

O Level Pure Chemistry MCQs

Kinetic Particle Theory Test 2.0

Q1

The boiling points of some elements are given in the table.

element	boiling point (°C)
X	- 138
Y	- 155
Z	- 143

A mixture of X, Y and Z is heated from $- 162\text{ }^{\circ}\text{C}$ to $- 142\text{ }^{\circ}\text{C}$.
Which element(s) would still remain as a liquid at $- 142\text{ }^{\circ}\text{C}$?

- A** X only **B** X and Y **C** Y and Z **D** X, Y and Z

Q2

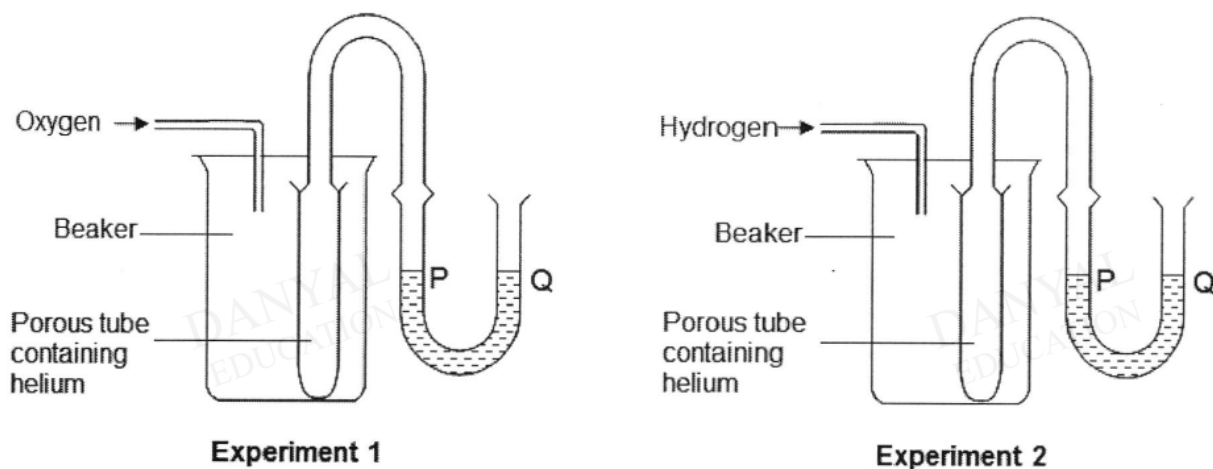
Which of the following decreases as the solid is being heated to become a liquid?

- A** the forces of attraction between the molecules
B the reactivity of the molecules
C the shape of the molecules
D the strength of the covalent bonds in the molecules

Q3

Two experiments, experiment 1 and 2, are set up to demonstrate the diffusion of gases.

What would happen to the water levels at P and Q in both experiments?



	Experiment 1	Experiment 2
A	P is higher than Q	P and Q remain the same
B	P is higher than Q	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	P is higher than Q

Q4

An experiment was carried out on three gases, D, E and F, which have relative molecular masses of 17, 28 and 71 (not necessarily in the correct order).

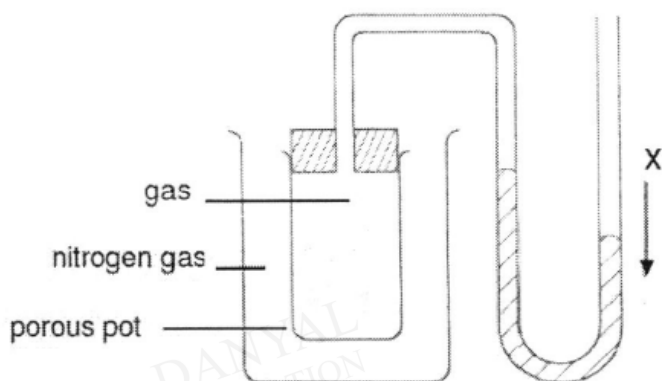
gas	effect on damp litmus paper
D	no effect on blue and red litmus paper
E	turns damp blue litmus paper red, then white
F	turns damp red litmus paper blue

Which row correctly shows the order of the rates of diffusion of the three gases?

	slowest	→	fastest
A	D	E	F
B	E	D	F
C	E	F	D
D	F	D	E

Q5

The following apparatus can be used to show the diffusion of gases.

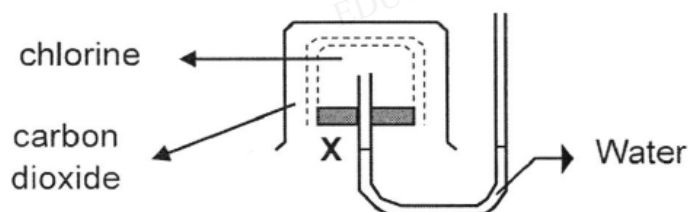


Which of the following gases will cause the liquid level in column X to fall as shown above?

- A ammonia
- B chlorine
- C hydrogen chloride
- D sulfur dioxide

Q6

A porous pot contains chlorine gas.

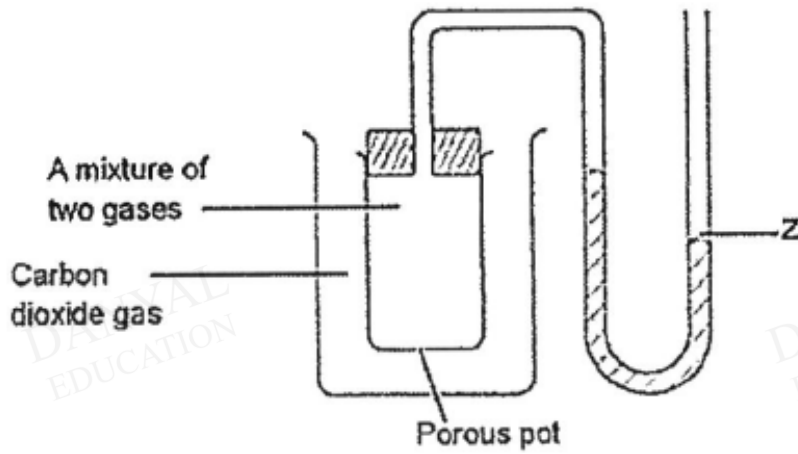


What would happen to the water level at X when a beaker of carbon dioxide was inverted over the pot?

- A X would fall only.
- B X would rise only.
- C X would fall, then rise after some time.
- D X would rise, then fall after some time.

Q7

The apparatus shown in the diagram below is set up with a mixture of two different gases present in the porous pot.



Which pair of gases present in the porous pot will cause the water level in column Z to rise after some time?

- A bromine and chlorine
- B methane and ethene
- C nitrogen and helium
- D propene and hydrogen

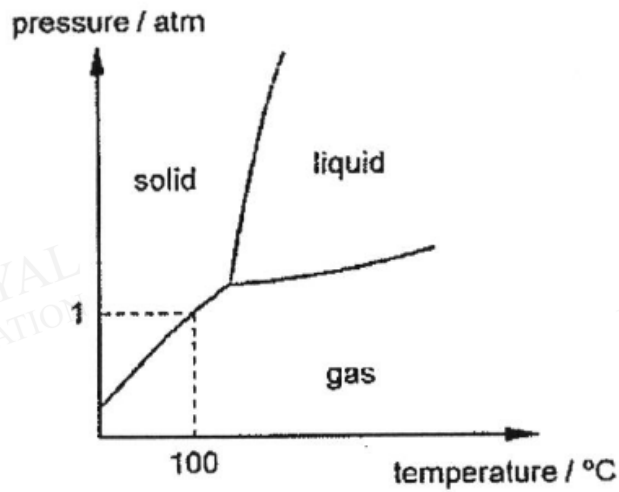
Q8

A fixed volume of nitrogen gas diffuses in 30 s. Which of the following is the time required for an equal volume of carbon monoxide to diffuse, under exactly the same conditions?

- | | |
|--------|--------|
| A 15 s | B 28 s |
| C 30 s | D 45 s |

Q9

The diagram below shows the state of a pure substance M at different pressures (atm) and temperature ($^{\circ}\text{C}$). The conditions for room temperature and pressure are given as 25°C and 1 atm.



What is the change in state when M is heated from room temperature to 100°C at 1 atm?

- | | | | |
|---|---------------|---|--------------|
| A | gas to liquid | B | gas to solid |
| C | liquid to gas | D | solid to gas |

Q10

Which diagram shows the process of diffusion?

A

B

C

D

key

○ } different atoms
 ● }

Answers

Kinetic Particle Theory Test 2.0

Q1 A

Q2 A

Q3 B

Q4 B

Q5 A

Q6 C

Q7 A

Q8 C

Q9 D

Q10 C

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