

Ionic & Metallic Bonding

Question Paper

Level	A Level
Subject	Chemistry
Exam Board	Edexcel
Topic	Bonding & Structure
Sub Topic	Ionic & Metallic Bonding
Booklet	Question Paper
Paper Type	Multiple Choice

Time Allowed: 10 minutes

Score: /9

Percentage: /100

Grade Boundaries:

A*	A	B	C	D	E	U
>85%	77.5%	70%	62.5%	57.5%	45%	<45%

1 Which of the following equations has the correct state symbols for the reaction of dilute hydrochloric acid with magnesium oxide?



(Total for Question = 1 mark)

2 Which of the following observations provides the best evidence for the presence of ionic bonding in an unknown substance?

The substance conducts electricity

A in the solid state.

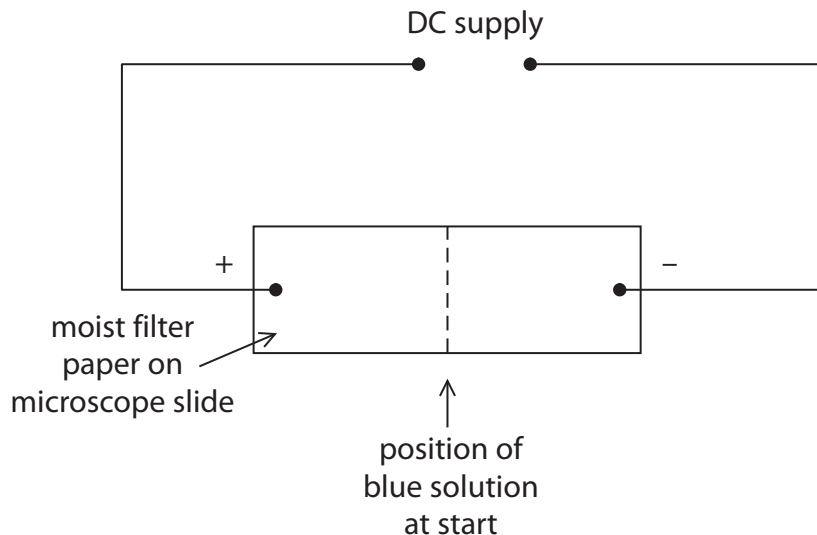
B in the solid state and in aqueous solution.

C in the solid state and when molten.

D when molten but not in the solid state.

(Total for Question = 1 mark)

- 3 A spot of blue solution was placed in the centre of a piece of moist filter paper supported on a microscope slide and the following experiment was carried out.



After some time, a blue colour moved towards the negative terminal, but no change was visible in the region of the positive terminal. This is because

- A the negative ions in the solution were colourless and the positive ions were blue.
- B the positive ions in the solution were colourless and the negative ions were blue.
- C the negative ions in the solution had not moved but the positive ions had moved.
- D the positive ions in the solution had not moved but the negative ions had moved.

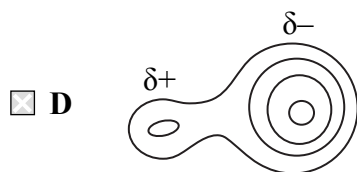
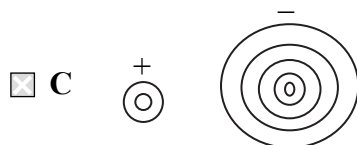
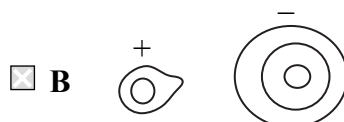
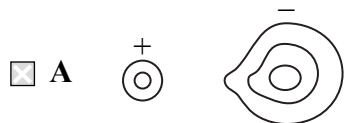
(Total for Question = 1 mark)

- 4 In which of the following compounds is the **anion** most polarized?

- A LiF
- B LiI
- C KF
- D KI

(Total for Question = 1 mark)

5 Which of these electron density maps best represents the bonding in the compound lithium iodide, LiI?



(Total for Question = 1 mark)

6 Metals are good conductors of electricity because

- A metal atoms are arranged in a regular lattice.
- B metal ions are very close to each other.
- C metal ions are free to move through the lattice.
- D electrons are free to move through the lattice.

(Total for Question = 1 mark)

7 Which of the following statements is evidence for the existence of ions in ionic compounds?

- A Ionic compounds, in the solid state, conduct electricity.
- B When **any** ionic compound in solution is electrolysed, the migration of ions can be seen.
- C In electron density maps for ionic compounds, there is no single line representing electron density that surrounds both cations and anions.
- D In electron density maps for ionic compounds, there are some single lines representing electron density that surround both cations and anions.

(Total for Question = 1 mark)

8 Metals usually have high melting temperatures and boiling temperatures because there are

- A strong attractions between the ions.
- B strong attractions between the delocalised electrons.
- C strong attractions between the ions and the delocalised electrons.
- D strong intermolecular forces.

(Total for Question = 1 mark)

9 The bonding in magnesium oxide, MgO, is

- A ionic.
- B metallic and ionic.
- C ionic and covalent.
- D metallic and covalent.

(Total for Question = 1 mark)