

7.10.24

TENDER HEART HIGH SCHOOL, SEC-33B, CHD

CLASS- IX

SUBJECT- CHEMISTRY

CHAPTER- I

TEACHER- ANAMIKA

Good morning to all the students!

Students this lesson is of class-IX for the subject of chemistry, Topic- 'Periodicity' which is covered in Chapter-1: 'Periodic Table, Periodic Properties and variations of Properties' starting on page 4 of your text book titled - concise chemistry by Selina Publication and is being submitted to you on 7, October, 2024

All students may now please open page number 4 of your notebook in front of you.

If all students are ready then let us start with first chapter which is 'Periodic Table, Periodic Properties and variations of Properties'. All students may now please listen carefully.

Periodicity:- The repetition of similar properties in chemical elements, as indicated by their position in the periodic table is known as Periodicity.

Cause of periodicity:-

The cause of periodicity is the recurrence of similar electronic configuration i.e. having the same number of electrons in the outermost orbit.

CHAPTER- 1

TEACHER-

ANAMIKA

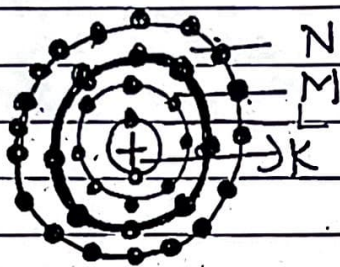
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Now, we will move on the next topic of this chapter which is

Shells (ORBITS) And Valency

When electrons revolve around the nucleus in certain definite circular paths called orbits or shells

FIGURE-1



You will be able to observe the movement of electrons around the shells in the nucleus in Figure 1 which is shown on page no. 2 of the notes which is sent on 12 October, 2020.

Now, we will discuss variations of shells along the groups and periods.

1. Number of shells:-

(a) Down a group, i.e., from top to bottom,

As we move down a group, i.e., from top to bottom the number of shells increases.

Such that the number of shells that an element has, equals the number of the period to which that element belongs.

You will be able to understand the example for this through Table as shown on page number-3 of the given notes which is sent on 12 October 2020.

Element with atomic numbers	No. of shells	Electronic configuration	Period to which the element belongs
F(9)	2	2, 7	
Cl(17)	3	2, 8, 7	
Br(35)	4	2, 8, 18, 7	
I(53)	5	2, 8, 18, 18, 7	
At(85)	6	2, 8, 18, 32, 18, 7	

(b) Across a period, i.e., from left to right.

On moving from left to right in a given period, the number of shells remains the same. For example, in the 2nd period, the number of shells remains two i.e., equal to the number of the period. Similarly in the third period the number of shells remains three and so on.

2. Valency °- It describes the combining capacity of the atom of an element. It is equal to the number of electrons an atom can donate or accept or share.

(P.T.O)

On moving down a given group, the number of electrons in the outermost shell, i.e., valence electron, remains the same. Therefore, valency, in a group also remains the same.

In a given period, the number of electrons in the valence (outermost) shell increases from left to right. But the valency increases only upto Group 14, where it becomes 4, & then it decreases, i.e., in Group 17 it becomes 1.

Note :-

- ① Valency depends on the no. of electrons in the outermost shell (i.e. valence shell). If the number of electrons present in the outermost shell are 1, 2, 3 or 4, then their valency is 1, 2, 3 or 4 respectively.
- ② If the no. of electrons present in the outermost shell are 5, 6 or 7, then their valency is $8-5=3$, $8-6=2$ and $8-7=1$ respectively.
- ③ Valency is the combining capacity so it is always positive.

Now, students I will give you three short Questions. You will get a three minutes break to write the answers.

(P.T.O)

The Questions are:-

- Q1 How many electrons are revolve around the (Shell-L) in the nucleus?
- Q2 How many shells are there in chlorine?
- Q3 What is the valency of calcium?

I hope you all have written the answers by now. Let us check the answers now.

Ans1 There are 'eight' electrons are revolve around the (Shell-L) in the nucleus.

Ans2 There are 3 shells in chlorine.

Ans3 The Valency of Calcium is '2'.

Students; Now I am ending the chapter by giving instructions and homework.

INSTRUCTIONS :-

You all are required to read the lesson again and then read this chapter by given notes sent on 12th October, 2020.

HOMEWORK :-

Do Question no. 6, 7, 8, 9, 10, 11, 12, 13, 14, 15, 16, 17 from Intext Questions given on pg. no. - 5 of your notebook.

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