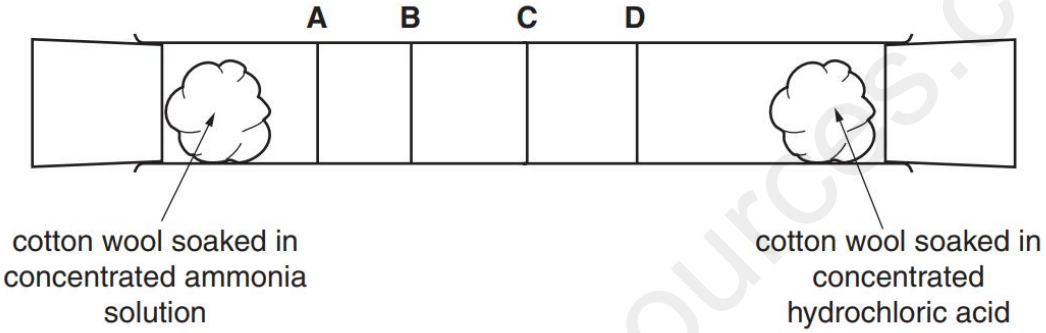
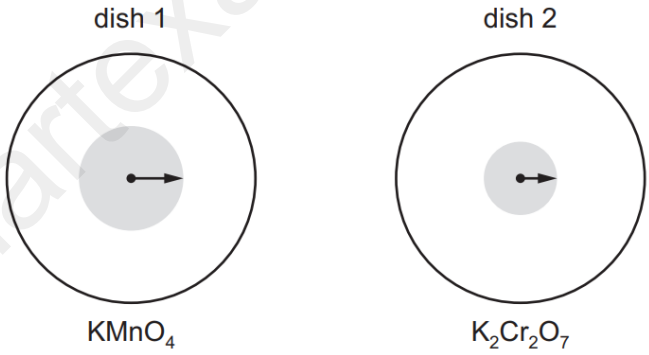
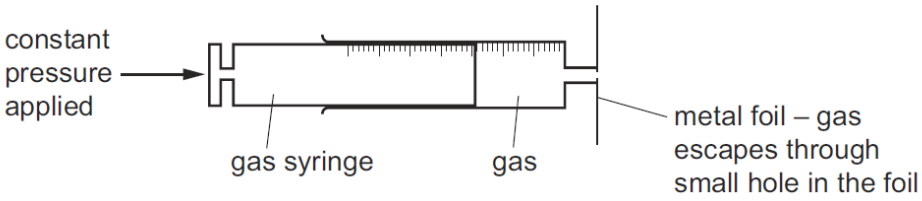
NO:	DIFFUSION-SET-1
1	The diagram shows the diffusion of hydrogen chloride and ammonia in a glass tube. The gases are given off by the solutions at each end of the tube. When hydrogen chloride and ammonia mix they produce a white solid, ammonium chloride. Which line shows where the white solid is formed? 
2	Small crystals of purple $KMnO_4$ (M_r = 158) and orange $K_2Cr_2O_7$ (M_r = 294) were placed at the centres of separate petri dishes filled with agar jelly. They were left to stand under the same physical conditions. After some time, the colour of each substance had spread out as shown.  The lengths of the arrows indicate the relative distances travelled by particles of each substance. Which statement is correct? **A** Diffusion is faster in dish 1 because the mass of the particles is greater. **B** Diffusion is faster in dish 2 because the mass of the particles is greater. **C** Diffusion is slower in dish 1 because the mass of the particles is smaller. **D** Diffusion is slower in dish 2 because the mass of the particles is greater.

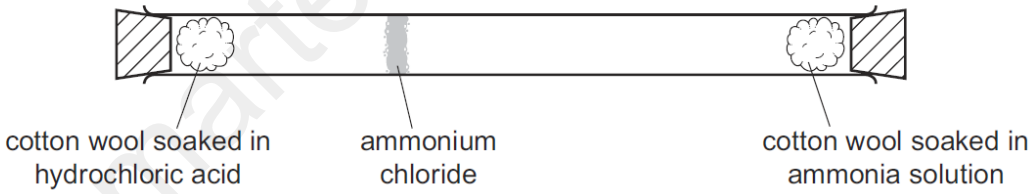
3 The rate of diffusion of two gases, methane, CH_4, and ethene, C_2H_4, is measured using the apparatus shown.



Which gas diffuses faster and why?

	gas that diffuses faster	reason
A	ethene	Ethene molecules are heavier and so move faster.
B	ethene	Ethene molecules have a double bond which makes them more reactive.
C	methane	Methane molecules are lighter and so move faster.
D	methane	Methane molecules are smaller so they can get out of the small hole more easily.

4 The diagram shows an experiment to demonstrate diffusion.



Which statement explains why the ring of ammonium chloride appears as shown?

A Ammonia solution only produces a gas which moves until it meets the hydrochloric acid.

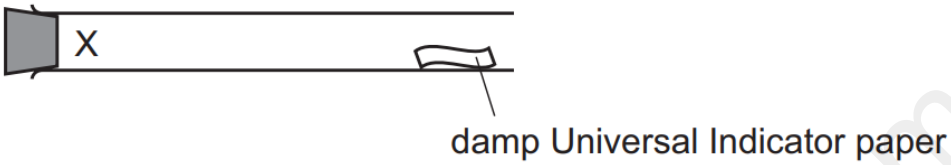
B Both solutions produce a gas, but ammonia moves quicker than hydrogen chloride because it is lighter.

C Hydrochloric acid produces hydrogen chloride which stays at one end of the tube until the ammonia reaches it.

D The two solutions run along the tube until they meet.

5

A gas is released at point X in the apparatus shown.



Which gas turns the damp Universal Indicator paper red most quickly?

A ammonia, NH_3

B chlorine, Cl_2

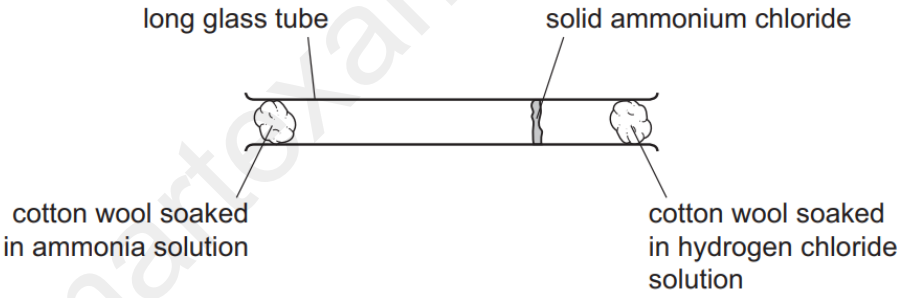
C hydrogen chloride, HCl

D sulfur dioxide, SO_2

6

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 Ammonia solution is a base and hydrogen chloride solution is an acid.

B Ammonia molecules diffuse more slowly than hydrogen chloride molecules.

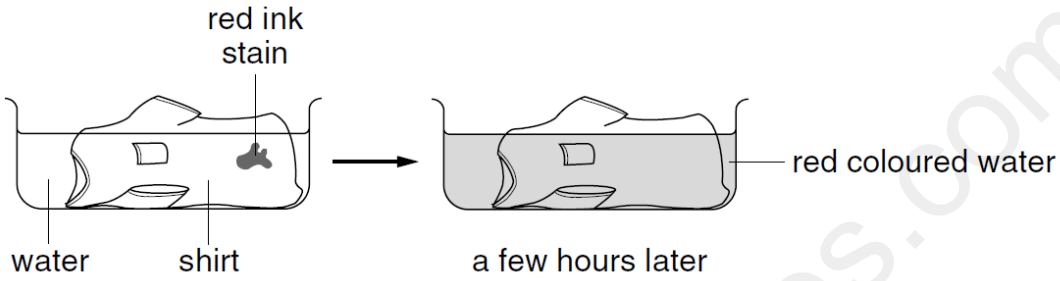
C Hydrogen chloride has a greater molecular mass than ammonia.

D Hydrogen chloride moves by Brownian motion.

7

A shirt is stained with red ink from a pen.

The shirt is left to soak in a bowl of water.



Which process causes the red colour to spread?

A diffusion

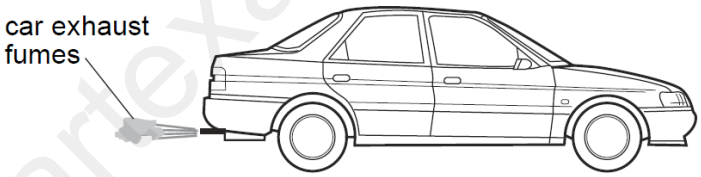
B evaporation

C melting

D neutralisation

8

Oxides of nitrogen from car exhausts can spread through the atmosphere.



This occurs because gas molecules move from a region of ……1…… concentration to a region of ……2…… concentration by a process called ……3…… .

Which words correctly complete the gaps?

	1	2	3
A	high	low	diffusion
B	high	low	evaporation
C	low	high	diffusion
D	low	high	evaporation

9	Which statement is an example of diffusion? **A** A kitchen towel soaks up some spilt milk. **B** Ice cream melts in a warm room. **C** Pollen from flowers is blown by the wind. **D** The smell of cooking spreads through a house.