13.5.24

TENDER HEART HIGH SCHOOL, SEC-33B, CHD

CLASS- VIII SUBJECT- CHEMISTRY
CHAPTER-5 TEACHER-MOHINISHA THAKUR

Good morning to all the students!

Students this lesson is of class - VIII for the subject of chemistry, Topic - 'Study of specific groups' which is covered in chapter-5 "The Periodic Table" starting on page no. 89 of your text book titled- consise chemistry by Selina Publication and is being submitted to you on 13, May, 2024

In today's lesson we will discuss (3)rd specific group which is "Group VII A or Group 17 (The halogens)" is given on pg-no- 91 of your textbook.

All students may now please open page no- 91 of your notebook in front of you.

If all students are ready then let us start with this chapter which is "The Periodic Table". All students may now please listen carefully.

3. Group VII A or Group 17 (The halogens)

Electronic configuration of Group -17 elements

→

(P.T.O)

F- 2, 7 Cl- 2, 8, 7 Br- 2, 8, 18, 7 I- 2, 8, 18, 18, 7 At- 2, 8, 18, 32, 18, 7	- All the elements of group -17 have 7 valence electrons - They easily gain one electron to complete their octet so their valency is 1. Being high reactive they form salts with metals, that is why they are called self-former or halogens.

- On moving down the non-metallic nature decreases therefore the reactivity of non-metals also decreases on moving down. Thus fluorine is the most reactive non-metal.
- On moving down the group the melting and boiling points increases therefore F and Cl are gases, Br is liquid and I is solid. At is radioactive in nature.
- They all are poisonous and have a strong, pungent and unpleasant odour.
- They form diatomic molecules - F_2, Cl_2, Br_2, I_2
- They can gain one electron to form uninegative ions $F + 1e \rightarrow F^-$ [reduction]
  $Cl + 1e \rightarrow Cl^-$ [reduction]
- They react with metals to form salts that are called halides. Ex - NaCl, KBr, $CaCl_2$, $MgBr_2$
- They can react with hydrogen to form covalent hydrides - HCl, HF, HBr, HI.

Students, next we will discuss the fourth specific group which is "Group Zero or 18 group (Noble gases)".

(P.T.O)

4. Group Zero or 18 group (Noble gases)

Electronic configuration of Group-18 Elements

He- 2 Ne- 2, 8 Ar- 2, 8, 8 Kr- 2, 8, 18, 8 Xe- 2, 8, 18, 18, 8 Rn- 2, 8, 18, 32, 18, 8	- Except helium rest all the other elements have 8 valence electrons. - Their electronic arrangement is very stable, so they are unreactive.

- Due to their unreactive and inert nature they are called inert gases or noble gases.

- Due to the stable electronic arrangement the atoms do not react and remain monoatomic.
- All are colourless, tasteless and odourless gases.
- Due to their inert nature they donot react with oxygen. They are not combustible and do not support combustion.
- Noble gases can not be liquified easily and their solubility in water is very less.
- When electric discharge is passed through a tube containing noble gas, they emit coloured light. Like neon gas produces orange colour while argon produces green colour.
- Their melting and boiling points are very low and cannot be easily liquified or solidified.

(P.T.O)

Uses :-

1. Helium is very light gas like hydrogen but it is not inflammable and being unreactive it is used in place of hydrogen in airships and balloons.

2. Argon gas is filled inside the light bulbs because it is unreactive gas and does not react with the filament.

3. Used in advertising signs as they produce coloured light when electric discharge is passed through them.

Students, Now I will give you three a very short questions from the chapter. You will get a three minutes break to write the answers.

The Questions are :-

Q1 Out of F, Cl, Br and I which is the most reactive element?

Q2 Name the specific group which can not be liquified easily and their solubility in water is very less

Q3 Name a gas which is filled inside the light bulbs.

Students, now pause this audio for three minutes and write the answers in chemistry notebook.

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

(P.T.O)

Ans1:- Flourine(F).
Ans2:- Group zero or 18 group (Noble gases).
Ans3:- Argon(Ar).

Now, we will do the last topic of this chapter which is 'Uses of Periodic Table'

Uses of Periodic Table

1) It helps in the prediction of existence of new elements.
2) Used in correcting the position of elements by relating them with their properties.
3) It has made the study of elements easy.
4) The position of element in the periodic table can tell its atomic number, electronic configuration, number of valence electrons and its properties.
5) By the position of element in the periodic table we can predict the type of chemical bond and compound it will form.
6) The position of element tells its valency and whether the element is a metal or non-metal.

Students, Now I am ending this chapter by giving instructions and homework.

INSTRUCTIONS:-

You all are required to read the lesson again learn the elements of Group-I, II and 17 which is given on pg no- 89 of your note book.

(P.T.O.)

CLASS- VIII SUBJECT- CHEMISTRY

CHAPTER- 5 TEACHER - MOHINISHA THAKUR

HOMEWORK :-

Do Question 1 to 18 of Exercise 5(C) given on page no. 94 of your notebook.

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