Chemistry - 12th Class Chemistry Chapter 3 Short Questions Preparation

Q1. Why liquid silicones are preferred over organic lubricant?

Ans 1: The outstanding physical attribute of silicone oil is its very small change in viscosity with changing temperature,compared with the behavior of other oils of similar viscosity.If the temperature is dropped from $100^{o}C$ to $0^{o}C$ the viscosity of petroleum oil may increase about one hundred folds,whereas,that of silicons oils will increase less than four folds,in the presence of air or oxygen at temperature as high as $300^{o}C$ silicon oils remain free from acid formation,oxidation and similar phenomenon,which frequently limit the usefulness of petroleum products and other synthetic organic liquids.

Q2. Aluminium is not found free in nature.Comment the statement?

Ans 1: It occurs primarily as alumino-silicate minirals found in the rocks of the outer portion of the earth.So,Aluminium is not found free in nature.

Q3. What is meant by chemical garden?

Ans 1: When crystals of soluble coloured salts like nickle chloride ferrous sulphate,copper sulphate or cobalt nitrate,etc,are placed in a solution of sodium silicate,they produced a very beautiful growth,like plant,which called chemical garden.

Q4. Write any four uses of borax.

Ans 1: i) It is used to prepare borate glass,which is heat resistant.

Ans 2: ii) It is used in softening of water.

Ans 3: iii) It is used in metallurgical operations.

Ans 4: iv) It is used as a flux in welding and in metallurgy.

Q5. Discuss use of $PbCrO_4$in paints?

Ans 1: It is used as a pigment under the name of chrome yellow.Orange or red basic lead chromates are formed when lead chromate is boiled with dilute alkali and are used as pigments.The stable yellow modification of lead chromate is monoclinic Mixture of lead chromate with lead sulphate or barium sulphate are also used as yellow pigments.

Q6. Describe composition and used of chemical garden?

Ans 1: When crystals of soluble coloured salts like nickle chloride,ferrous sulphate,cooper sulphate or cobalt nitrate,etc,are placed in a solution of sodium silicate,they produced a very beautiful growth,like plant,which is called chemical garden.

Ans 2: **Use**:The chemical garden relies on the fact that most transition metal silicate are insoluble in water and are coloured.

Q7. State procedure by which surface of stoneware is made less porous?

Ans 1: Stoneware are usually glazed to give it a less porous surface by throwing salt upon the articles while they are hot.This treatment produces sodium aluminate and sodium aluminium silicate,which melt readily and cover the entire surface.When the article cools,the covering solidifies,producing a compact,smooth,waterproof surface.

Q8. What is asbestos?Give its two uses.

Ans 1: Asbestos is hydrated calcium magnesium silicate $CaMg_3(SiO_3)_4$.It commonly used in making incombustible fabrics and hardboards,etc.

Q9. Boric acid can be converted to borax and vice versa.Give reaction?

Ans 1: **Conversion of boric acid into borax**:Borax is prepared by treating a hot solution of boric acid with proper amount of soda ash:

$4H_3BO_3 + Na_2CO_3 \text{-------} > Na_2B_4O_7 + 6H_2O + CO_2$

Ans 2: **Conversion of borax into boric acid**:Aqueous solution of borax reacts with HCl or $H_2SO_4$to form boric acid.

$Na_2B_4O_7 + 2HCl + 5H_2O \text{----} > 4H_3BO_3 + 2NaCl$

$Na_2B_4O_7 + H_2SO_4 + 5H_2O \text{------} > 4H_3BO_3 + Na_2SO_4$

Q10. How semiconductors are used in transistors?

Ans 1: Semiconductors may joined to other material,which may be a metal or a different semiconductor.The junction between the different materials form a boundary.It allows electricity to pass more properly and is used in transistors.
