

SSLC -Chemistry -Class -09**Periodic Table and electronic Configuration****d Block elements**

3	4	5	6	7	8	9	10	11	12
Sc	Ti	V	Cr	Mn	Fe	Co	Ni	Cu	Zn
Y	Zr	Nb	Mo	Tc	Ru	Rh	Pd	Ag	Cd
La	Hf	Ta	W	Re	Os	Ir	Pt	Au	Hg
Ac	Rf	Db	Sg	Bh	Hs	Mt	Ds	Rg	Cn

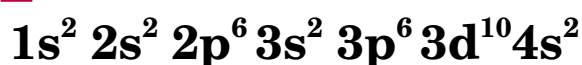
The d block elements are found in groups 3 to 12 of the periodic table.

The d block elements are those in which the last electron is filled in the d subshell of the penultimate shell.

Group number of d block Elements

The group number of the d block elements will be the same as the sum of electrons in the outermost s subshell and the number of electrons in the preceding d subshell.

Eg: $_{30}\text{Zn}$ - Subshell Electronic configuration .



Group number :10+2=12

Properties of d block elements

*** These are metals.**

***The last electron is filled in the penultimate shell.**

***These are found in groups 3 to 12 of the periodic table.**

***They shows similarities in periods and groups .**

Eg: FeCl₂ -Oxidation state of Fe +2

FeCl₃ -Oxidation state of Fe +3

*** They forms Coloured compounds.**

**Eg : Copper Sulphate (CuSO₄)-Blue colour
d Block element - Cu**

**Manganese dioxide (MnO₂)- Black colour
d block element - Mn**

Properties of f block elements

*** They shows variable oxidation states..**

*** Most of the actinoids are radioactive and are artificial elements.**

*** Uranium (U), Thorium (Th), Plutonium(Pu) etc. are used as fuels in nuclear reactors.**

***Many of them are used as catalysts in the petroleum industry.**

Questions

1. Certain sub shells are given below.

a) Which are the sub shells that are not possible?

(2s, 2d, 3f, 3d, 5s, 3p)

2. The d block elements are found in groups of the periodic table

(1 to 2, 3 to 12 , 13 to 18)

3. Find out the oxidation state of Mn in MnO_2 .

4. Write any two properties of f block elements.
