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

16. Sodium when burnt in excess of oxygen gives sodium oxide. Is it true or false ? **(1987)**

17. The metallic lustre exhibited by sodium metal is explained by : **(1987)**

(A) diffusion of sodium ions **(B)** Oscillation of loose electron

(C) excitation of free protons **(D)** existence of body centred cubic lattice

18. A solution of sodium sulphate in water is electrolysed using inert electrodes. The products at cathode and anode are respectively. **(1987)**

(A) H_2, O_2 **(B)** O_2, H_2 **(C)** O_2, Na **(D)** O_2, SO_2

19. Sodium sulphate is soluble in water, whereas barium sulphate is sparingly soluble because : **(1989)**

(A) the hydration energy of sodium sulphate is more than its lattice energy.

(B) the lattice energy of barium sulphate is more than its hydration energy.

(C) the lattice energy has no role to play in solubility

(D) the hydration energy of sodium sulphate is less than its lattice energy

20. When zeolite, which is hydrated sodium aluminium silicate, is treated with hard water, the sodium ions are exchanged with : **(1990)**

(A) H^+ ions **(B)** Ca^{2+} ions **(C)** SO_4^{2-} ions **(D)** Mg^{2+} ions

21. The oxidation state of the most electronegative element in the products of the reaction, BaO_2 with dil. H_2SO_4 are : **(1991)**

(A) 0 and –1 **(B)** –1 and – 2 **(C)** –2 and 0 **(D)** –2 and – 1

22. Arrange the following in increasing order of basic strength : MgO, SrO, K_2O, NiO, CsO_2. **(1991)**

23. Complete and balanced the following chemical reaction. Anhydrous potassium nitrate is heated with excess of metallic potassium. $KNO_3(s) + K(s) \longrightarrow$ ..... + ... **(1992)**

24. The species that do not contain peroxide ions, is **:** **(1992)**

(A) PbO_2 **(B)** H_2O_2 **(C)** SrO_2 **(D)** BaO_2

25. The material used in solar cells contains : **(1993)**

(A) Cs **(B)** Si **(C)** Sn **(D)** Ti

26. **Statement-I** : The alkali metals can form ionic hydrides which contain the hydride ion, H^-. **(1994)**

Statement-II : The alkali metals have low electronegativity, their hydrides conduct electricity when fused and liberate hydrogen gas at the anode.

(A) Statement-I is True, Statement-II is True and Statement-II is a correct explanation for Statement-I

(B) Statement-I is True, Statement-II is True and Statement-II is NOT a correct explanation for Statement-I

(C) Statement-I is True, Statement-II is False

(D) Statement-I is False, Statement-II is True

27. A dilute aqueous solution of Na_2SO_4 is electrolysed using platinum electrodes. The products at the anode and cathode are respectively : **(1996)**

(A) O_2, H_2 **(B)** $S_2O_8^{2-}$, Na **(C)** O_2, Na **(D)** $S_2O_8^{2-}$, H_2

28. Hydrolysis of one mole of peroxodisulphuric acid produces : **(1996)**

(A) two moles of sulphuric acid

(B) two moles of peroxomono sulphuric acid

(C) one mole of sulphuric acid and one mole of peroxomono sulphuric acid

(D) one mole of sulphuric acid, one mole of peroxomono sulphuric acid and one mole of hydrogen peroxide.

29. The following compounds have been arranged in order of their increasing thermal stabilities. Identify the correct order : **(1996)**

I. K_2CO_3 **II.** $MgCO_3$ **III.** $CaCO_3$ **IV.** $BeCO_3$

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

30. Calcium burns in nitrogen to produce a white powder which dissolves in sufficient water to produce a gas A and an alkaline solution. The solution on exposure to air produces a thin solid layer of B on the surface. Identify the compounds A and B. **(1996)**