



**CHEMISTRY ONLINE**  
— **TUITION** —

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# CHEMISTRY

## INORGANIC CHEMISTRY

Level & Board	AQA (A-LEVEL)
TOPIC:	PERIODICITY
PAPER TYPE:	QUESTION PAPER - 3
TOTAL QUESTIONS	10
TOTAL MARKS	33

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## Periodicity - 3

1. Explain the meaning of the term periodicity as applied to the properties of rows of elements in the Periodic Table.

2. Which ion has the largest radius?

- A.  $F^-$
- B.  $Mg^{2+}$
- C.  $Na^+$
- D.  $O^{2-}$

(2)

3. Describe and explain the trends in atomic radius for the elements sodium to argon.

(1)

4. Which element is classified as a d block element?

(5)

I am Sorry !!!!!

- A. Antimony
- B. Molybdenum
- C. Strontium
- D. Uranium

(1)

5. Describe and explain the trends in electronegativity for the elements sodium to argon.

(4)

6. Which element in Period 3 has the highest melting point?

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

(1)

7. This question is about the elements in Period 3 of the Periodic Table.

- (a) State the element in Period 3 that has the highest melting point.  
Explain your answer.

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(3)

**(b)** State the element in Period 3 that has the highest first ionisation energy. Explain your answer.

(3)

**(c)** Suggest the element in Period 3 that has the highest electronegativity value.

(1)

8. The elements in Period 2 show periodic trends.

**(a)** Identify the Period 2 element, from carbon to fluorine that has the largest atomic radius. Explain your answer.

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(3)

**(b)** State the general trend in first ionisation energies from carbon to neon.

Deduce the element that deviates from this trend and explain why this element deviates from the trend.

9. Chlorine is a Period 3 element.

(4)

Chlorine forms the molecules  $\text{ClF}_3$  and  $\text{CCl}_2$

(a) Use your understanding of electron pair repulsion to draw the shape of  $\text{ClF}_3$  and the shape of  $\text{CCl}_2$ . Include any lone pairs of electrons that influence the shape.  $\text{CCl}_2$

(b) Name the shape of  $\text{CCl}_2$

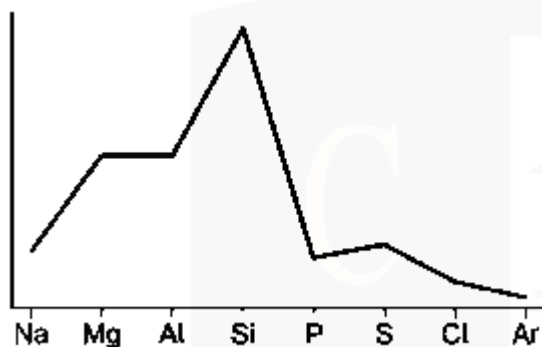
(2)

(1)

(c) Write an equation to show the formation of one mole of  $\text{ClF}_3$  from its elements.

(1)

10. The diagram shows how a property of Period 3 elements varies across the period. What is the property?



- A. Atomic radius
- B. Electronegativity
- C. First ionisation energy
- D. Melting point

(1)

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- Completed Medicine (M.B.B.S) in 2007
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- CIE & EDEXCEL Examiner since 2015
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