Chemistry - 11th Class Chemistry Short Questions Chapter 4 Preparation

Q1. **Define polymorphism and isomorphism? Give on example of each.**

Ans 1: Isomorphism is the phenomenon in which two different substances exist in the same crystalline form, e.g; NaNO3, KNO3, KNO_3 are rhombonedral enystalline form. When a compound exists in more than one crystalline shape. Then the phenomenon is called polymorphism. $AgNO_3$ rhombohedral crystals and orthorhombic crystalline form.

Q2. **Molecular solids are soft and easily compressible. Why?**

Ans 1: The molecules in such crystals are present at the lattice points. There are van der waal's forces among the molecules of such solids. There forces are weak. So, there solids are soft and easily compressible.

Q3. **The boiling point of water is different at Murree Hills and at mount Everest. Justify it.**

Ans 1: Boiling point of a liquid changes as the external pressure changes. At murree Hills, atmospheric pressure is less than standard pressure (760 torr). So water boils at 98°C instead of 100°C. At mount Everest atmospheric pressure is further reduced .So water boils at 69° C.

Q4. **Sodium is a good conductor of electricity but sodium chloride is not. Give reason?**

Ans 1: Sodium is an alkali metal and free electrons are available in the crystal lattice. These free electrons are responsible for the passage of electrical current. Free electrons are not available in the NaCI crystal.

Q5. **Why the melting and boiling points of alkanes increase with increase in molar masses?**

Ans 1: Alkanes are saturated hydrocarbons. Greater the length of carbon chain, greater the interaction of one molecule with the other. Higher alkanes are zig-zag in structure and they are tailed macromolecules as well. These features are responsible for the forces of interactions and cause the increase of M.P. and B.P. of alkanes.

Q6. **Is it true that polar compounds are soluble in polar solvents?**

Ans 1: Polar compounds have separation of positive and negative charges. If the 'solvent has also separation of positive and negative charges then the interaction takes place between the opposite poles. These interactions are responsible to mix them with each other.

Q7. **Liquid boils at that temperature when its vapour pressure becomes equal to the external Pressure. Why?**

Ans 1: Increase in temperature increases the vapour pressure of liquids. When the vapour pressure of the liquid becomes equal to the external pressure, then the vapour pressure inside the bubbles of the liquid is such that it can face the external pressure, so the bubbles burst in the outward direction on the surface. This bursting of the bubbles outwardly is called boiling.

Q8.

How unit cell is define by unit cell dimensions?

Ans 1: The distances between two adjacent particles along x, y and z axis are measured and denoted by 'a', 'b', and 'c'. These distances are called unit cell lengths. The angles in between these three axes are denoted by "33" and. These six parameters are also called Crystallographic elements.

Q9. **Amorphous solid like glass is also called super cooled liquid. Why?**

Ans 1: Amorphous solids like glass have random structures and their particles are disarranged just like liquids. So the amorphous solids are no doubt hard and rigid but look like liquids. That is why glass is called a super cooled liquid.

Q10. **Define boiling point. Is it related with the external pressure?**

Ans 1: Boiling point is that temperature of the liquid at which the vapour pressure of the liquid is equal to the external pressure. If the external pressure is higher, then the boiling point of the liquid is increased. If the external presser is decreased, then the boding point decreases. The boiling of water is low at mountains. Due to the change in external pressure.