

23 The ions formed when element X and element Y react together are shown.

- Element X forms X^- ions.
- Element Y forms Y^{2+} ions.

Which row identifies the position of X and of Y in the Periodic Table?

	X	Y
A	Group I	Group VI
B	Group VII	Group II
C	Group VII	Group VI
D	Group I	Group II

23 The Periodic Table shows the position of four different elements.

A 10x10 grid representing a periodic table. The grid is divided into four main regions by a large gap in the top row and a large gap in the middle row. The regions are labeled as follows:

- Region A:** The top-left 2x2 block of cells, labeled 'A' in the top-left cell.
- Region B:** The top-right 2x2 block of cells, labeled 'B' in the top-right cell.
- Region C:** The middle-left 2x2 block of cells, labeled 'C' in the middle-left cell.
- Region D:** The middle-right 2x2 block of cells, labeled 'D' in the middle-right cell.

The grid is composed of 10 columns and 10 rows. The top row has a gap in the middle, and the middle row has a gap in the middle. The regions A, B, C, and D are defined by the following coordinates (row, column):

- Region A: (1, 1), (1, 2), (2, 1), (2, 2)
- Region B: (1, 8), (1, 9), (2, 8), (2, 9)
- Region C: (3, 1), (3, 2), (4, 1), (4, 2)
- Region D: (3, 8), (3, 9), (4, 8), (4, 9)

Which row is correct?

	element	number of electrons in the outer shell
A	non-metal	1
B	metal	5
C	metal	2
D	non-metal	7

21 The properties of the elements change from left to right across the Periodic Table.

Which statement describes how the properties change across Period 3?

- A** Elements change from gases to solids.
- B** Elements change from non-conductors to electrical conductors.
- C** Elements change from metal to non-metal.
- D** Elements have a decreasing number of electron shells.

22 Element X is in the same group of the Periodic Table as silicon.

An atom of element X has more protons than a silicon atom.

Which element could be X?

- A** aluminium
- B** carbon
- C** germanium
- D** phosphorus

25 The elements oxygen and sulfur are in the same group of the Periodic Table.

Which statement about oxygen and sulfur is **not** correct?

- A** They are non-metals.
- B** They have giant covalent structures.
- C** They have six electrons in the outer electron shells of their atoms.
- D** They react together to form an acidic oxide.