

LOCATOR THEORY FOR ELEMENTS IN PERIODIC TABLE “LEPT”**Bharat Kwatra**

ABSTRACT: *The undermentioned theory is aimed to simplify the study of elements described in periodic table. The theory is formulated to ascertain the location of the elements as described in the periodic table without using the periodic table. The theory provides the simpler medium to find out the group number as well as period number which can be further utilized to study properties of elements.*

KEYWORDS: Periodic Table, Locator Theory, Group Number, Period Number, Chemistry

INTRODUCTION**postulates of theory are as follows**

- 1) To ascertain the period of any element the fundamentals of periodic table are used i.e. number of shells occupying electrons in given element or number of last shell with electrons in given element or no of valence shell of given element gives the period number.
- 2) For the inert “**f**” **block elements**. Following fundamental are used:-
 - i. elements with atomic number(z)=58 to 71 are placed in 6 period and group 3 .
 - ii. elements with atomic number(z)=90 to 103 are placed in 7 period and group 3
- 3) To ascertain the group of “**s**” **block elements**. Number of valence electrons of given element gives its group number.

for example:-

Sodium is element of s block with atomic number as 11.

Na (A = 11)

Name/number of shell	k(1)	l(2)	m(3)
number of electrons	2	8	1

Period is ascertained according to fundamentals i.e 3 group is ascertain according to electrons in last shell i.e. 1, hence the group number is 1

Na belongs to group 1 and period 3

- 4) to ascertain the group of “**p**” **block elements**. Number of valence electrons in given element + 10 gives its group number.

for example:-

Sulfur is element of p block with atomic number as 16.

S(A = 16)

Name/number of shell	k(1)	l(2)	m(3)
number of electrons	2	8	6

Period is ascertained according to fundamentals i.e 3 group is ascertained according to number of valence electrons + 10 i.e. $6+10=16$, hence the group number is 16
S belongs to group 16 and period 3

5) To ascertain the group of “**d**” **block elements**. Number of electrons in last shell of given element + number of electrons in penultimate shell of given element - 8 gives its group number.

for example:-

Iron is element of d block with atomic number as 26 .

Fe(A = 26)

name/number of shell	k(1)	l(2)	m(3)	n(4)
number of electrons	2	8	14	2

period is ascertained according to fundamentals i.e 4group is ascertained according to number of valence electrons in given element + number of electrons in penultimate shell of given element - 8 i.e. $14+2-8=8$, hence the group number is 8.
fe belongs to group 8 and period 4

CONCLUSION

Hence using this theory, the properties of element can be simply ascertained without having the aid of periodic table.