Date Planned : __ / __ / __	Daily Tutorial Sheet-1	Expected Duration : 90 Min
Actual Date of Attempt : __ / __ / __	JEE Main Archive	Exact Duration :_____

1. A metal M readily forms its sulphate MSO_4 which is water soluble. It forms its MO which becomes inert on heating. It forms an insoluble hydroxide $M(OH)_2$ which is soluble in NaOH solution. Then M is :

(A) Mg **(B)** Ba **(C)** Ca **(D)** Be **(2002)**

2. KO_2 (potassium super oxide) is used in oxygen cylinders space and submarines because it : **(2002)**

(A) absorbs CO_2 and increases O_2 content

(B) eliminates moisture

(C) absorbs CO_2

(D) produces ozone

3. Several blocks of magnesium are fixed to the bottom of a ship to : **(2003)**

(A) keep away the sharks **(B)** make the ship lighter

(C) prevent action of water and salt **(D)** prevent puncturing by under-sea rocks

4. In curing cement plasters water is sprinkled from time to time. This helps in : **(2003)**

(A) keeping it cool

(B) developing interlocking needle-like crystals of hydrated silicates

(C) hydrating sand and gravel mixed with cement

(D) converting sand into silicic acid

5. The solubilities of carbonates decrease down the magnesium group due to a decrease in : **(2003)**

(A) lattice energies of solids **(B)** hydration energies of cations

(C) inter-ionic attraction **(D)** entropy of solution formation

6. The substance not likely to contain $CaCO_3$ is : **(2003)**

(A) a marble statue **(B)** calcined gypsum **(C)** sea shells **(D)** dolomite

7. Beryllium and aluminium exhibit many properties which are similar. But, the two elements differ in :

(A) exhibiting maximum covalency in compounds **(2004)**

(B) forming polymeric hydrides

(C) forming covalent halides

(D) exhibiting amphoteric nature in their oxides

8. One mole of magnesium nitride on the reaction with an excess of water gives : **(2004)**

(A) one mole of ammonia **(B)** one mole of nitric acid

(C) two moles of ammonia **(D)** two moles of nitric acid

9. The ionic mobility of alkali metal ions in aqueous solution is maximum for : **(2006)**

(A) K^+ **(B)** Rb^+ **(C)** Li^+ **(D)** Na^+

10. The set representing the correct order of ionic radius is : **(2009)**

(A) $Li^+ > Be^{2+} > Na^+ > Mg^{2+}$ **(B)** $Na^+ > Li^+ > Mg^{2+} > Be^{2+}$

(C) $Li^+ > Na^+ > Mg^{2+} > Be^{2+}$ **(D)** $Mg^{2+} > Be^{2+} > Li^+ > Na^+$

11. Which of the following on thermal decomposition yields a basic as well as an acidic oxide ? **(2012)**

(A) $KClO_3$ **(B)** $CaCO_3$ **(C)** NH_4NO_3 **(D)** $NaNO_3$

12. The metal that can not be obtained by electrolysis of an aqueous solution of its salt is : **(2014)**

(A) Cr **(B)** Ag **(C)** Ca **(D)** Cu

13. In which of the following reaction H_2O_2 acts as a reducing agent ? **(2014)**

I. $H_2O_2 + 2H^+ + 2e^- \longrightarrow 2H_2O$ **II.** $H_2O_2 - 2e^- \longrightarrow O_2 + 2H^+$

III. $H_2O_2 + 2e^- \longrightarrow 2OH^-$ **IV.** $H_2O_2 + 2OH^- - 2e^- \longrightarrow O_2 + 2H_2O$

(A) I and II **(B)** III and IV **(C)** I and III **(D)** II and IV

14. Which one of the following alkaline earth metal sulphates has its hydration enthalpy greater than its lattice enthalpy ? **(2015)**

(A) $CaSO_4$ **(B)** $BeSO_4$ **(C)** $BaSO_4$ **(D)** $SrSO_4$

15. Which physical property of dihydrogen is wrong ? **(2015)**

(A) Colourless gas **(B)** Odourless gas

(C) Tasteless gas **(D)** Non-inflammable gas