Chemistry - 11th Class Chemistry Short Questions Chapter 6 Preparation

Q1.

Ans 1:

Q2. **Why the lone pairs of electrons on an atom occupy greater space?**

Ans 1: The lone of electrons of the central atom is only attracted by the nucleus of the central atom. It creates more forces of repulsion due to nearness of nucleus and occupies greater space as compared to the bond pair.

Q3.

Solid sodium chloride does not conduct electricity, but, when electric current is passed through molten sodium chloride or its aqueous solution, electrolysis takes place. Give reason.

Ans 1: In solid, NaCI, the oppositely charged ions are fixed at their positions. So they do not conduct electricity in the solid state. In the molten state or solution state the ions are free to move towards the respective electrodes.

Q4. **Why the electron affinities of II-A are less then those of I-A?**

Ans 1: The elements of II-A have fulfilled outermost s-orbitals, so electron has to be accommodated in the higher orbitals. Their electron affinities are positive. The elements of I-A can accommodate incoming electron in partially filled s-orbital.

Q5. **How does the electronegativity difference decide the nature of ionic bond?**

Ans 1: When the electronegativity difference between two bonded atoms is 1.7 or more than that, then the bond is said to be ionic, otherwise covalent. The % age of ionic character is more than 51% when the electronegativity difference is 1.7.

Q6. **How shielding effect is thought to be one of the parameters for the variation of ionization potential in group and periods?**

Ans 1:

Greater the number of the inner electons, greater the shielding effect and lesser the I.E. values. In a period, the shielding effect remains the same from left to the right. So the I.E. value are not affected by this parameter. No doubt, other parameters affect it.

Q7. **How do you justify that all the bonds between I-A and II-A with VI-A and VII-A are not equally ionic?**

Ans 1: The I.E. values of the I-A are less than II-A and the E.A. of VII-A are greater than VI-A. So, the bond between IA and VII-A should be ionic to a good extent. The bonds between II-A and VI-A should be poorly ionic. It means that all the above mentioned compounds are not equally ionic.

Q8.
Why the molecule of BF_3 is triangular planar?

Ans 1: 'B' has three electrons in the outermost orbitals. It promotes the electron from 2s orbital to one of the 2p orbitals. Boron undergoes sp^2, hybridization. Three sp^2 -hybridized orbitals lie in one plane and adjust themselves at angle of 120°. There F atom make three sigma bonds which lie in one plane. So, the molecule of BF_3 is planar.

Q9. **Dipole moment of CO_2 is zero but that of CO is 0.12 Debye. Why?**

Ans 1: CO_2 is linear molecule and the two dipoles cancel the effect of each other. In CO there is a single dipole directed from carbon to oxygen and it not cancelled.

Q10. **Most of He elements of the periodic table attain the electronic configuration of inert gases during bond formation. Justify it.**

Ans 1: Inert gases are not reactive due to complete octet except He. Most of He s-and p-block elements may attain eight electrons in the outermost orbitals. They do so either by losing, gaining or sharing the electrons.