

Valence Electrons and Electrons Configuration

1 In the space below, write the unabbreviated electron configuration of the following elements.

a Sodium _____

c Manganese _____

b Iron _____

d Bromine _____

2 In the space below, write the abbreviated electron configuration of the following elements.

a Cobalt _____

c Iodine _____

b Silver _____

d Arsenic _____

3 Fill in the electrons for the following elements. How many valence electron does each electron have?

C: 1s ____ 2s ____ 2p _____ 3s ____ 3p ____ . Number ____

Cl: 1s ____ 2s ____ 2p _____ 3s ____ 3p ____ . Number ____

Li: 1s ____ 2s ____ 2p _____ 3s ____ 3p ____ . Number ____

Ar: 1s ____ 2s ____ 2p _____ 3s ____ 3p ____ . Number ____

4 Fill in the table.

Symbol	Number of protons	Number of electrons	Number of valance electrons
Mg ²⁺			
O			
N ³⁻			
Ar			
I			

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Answers

1 In the space below, write the unabbreviated electron configuration of the following elements.

a Sodium $1s^2 2s^2 2p^6 3s^1$

c Manganese $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 4d^5$

b Iron $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^6$

d Bromine $1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^{10} 4p^5$

2 In the space below, write the abbreviated electron configuration of the following elements.

a Cobalt $[Ar] 4s^2 3d^7$

c Iodine $[Kr] 4s^2 4d^{10} 5p^5$

b Silver $[Kr] 5s^2 4d^9$

d Arsenic $[Kr] 5s^2 4d^{10} 5p^3$

3 Fill in the electrons for the following elements. How many valence electron does each electron have?

C: 1s $\uparrow\downarrow$ 2s $\uparrow\downarrow$ 2p \uparrow \uparrow 3s 3p . Number 4

Cl: 1s $\uparrow\downarrow$ 2s $\uparrow\downarrow$ 2p $\uparrow\downarrow$ $\uparrow\downarrow$ $\uparrow\downarrow$ 3s $\uparrow\downarrow$ 3p $\uparrow\downarrow$ $\uparrow\downarrow$ \uparrow . Number 7

Li: 1s $\uparrow\downarrow$ 2s \uparrow 2p 3s 3p . Number 1

Ar: 1s $\uparrow\downarrow$ 2s $\uparrow\downarrow$ 2p $\uparrow\downarrow$ $\uparrow\downarrow$ $\uparrow\downarrow$ 3s $\uparrow\downarrow$ 3p $\uparrow\downarrow$ $\uparrow\downarrow$ $\uparrow\downarrow$. Number 8

4 Fill in the table.

Symbol	Number of protons	Number of electrons	Number of valance electrons
Mg ²⁺	12	10	8
O	8	8	6
N ³⁻	7	10	8
Ar	18	18	8
I ⁻	53	54	8