Date Planned : __ / __ / __	Daily Tutorial Sheet-2	Expected Duration : 90 Min
Actual Date of Attempt : __ / __ / __	JEE Main Archive	Exact Duration :_____

16. From the following statements regarding H_2O_2, choose the incorrect statement: **(2015)**

(A) It can act only as an oxidizing agent

(B) It decomposes on exposure to light

(C) It has to be stored in plastic or wax lined glass bottles in dark

(D) It has to be kept away from dust

17. The correct order of thermal stability of hydroxides is : **(2015)**

(A) $Ba(OH)_2 < Sr(OH)_2 < Ca(OH)_2 < Mg(OH)_2$

(B) $Ba(OH)_2 < Ca(OH)_2 < Sr(OH)_2 < Mg(OH)_2$

(C) $Mg(OH)_2 < Ca(OH)_2 < Sr(OH)_2 < Ba(OH)_2$

(D) $Mg(OH)_2 < Sr(OH)_2 < Ca(OH)_2 < Ba(OH)_2$

18. The molecular formula of a commercial resin used for exchanging ions in water softening is $C_8H_7SO_3Na$ (Mol. Wt. 206). What would be the maximum uptake of Ca^{2+} ions by the resin when expressed in mole per gram resin ? **(2015)**

(A) $\frac{1}{103}$ **(B)** $\frac{1}{206}$ **(C)** $\frac{2}{309}$ **(D)** $\frac{1}{412}$

19. The commercial name for calcium oxide is : **(2016)**

(A) Milk of lime **(B)** Slaked lime **(C)** Limestone **(D)** Quick lime

20. Identify the reaction which does not liberate hydrogen : **(2016)**

(A) Reaction of zinc with aqueous alkali.

(B) Electrolysis of acidified water using Pt electrodes.

(C) Allowing a solution of sodium in liquid ammonia to stand.

(D) Reaction of lithium hydride with B_2H_6

21. Which one of the following statements about water is **FALSE ?** **(2016)**

(A) Water is oxidized to oxygen during photosynthesis.

(B) Water can act both as an acid and as a base.

(C) There is extensive intermolecular hydrogen bonding in the condensed form

(D) Ice formed by heavy water sinks in normal water.

22. The main oxides formed on combustion of Li, Na and K in excess of air are, respectively : **(2016)**

(A) Li_2O, Na_2O and KO_2 **(B)** Li_2O, Na_2O_2 and K_2O

(C) Li_2O_2, Na_2O_2 and KO_2 **(D)** Li_2O, Na_2O_2 and KO_2

23. Identify the incorrect statement regarding heavy water : **(2016)**

(A) It reacts with Al_4C_3 to produce CD_4 and $Al(OD)_3$

(B) It is used as a coolant in nuclear reactors

(C) It reacts with CaC_2 to produce C_2D_2 and $Ca(OD)_2$

(D) It reacts with SO_3 to form deuterated sulphuric acid (D_2SO_4)

24. The correct order of the solubility of alkaline-earth metal sulphates in water is : **(2016)**

(A) Mg < Ca < Sr < Ba **(B)** Mg < Sr < Ca < Ba

(C) Mg > Sr > Ca > Ba **(D)** Mg > Ca > Sr > Ba

25. Both lithium and magnesium display several similar properties due to the diagonal relationship ; however, the one which is incorrect, is : **(2017)**

(A) both form nitrides

(B) Nitrates of both Li and Mg yield NO_2 and O_2 on heating

(C) both form basic carbonates

(D) both form soluble bicarbonates

26. Which one of the following is an oxide ? **(2017)**

(A) KO_2 **(B)** BaO_2 **(C)** SiO_2 **(D)** CsO_2

27. In which of the following reactions, hydrogen peroxide acts as an oxidizing agent ? **(2017)**

(A) $HOCl + H_2O_2 \longrightarrow H_3O^+ + Cl^- + O_2$

(B) $I_2 + H_2O_2 + 2OH^- \longrightarrow 2I^- + 2H_2O + O_2$

(C) $2MnO_4^- + 3H_2O_2 \longrightarrow 2MnO_2 + 3O_2 + 2H_2O + 2OH^-$

(D) $PbS + 4H_2O_2 \longrightarrow PbSO_4 + 4H_2O$

28. A metal 'M' reacts with nitrogen gas to afford 'M_3N'. M_3N on heating at high temperature gives back 'M' and on reaction with water produces a gas 'B'. Gas 'B' reacts with aqueous solution of $CuSO_4$ to form a deep blue compound. 'M' and 'B' respectively are : **(2017)**

(A) Li and NH_3 **(B)** Ba and N_2

(C) Na and NH_3 **(D)** Al and N_2

29. Hydrogen peroxide oxidises $[Fe(CN)_6]^{4-}$ to $[Fe(CN)_6]^{3-}$ in acidic medium but reduces $[Fe(CN)_6]^{3-}$ to $[Fe(CN)_6]^{4-}$ in alkaline medium. The other products formed are, respectively : **(2018)**

(A) H_2O and $(H_2O + O_2)$ **(B)** H_2O and $(H_2O + OH^-)$

(C) $(H_2O + O_2)$ and H_2O **(D)** $(H_2O + O_2)$ and $(H_2O + OH^-)$

30. The isotopes of hydrogen are : **(2019)**

(A) Protium, deuterium and tritium **(B)** Protium and deuterium only

(C) Tritium and protium only **(D)** Deuterium and tritium only