



INDIAN SCHOOL MUSCAT
CLASS XI
CHEMISTRY WORKSHEET
s -BLOCK ELEMENTS



Multiple Choice Questions:

- By adding gypsum to cement
 - setting time of cement becomes less.
 - setting time of cement increases.
 - colour of cement becomes light.
 - shining surface is obtained.
- The reducing power of a metal depends on various factors. Suggest the factor which makes Li, the strongest reducing agent in aqueous solution.
 - Sublimation enthalpy
 - Ionisation enthalpy
 - Hydration enthalpy
 - Electron-gain enthalpy
- Metal carbonates decompose on heating to give metal oxide and carbon dioxide. Which of the metal carbonates is most stable thermally?
 - MgCO_3
 - CaCO_3
 - SrCO_3
 - BaCO_3
- When sodium is dissolved in liquid ammonia, a solution of deep blue colour is obtained. The colour of the solution is due to
 - ammoniated electron
 - sodium ion
 - sodium amide
 - ammoniated sodium ion
- Which statement is false for alkali metals?
 - Lithium is the strongest reducing agent
 - Sodium is amphoteric in nature
 - Li^+ is exceptionally small
 - All alkali metals give blue solution in liquid ammonia
- Which alkali metal cation has the highest polarising power?
 - Li^+
 - Na^+
 - K^+

d) Cs^+

Assertion[A] & Reasoning[R]

- (A) Both assertion and reason are correct statements, and the reason is the correct explanation of the assertion
(B) Both assertion and reason are correct statements, but reason is not the correct explanation of the assertion
(C) Assertion is correct, but reason is wrong statement
(D) Assertion is wrong, but reason is correct statement
(E) Both assertion and reason are wrong statements

1. [A]: Potassium and caesium are useful as electrodes in photoelectric cells.
[R]: When irradiated with light, electrons are ejected from its surface immediately.
2. [A]: Ionisation enthalpy of group 2 elements is lower than group 1 elements.
[R]: Group 2 elements have bigger atomic size than group 1 elements.
3. [A]: The carbonate of lithium decomposes easily on heating to form lithium oxide and CO_2
[R]: Lithium being small in size polarizes large carbonate ion leading to the formation of stable Li_2O .
4. [A]: Radium is the most abundant s-block element.
[R]: Except francium all s-block elements are non-radioactive in nature.

Answer the following questions:

1 Explain giving reasons:

- a) Alkali metals are not found in nature.
- b) Lithium halides are covalent
- c) Magnesium does not impart color to flame.
- d) Potassium carbonate cannot be prepared by Solvay process.
- e) Solubility of group II sulphates decrease down the group.
- f) Thermal stability of group II oxides decreases down the group.
- g) LiCl is hydrated while NaCl is not.
- h) LiF has low solubility in water.
- i) The E^0 value of Li is the most negative among alkali metals.
- j) BeCl_2 is soluble in organic solvents.
- k) Li resembles Mg in some of its properties
- l) Be differs in some of its properties from group II metals.
- m) The maximum co-ordination number of beryllium is 4.
- n) Sodium does not form superoxide.
- o) Beryllium is kinetically inert to oxygen and water.
- p) Gypsum is added to cement.
- q) CsI has low solubility in water.

- 2 Explain the manufacture of a) washing soda b) caustic soda
- 3 Draw the structures of BeCl_2 in the vapour state below 1200 K and in the solid state.
- 4 What happens when (give balanced equations)
 - a) CO_2 is passed through limewater; in excess.
 - b) Calcium nitrate is heated
 - c) Sodium nitrate is heated
 - d) Chlorine reacts with slaked lime
 - e) BeCl_2 is reacted with lithium aluminium hydride.
 - f) Hydrated magnesium chloride is heated.
 - g) Alkali metals are mixed with liquid ammonia.
- 5 Illustrate the anomalous behavior of a) Li b) Be.
- 6 Illustrate the diagonal relationship between a) Li-Mg b) Be-Al.