QUESTION

8 **a** An element has the electronic configuration $1s^2 2s^2 2p^6 3s^2 3p^6 3d^{10} 4s^2 4p^6 4d^{10} 5s^2 5p^5$.

i Which block in the Periodic Table does this element belong to?

ii Which group does it belong to?

iii Identify this element.

b Which block in the Periodic Table does the element with the electronic configuration $1s^2 2s^2 2p^6 3s^2 3p^6 3d^5 4s^1$ belong to?

QUESTION

9 Write electronic configurations for the following ions:

a Al^{3+} ($Z = 13$)

b O^{2-} ($Z = 8$)

c Fe^{3+} ($Z = 26$)

d Cu^{2+} ($Z = 29$)

e Cu^{+} ($Z = 29$)

7 a The table shows the first five ionisation energies for five elements (A to E). For each one state which group the element belongs to. [5]

Element	Ionisation energy / kJ mol^{-1}				
	1st	2nd	3rd	4th	5th
A	786.5	1577.1	3231.6	4355.5	16091
B	598.8	1145.4	4912	6491	8153
C	496	4562	6910	9543	13354
D	1087	2353	4621	6223	37831
E	578	1817	2744	11577	14842

b Explain your reasoning behind your answer for element E. [1]