

Key

Worksheet 5-electron configuration

$1s^2 2s^2 2p^6 3s^2 2p^6 4s^2 3d^7$

1. Write the electron configuration for Co.

Orbital notation:

$\frac{1\downarrow}{1s} \frac{1\downarrow}{2s} \frac{1\downarrow}{2p} \frac{1\downarrow}{2p} \frac{1\downarrow}{2p} \frac{1\downarrow}{3s} \frac{1\downarrow}{3p} \frac{1\downarrow}{3p} \frac{1\downarrow}{3p} \frac{1\downarrow}{4s} \frac{1\downarrow}{3d} \frac{1\downarrow}{3d} \frac{1}{3d} \frac{1}{3d} \frac{1}{3d}$

2. What element is depicted by this orbital notation?

$\frac{1\downarrow}{1s} \frac{1\downarrow}{2s} \frac{1\downarrow}{2p} \frac{1\downarrow}{2p} \frac{1\downarrow}{2p} \frac{1\downarrow}{3s} \frac{1\downarrow}{3p} \frac{1\downarrow}{3p} \frac{1\downarrow}{3p} \frac{1\downarrow}{4s} \frac{1\downarrow}{3d} \frac{1\downarrow}{3d} \frac{1\downarrow}{3d}$

Zinc (Zn)

3. For the following elements / ions, write down the electron configuration & the number of valence electrons.

Element/Ion	Electron Configuration	Valence Electrons
F	$1s^2 2s^2 2p^5$	7
C	$1s^2 2s^2 2p^2$	4
Si	$1s^2 2s^2 2p^6 3s^2 3p^2$	4
Mn	$1s^2 2s^2 2p^6 3s^2 3p^6 4s^2 3d^5$	7
Be	$1s^2 2s^2$	2
Ne	$1s^2 2s^2 2p^6$	8
Al	$1s^2 2s^2 2p^6 3s^2 3p^1$	3
O	$1s^2 2s^2 2p^4$	6