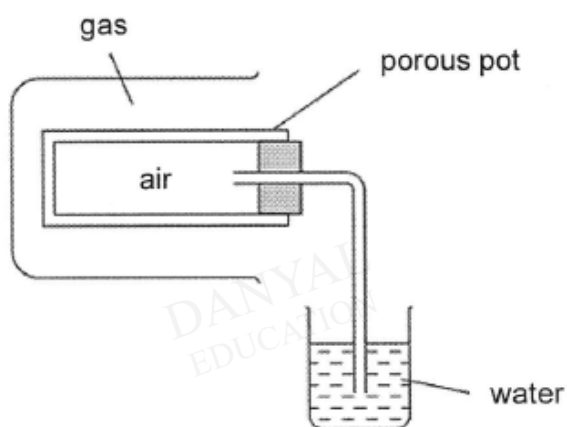
The sun-lit side of planet Venus has a temperature of 355 °C. The night side of the same planet has a temperature of -130 °C.

Which substance exists on one side of planet Venus as a liquid and the other side as a gas?

	melting point/ °C	boiling point/ °C
A	-210	-196
B	-183	-87
C	44	280
D	328	1744

Q9

The apparatus shown in the diagram was used to compare the rate of diffusion between a gas and air.



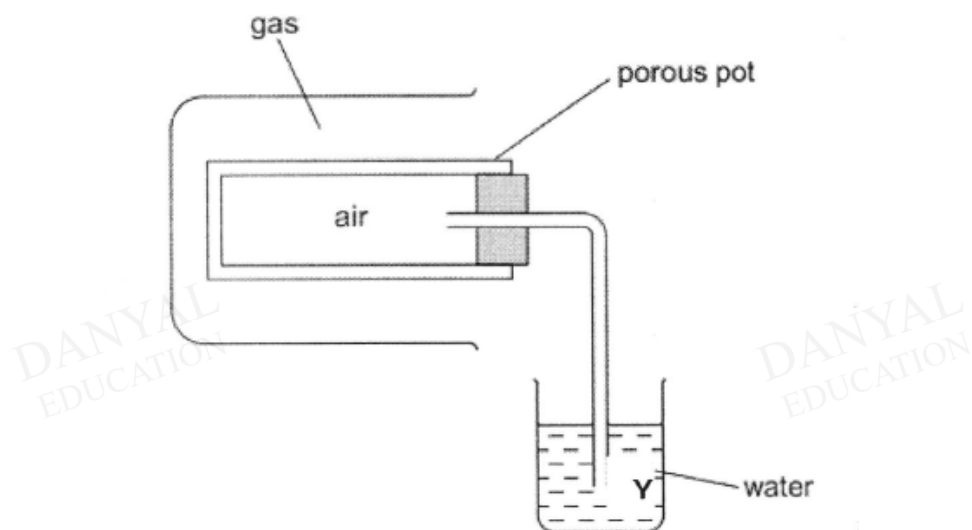
A beaker containing the gas was placed over the porous pot.

Which gas would cause bubbles to be observed in the beaker of water?

- A carbon dioxide
- B hydrogen
- C oxygen
- D sulfur dioxide

Q10

The apparatus shown in the diagram is used to compare the rate of diffusion of a gas with the rate of diffusion of air.



A beaker containing the gas was placed over the porous pot. Which gas is formed at Y?

- A carbon dioxide
- B hydrogen
- C oxygen
- D sulfur dioxide

Answers

Kinetic Particle Theory Test 1.0

- Q1 B
- Q2 B
- Q3 D
- Q4 B
- Q5 C
- Q6 D
- Q7 A
- Q8 B
- Q9 B
- Q10 B

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