

# Properties of metals

## Question Paper 2

Level	IGCSE
Subject	Chemistry (0620/0971)
Exam Board	Cambridge International Examinations (CIE)
Topic	Metals
Sub-Topic	Properties of metals
Booklet	Question Paper 2

**Time Allowed:** 19 minutes

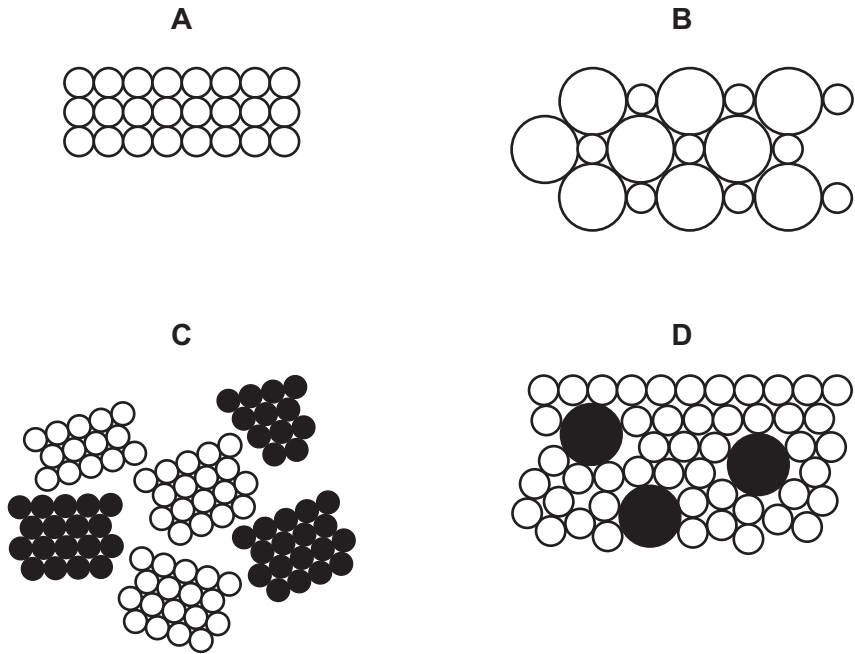
**Score:** /16

**Percentage:** /100

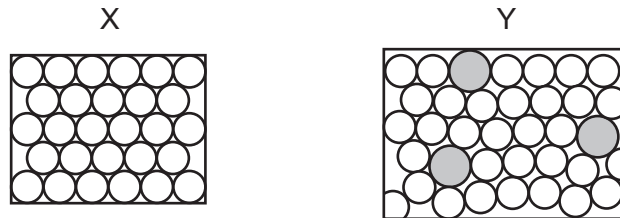
### Grade Boundaries:

9	8	7	6	5	4	3	2	1
>85%	75%	68%	60%	53%	48%	40%	33%	<25%

1. Which diagram represents an alloy?



2. The diagrams show the structure of two substances used to make electrical conductors.



Which statement correctly describes X and Y?

- A** X is a pure metal and Y is a compound.
- B** X is a pure metal and Y is an alloy.
- C** X is a solid and Y is a liquid.
- D** X is harder and stronger than Y.

3. Which statement is correct for **all** metals?

- A conduct electricity when molten
- B gain electrons when they form ions
- C have a low density
- D have a low melting point

4. Three students, X, Y and Z, were told that solid P reacts with dilute acids and also conducts electricity.

The table shows the students' suggestions about the identity of P.

X	Y	Z
copper	iron	graphite

Which of the students are correct?

- A X, Y and Z
  - B X only
  - C Y only
  - D Z only
5. Which property is **not** considered a typical metallic property?
- A good conductor of heat
  - B low melting point
  - C malleable (can be hammered into shape)
  - D strong

6. Some properties of substance X are listed.

- It conducts electricity when molten.
- It has a high melting point.
- It burns in oxygen and the product dissolves in water to give a solution with pH 11.

What is X?

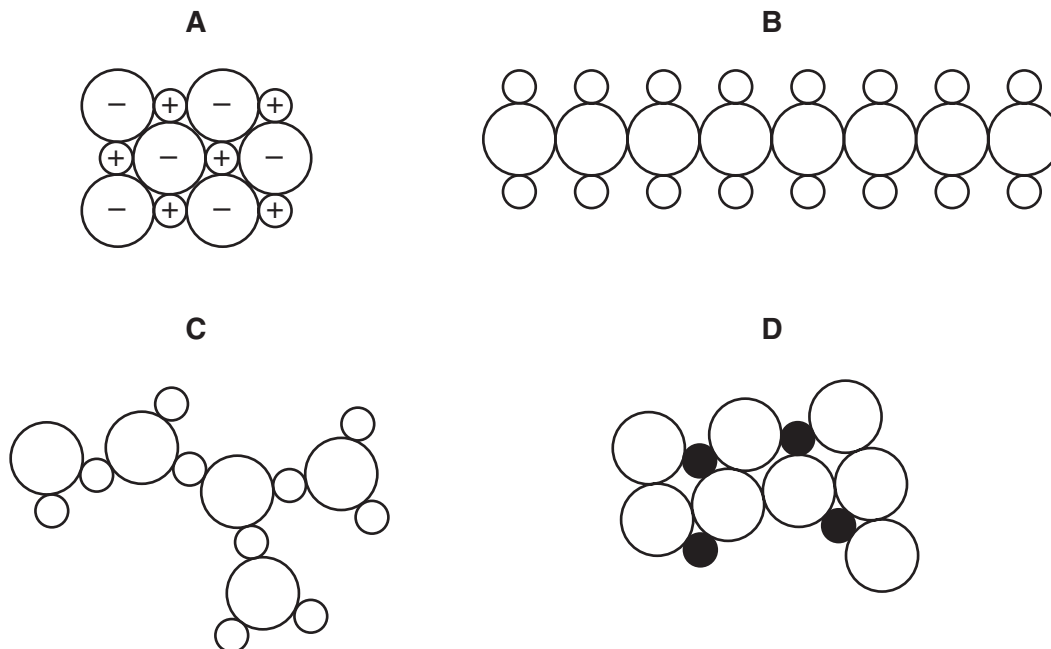
- A a covalent compound
- B a macromolecule
- C a metal
- D an ionic compound

7. Uranium is a radioactive element but it is also a typical metal.

What is **not** a property of uranium?

- A It can be hammered into shape.
- B It conducts heat.
- C It is used as a source of energy.
- D It forms covalent compounds.

8. Which diagram could represent the structure of an alloy?



9. What is a property of **all** metals?

- A** conduct electricity
- B** hard
- C** low melting points
- D** react with water

10. Which statement about the metal zinc is **not** correct?

- A** It forms an oxide more readily than iron.
- B** It is manufactured by the electrolysis of zinc blende.
- C** It is used to make brass.
- D** It is used to prevent iron from rusting.

11 Element E:

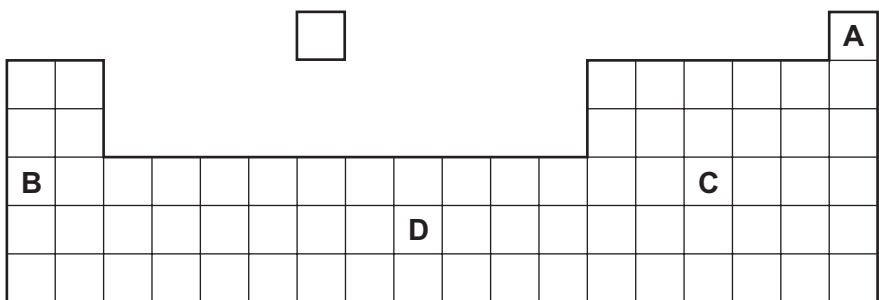
- forms an alloy
- has a basic oxide
- is below hydrogen in the reactivity series.

What is E?

- A carbon
- B copper
- C sulfur
- D zinc

12 Part of the Periodic Table is shown.

Which element is used as a catalyst?



The diagram shows a partial periodic table with the following structure:

- Row 1: 2 boxes on the left, 1 box in the middle, 6 boxes on the right. The rightmost box is labeled **A**.
- Row 2: 2 boxes on the left, 10 boxes in the middle, 6 boxes on the right.
- Row 3: 2 boxes on the left, 10 boxes in the middle, 6 boxes on the right. The first box on the left is labeled **B**, and the fourth box from the left in the middle section is labeled **D**.
- Row 4: 2 boxes on the left, 10 boxes in the middle, 6 boxes on the right. The fourth box from the left in the middle section is labeled **C**.

13 Which statement about **all** metals is correct?

- A They are attracted to a magnet.
- B They are weak and brittle.
- C They may be used to form alloys.
- D They react with water.

14 Tin is a metal that is less reactive than iron and is extracted from its ore cassiterite,  $\text{SnO}_2$ .

Which statements about tin are correct?

- 1 Tin can be extracted from cassiterite using carbon.
- 2 Tin does not conduct electricity.
- 3 Tin is hard and shiny.

A 1,2 and 3      B 1 and 2 only      C 1 and 3 only      D 2 and 3 only

15 Which statement about metals is **not** correct?

- A Metals are malleable because the metal ions can slide over one another.
- B Metals conduct electricity because electrons can move through the lattice.
- C Metals consist of a giant lattice of metal ions in a 'sea of electrons'.
- D Metals have high melting points because of the strong attraction between the metal ions.

16 Which statement describes metallic bonding?

- A The attraction between a lattice of negative ions and delocalised protons.
- B The attraction between a lattice of positive ions and delocalised electrons.
- C The attraction between delocalised protons and electrons.
- D The attraction between oppositely charged ions.