Chemistry - 12th Class Chemistry Chapter 3 Short Questions Preparation

Q1. Write any two properties of boron which show peculiar behavior?

Ans 1: 1.Boron is only element in Group IIIA which is non metallic in behaviour.
2.It is the only element with less that four electrons in the outermost shell which is not a metal.

Q2. Write four uses of Sodium Silicate?

Ans 1: i) It is used as filler for soap in soap industry.

Ans 2: ii) It is used in textile as a fire proof.

Ans 3: ii) It is used in textile as a fire proof.

Ans 4: iii) It is used as furniture polish

Ans 5: iv) It is used in calico printing.

Q3. Give uses of Lead Suboxide?

Ans 1: It is back powder,obtained on heating plumbous oxalate in the absence of air.Other than pigments,it is used in the manufacture of lead storage batteries.

Q4. 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.

Q5. How weathering of potassium feldspar takes place?Give chemical equation also.

Ans 1: Many important silicate rocks contain aluminium.The weathering of these rocks results in the disintegration of the complex silicates which they contain.The boiling and freezing of water in the rocks,and the chemical action of water and carbon dioxide convert these compounds into potassium carbonate,sand and clay.The following reaction explain the weathering of potassium feldspar:

$K_2O.Al_2O_3.6SiO_2 + H_2CO_3 + H_2O \text{------} > K_2CO_3 + 4SiO_2 + Al_2O_3.(SiO_2)_2.2H_2O$

Q6. How borax is commercially prepared?Give two methods of preparation.

Ans 1: i) 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: ii) Borax is almost exclusively obtained from calcium borate.Finely powderedcolemanite is boiled with Na_2CO_3solution.When $CaCO_3$precipitates out and a mixture of borax and sodium metaborate is formed.
$4Ca_2B_6O_{11} + 2Na_2CO_3 \text{-------} > 2CaCO_3 + Na_2B_4O_7 + 2NaBO_2$

Q7. Justify that solubility of borax changes with change in temperature.

Ans 1: It is sparingly soluble in cold water but is more soluble in hot water:100 grams of water dissolve 3 gram of decahydrate at 10^oC and 99.3 grams at 100^oC.

Q8. How Clay Articles are glazed?

Ans 1: Clay articles are glazed by boric acid because borate glazes possesses a higher coefficient of expansion.

Q9. What is effect of temperature on semiconductor?

Ans 1: The electrical conductivity of semiconductor depends upon their temperautre. When a metal is heated,its resistance increases,when a semiconductor is heated its resistance decreases and vise versa.

Q10. Under what conditions aluminium corrodes?

Ans 1: When aluminium sheet is exposed to moist air it acquires a thin,continuous coating of aluminium oxide,which is product of aluminium corrosion.
