Chemistry - 12th Class Chemistry Chapter 2 Short Questions Preparation

Q1. Why S-block elements are called as alkali metals and alkaline earth metals?

Ans 1: The name alkali came from Arabic,which mean The Ashes.The arab used this term for these metals because they found that the ashes of plants were composed chiefly of sodium and potassium,.Elements of group IA are called alkali metals,because they produce alkaline solutions with water.

Ans 2: Elements of group IIAare called alkaline earth metals.The alkaline earth metals are beryllium,magnesium,calcium,strontium,barium and radium.They are called alkaline earth metals because they produce alkalies in water and are widely distributed in earth crusts.

Q2. 2% gypsum is added in the cement.Justify.

Ans 1: 2% gypsum is added in the cement which prevents the cement from hardening too rapidly.The additions of gypsum increases the setting time of cement.

Q3. Lithium is least reactive element of all alkali metals.

Ans 1: Lithium is least reactive element of all alkali metals because of its small radius and high charge density.The nuclear charge of Li^+ion is screened only by a shell of two electrons.The so called anomalous properties of lithium are due to the fact that lithium is unexpectedly far less electropositive than other alkali metals.

Q4. Why lime is added to acidic soil?

Ans 1: **Addition of lime to acidic soil:**Large quantities of calcium oxide are used in agriculture for neutralizing acidic soils.It has been found that application of lime to acidic soils increases the amount of readily soluble phosphorus.
Calcium oxide is also used in large amounts for making lime-sulphur sprays which have as strong fungicidal action.The hydroxide of calcium is obtained when the oxide of the calcium is allowed to react with water.The process is called slaking of lime and it is an exothermic reaction.
$CaO+H_2O$------->$Ca(OH)_2$

Q5. What happens when: 1) Li_2CO_3 2) $Na_2CO_3$is heated.

Ans 1: Lithium has low electropositive character,thus its carbonate are not so stable and therefore decomposed giving lithium oxide on heating.
Li_2CO_3---------->$Li_2O + CO_2$

Ans 2: At temperature below 35.2 ^oC,Na_2CO_3crystallizes out from water as $Na_2CO_3.10H_2O$ which is called washing soda.Above this temperature it crystallizes as $Na_2CO_3.H_2O$. On standing in air,$Na_2CO_3.10H_2O$ slowly loses.

Q6. Give advantages of Down's cell.

Ans 1: i) Metallic fog is not produced.
ii) Liquid sodium can easily be collected at $600^{o}C$.
iii) Material of cell is not attacked by the products formed during the electrolysis.

Q7. Give two uses of Lime in industry.

Ans 1: i) Large quantities of lime are used in the extraction and refining of metals.
ii) Lime is used in paper,cement and leather industries.

Q8. Why lithium carbonate decomposes on heating while other alkali metal carbonates remain unaffected?

Ans 1: Lithium has low electropositive character,thus its carbonate and nitrate are not so stable and therefore decompose giving lithium oxide.Carbonates of other alkali metals do not decompose.

Q9. When sodium reacts with water,hydrogen which evolves catches fire,Why?

Ans 1: A small piece of sodium floated on water reacts vigorously to liberate hydrogen and produce metal hydroxide.The reaction is highly exothermic.The energy produced by the reaction may even ignite the hydrogen.
$2Na + 2H_2O$----------$>2NaOH+H_2$

Q10. How potassium superoxide KO_2has very interesting use in breathing equipment for mountains and space crafts?

Ans 1: Potassium superoxide KO_2has very interesting use in breathing equipment for mountaineers space crafts because it has ability to absord carbon dioxide while giving out oxygen at the same time as: $KO_2+ 2CO_2$---> $2K_2CO_3+ 3O_2$
