

SMART EXAM RESOURCES
9701 AS CHEMISTRY TOPIC QUESTIONS
TOPIC: ATOMIC STRUCTURE
SUB-TOPIC: DEDUCE FORMULA FROM IONISATION ENERGIES
SET-1

1.4.5-Deduce-Formula-From-Ionisation-Energies-Set-1-qp-ms

1.

The table gives the successive ionisation energies for an element X.

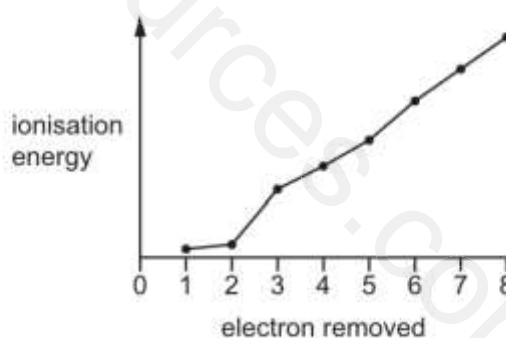
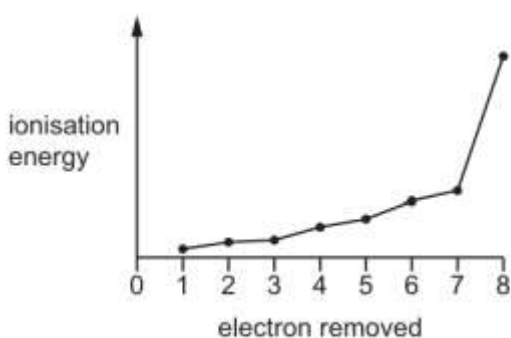
	1st	2nd	3rd	4th	5th	6th
ionisation energy / kJ mol^{-1}	950	1800	2700	4800	6000	12 300

What could be the formula of a chloride of X?

- A** XCl **B** XCl_2 **C** XCl_3 **D** XCl_4

2.

The first eight successive ionisation energies for two elements of Period 3 of the Periodic Table are shown in the graphs.



What is the formula of the ionic compound formed from these elements?

- A** MgCl_2 **B** CaBr_2 **C** Na_2S **D** K_2Se

3.

The table gives the successive ionisation energies for an element X.

	1st	2nd	3rd	4th	5th	6th
ionisation energy / kJ mol^{-1}	950	1800	2700	4800	6000	12300

What could be the formula of the chloride of X?

- A** XCl **B** XCl_2 **C** XCl_3 **D** XCl_4

4.

The first four ionisation energies for element X are shown in the table.

ionisation energy	1st	2nd	3rd	4th
value / kJ mol^{-1}	577	1980	2960	6190

Which ion of X is produced by removing an electron from a filled shell?

- A** X^+ **B** X^{2+} **C** X^{3+} **D** X^{4+}

5.

Use of the Data Booklet is relevant to this question.

From which particle is the removal of an electron the most difficult?

- A** $\text{Cl}^-(\text{g})$ **B** $\text{F}^-(\text{g})$ **C** $\text{K}^+(\text{g})$ **D** $\text{Na}^+(\text{g})$

6.

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value / kJ mol^{-1}	577	1980	2960	6190

Which ion of X is produced by removing an electron from a filled shell?

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