

Date Planned : __ / __ / __	Daily Tutorial Sheet-14	Expected Duration : 30 Min
Actual Date of Attempt : __ / __ / __	Level-3	Exact Duration : _____

153. In two alkaline earth metal salts, one gives apple green and other gives brick red in flame test. The sum of atomic number of those alkaline earth metals is x. Then the value of  $\frac{x+4}{16} =$

154. When  $\text{CaC}_2$  reacts with  $\text{N}_2$  a compound X is formed. X on reaction with  $\text{H}_2\text{SO}_4$  gives Y and  $\text{CaSO}_4$ . Then the number of  $\sigma$  bonds in compound Y :

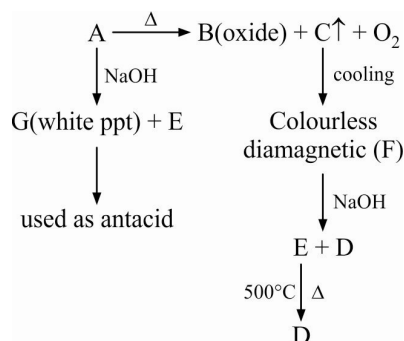
155. A & E in the given reaction sequences are :   
(A - Group II compound, C is a compound with a pungent odour, coloured and paramagnetic character)

(A)  $\text{MgCO}_3$  &  $\text{NaNO}_2$

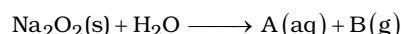
(B)  $\text{Mg}(\text{NO}_3)_2$  &  $\text{Na}_2\text{CO}_3$

(C)  $\text{Mg}(\text{NO}_2)_2$  &  $\text{NaNO}_2$

(D)  $\text{Mg}(\text{NO}_3)_2$  &  $\text{NaNO}_3$



156. On being placed in water, sodium peroxide not only produces an alkaline solution but also some bubbles. If we assume that the peroxide ion picks up two protons from water to produce a compound that can be seen as the dibasic conjugate acid of peroxide ion and then this compound undergoes a redox disproportionation. Using the above information complete the following equation :



(A) and B are :

(A)  $\text{H}_2\text{O}_2$  and  $\text{NaOH}$  (B)  $\text{H}_2\text{O}$  and  $\text{O}_2$  (C)  $\text{NaOH}$  and  $\text{O}_2$  (D)  $\text{Na}_2\text{O}$  and  $\text{NaOH}$

157.  $\text{Ca}(\text{HCO}_3)_2$  and  $\text{Ca}(\text{OH})_2$  cannot be stored in the same vessel due to :

(A) Both  $\text{Ca}(\text{HCO}_3)_2$  and  $\text{Ca}(\text{OH})_2$  acts as bases.

(B)  $\text{Ca}(\text{HCO}_3)_2$  behaves as an acid with  $\text{Ca}(\text{OH})_2$ .

(C)  $\text{Ca}(\text{OH})_2$  behaves as an acid with  $\text{Ca}(\text{HCO}_3)_2$ .

(D) Both  $\text{Ca}(\text{HCO}_3)_2$  and  $\text{Ca}(\text{OH})_2$  acts as acids.

\*158. Anhydrous barium nitrate when heated decomposes and produces  $\text{O}_2$  and  $\text{NO}_2$  gases. Similarly magnesium nitrate when heated decomposes to give out  $\text{NO}_2$  gas and oxygen. In both cases corresponding oxides are also formed. Select the correct answer(s) :

(A) The lattice energy value is higher for magnesium nitrate than that of barium nitrate.

(B)  $\text{NO}_2$  will be evolved at a lower temperature in case of  $\text{Mg}(\text{NO}_3)_2$  as compared to that of  $\text{Ba}(\text{NO}_3)_2$ .

(C)  $\text{NO}_2$  will be evolved at a lower temperature in case of  $\text{Ba}(\text{NO}_3)_2$  as compared to that of  $\text{Mg}(\text{NO}_3)_2$ .

(D) On heating  $\text{Mg}(\text{NO}_3)_2$  and  $\text{Ba}(\text{NO}_3)_2$ , the ratio of volume of  $\text{NO}_2$  and  $\text{O}_2$  evolved is 4 : 1.