

Metallic Bonding

Question Paper

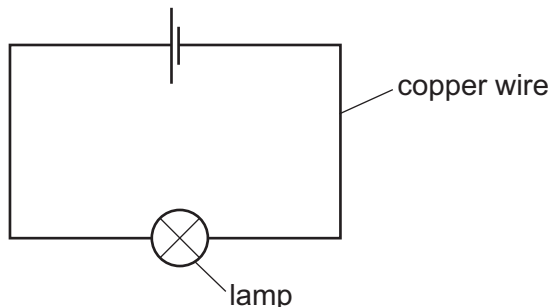
Level	O Level
Subject	Chemistry
Exam Board	Cambridge International Examinations
Topic	The Particulate Nature of Matter
Sub-Topic	Metallic Bonding
Booklet	Question Paper

Time Allowed: 10 minutes

Score: /8

Percentage: /100

1 Copper wire is used to complete an electrical circuit.



What happens in the copper wire?

- A Electrons move along the wire to the negative terminal. Positive ions stay in position.
- B Electrons move along the wire to the positive terminal. Positive ions move to the negative terminal.
- C Electrons move along the wire to the positive terminal. Positive ions stay in position.
- D Negative ions move along the wire to the positive terminal. Positive ions move to the negative terminal.

2 Which substance has metallic bonding?

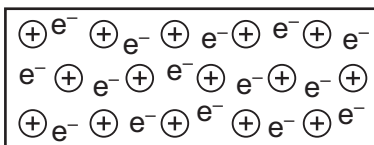
	conducts electricity		state of product formed on reaction with oxygen
	when solid	when liquid	
A	✓	✓	solid
B	✓	✓	gas
C	x	✓	no reaction
D	x	x	solid

3 A metal consists of a lattice of positive ions in a ‘sea of electrons’.

What happens to the electrons and positive ions in a metal wire when an electric current is passed through it?

	electrons	positive ions
A	replaced by new electrons	replaced by new ions
B	replaced by new electrons	unchanged
C	unchanged	replaced by new ions
D	unchanged	unchanged

4 Element X has a lattice of positive ions and a ‘sea of electrons’.



Which property will X have?

- A** It conducts electricity by the movement of ions and electrons.
- B** It has a high melting point.
- C** It is decomposed by an electric current.
- D** It is not malleable.

5 In which of the following is there a lattice of positive ions in a ‘sea of electrons’?

- A** liquid potassium chloride
- B** sand
- C** solid graphite
- D** solid magnesium

6 Below are two statements about metals.

- 1 Metals contain a lattice of negative ions in a 'sea of electrons'.
- 2 The electrical conductivity of metals is related to the mobility of the electrons in the structure.

Which is correct?

- A Both statements are correct and statement 1 explains statement 2.
- B Both statements are correct but statement 1 does not explain statement 2.
- C Statement 1 is correct and statement 2 is incorrect.
- D Statement 2 is correct and statement 1 is incorrect.

7 The conduction of electricity by metals is carried out by the movement of

- A electrons only.
- B electrons and positive ions.
- C negative ions only.
- D negative ions and positive ions.

8 All of the following substances can conduct electricity.

Which substance's conductivity is **not** due to the movement of electrons?

- A aluminium
- B graphite
- C lithium chloride
- D mercury