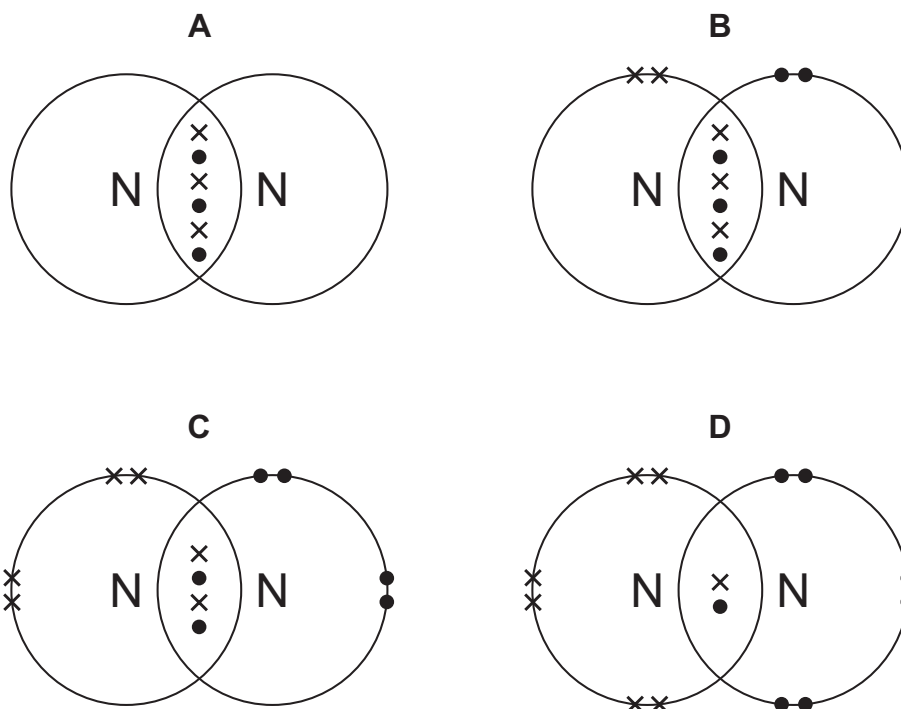


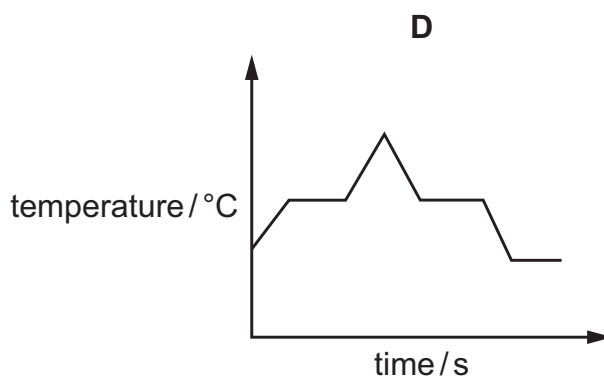
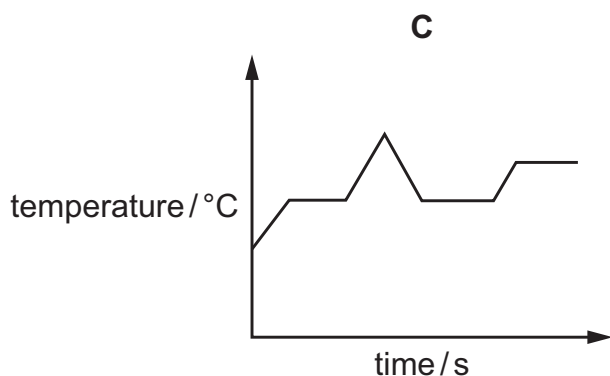
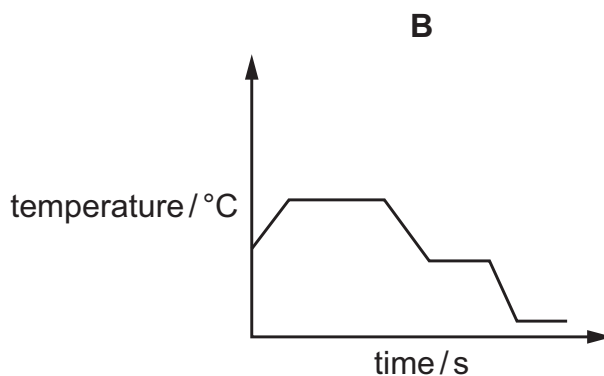
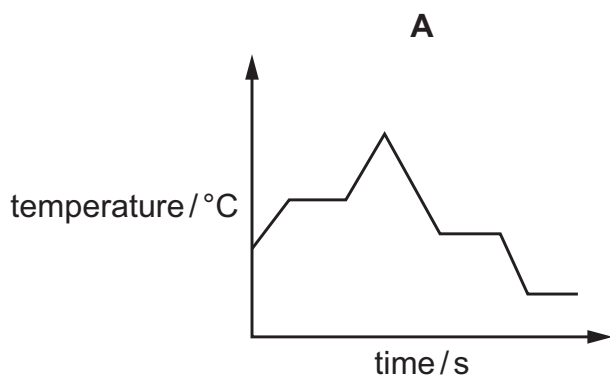
- 6 Which dot-and-cross diagram shows the outer shell electron arrangement in a molecule of nitrogen?



- 2 A sample of a liquid, X, is heated to a temperature above its boiling point.

X is then cooled, so that it condenses and then freezes.

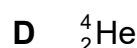
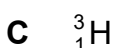
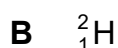
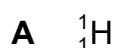
Which graph describes the change in temperature of X over time?



- 1 Which two changes, when applied **at the same time** to a fixed amount of gas, cause the greatest increase in volume of the gas?

	change in pressure	change in temperature
A	decrease by 10%	decrease by 10%
B	increase by 10%	decrease by 10%
C	decrease by 20%	increase by 10%
D	increase by 20%	increase by 10%

- 3 Which atom has twice as many neutrons as protons?

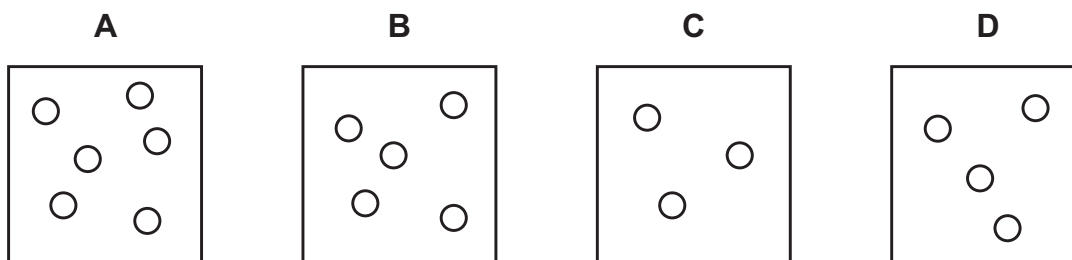


- 4 What is the nucleon number of an atom?

- A** the number of electrons, neutrons and protons in the nucleus
B the number of neutrons and protons in the nucleus
C the number of neutrons in the nucleus
D the number of protons in the nucleus

- 1 The diagrams show containers of gas at the same temperature. All containers have the same size.

Which container contains gas at the highest pressure?



- 1 A sealed balloon contains air.

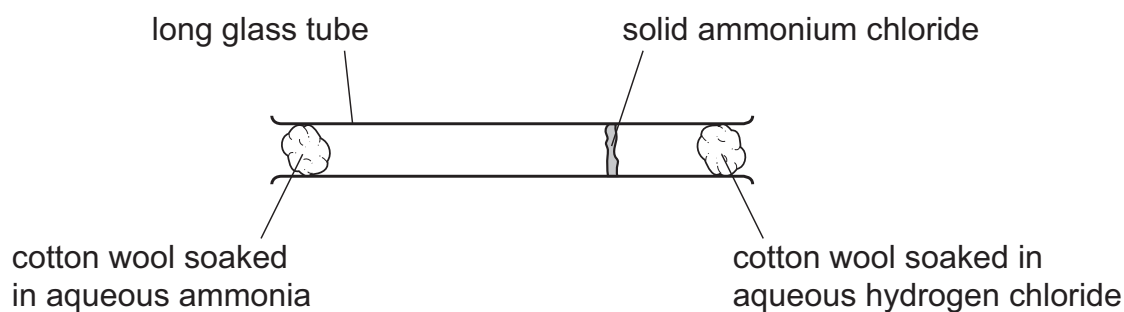
The temperature of the balloon is increased.

Which row describes how the pressure in the balloon and the kinetic energy of the particles in air change?

	pressure	kinetic energy of particles
A	decreases	decreases
B	increases	decreases
C	decreases	increases
D	increases	increases

- 2 Ammonia gas is reacted with hydrogen chloride gas using the apparatus shown.

Solid ammonium chloride is produced.



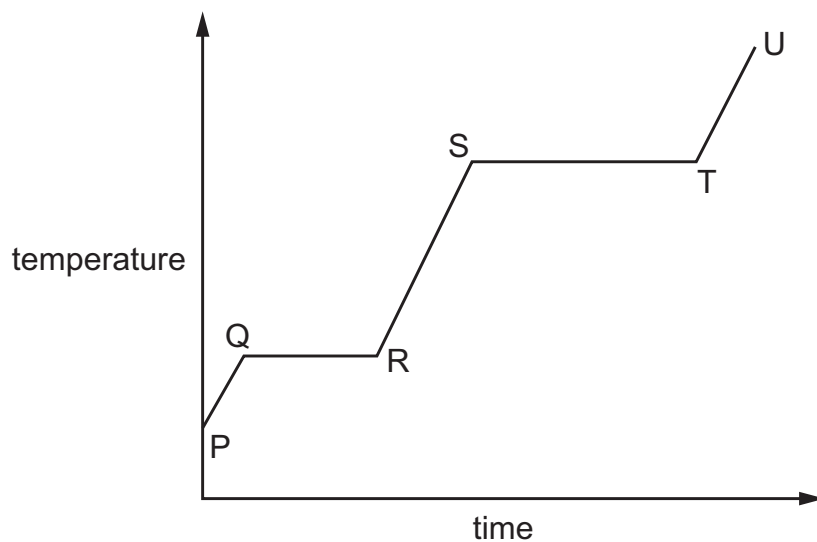
Which statement explains why the solid ammonium chloride is formed nearer to the hydrogen chloride?

- A** Aqueous ammonia is a base and aqueous hydrogen chloride is an acid.
B Ammonia molecules diffuse more slowly than hydrogen chloride molecules.
C Hydrogen chloride has a greater molecular mass than ammonia.
D Only ammonia molecules diffuse in all directions at the same time.

- 1 What happens to the volume of a fixed mass of gas when the temperature is increased or the pressure is decreased?

	increased temperature	decreased pressure
A	volume decreased	volume decreased
B	volume decreased	volume increased
C	volume increased	volume decreased
D	volume increased	volume increased

2 The diagram shows the heating curve for a substance.



Between which two points do the particles of the substance change from being in fixed positions to being mobile?

- A** P and Q **B** Q and R **C** S and T **D** T and U