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CHEMISTRY

INORGANIC CHEMISTRY

Level & Board	AQA (A-LEVEL)
TOPIC:	PERIODICITY
PAPER TYPE:	QUESTION PAPER - 2
TOTAL QUESTIONS	10
TOTAL MARKS	38

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Periodicity - 2

1. This question is about the elements in Period 3 from Na to P

(a) Explain the meaning of the term first ionisation energy.

(2)

(b) State and explain the general trend in first ionisation energies for the elements Na to P

(3)

(c) State which one of the elements from Na to P has the highest melting point and explain your answer.

(3)

(d) State which one of the elements from Na to P deviates from this general trend and explain why this occurs.

2. Which of these Period 3 elements has the highest melting point?

- A. Aluminium
- B. Phosphorus
- C. Sodium
- D. Sulfur

(3)

3. This question is about metals.

- (a) Write the electronic configuration of aluminium.
State the block in the Periodic Table to which it belongs.

(1)

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(2)

(b) Describe the bonding in metals.

(2)

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(c) Explain why the melting point of magnesium is higher than that of sodium.

(3)

(d) Explain how metals conduct electricity.

(2)

4. Which element has a first ionisation energy lower than that of sulfur?

- A. Chlorine
- B. Oxygen
- C. Phosphorus
- D. Selenium

(1)

5. State the meaning of the term electronegativity and explain the trend in electronegativity values across Period 3 from sodium to chlorine.

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(5)

6. Which element has the highest first ionisation energy?

- A. Aluminium
- B. Phosphorus
- C. Silicon
- D. Sulfur

(1)

7. This question is about periodicity.

(a) Explain why the atomic radii of the elements decrease across Period 2.

(2)

(b) Explain why metal oxide forms an alkaline solution when it reacts with water.

(2)

8. Which of these elements has the highest melting point?

- A. Argon
- B. Chlorine
- C. Silicon

D. Sulfur

(1)

- 9.** Explain why less energy is needed to ionise gaseous atoms of rubidium than gaseous atoms of sodium.

(4)

- 10.** Which represents the correct order of increasing radius of the ions?

- A.** $F^- O^{2-} Li^+ Be^{2+}$
- B.** $Li^+ Be^{2+} O^{2-} F^-$
- C.** $Be^{2+} Li^+ F^- O^{2-}$
- D.** $O^{2-} F^- Li^+ Be^{2+}$

(1)

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- Founder & CEO of Chemistry Online Tuition Ltd.
- Completed Medicine (M.B.B.S) in 2007
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