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

1. Alum helps in purifying water by : **(2002)**

(A) forming Si complex with clay partiles

(B) sulphate part which combines with the dirt and removes it

(C) coagulaing the mud particles

(D) making mud water soluble

2. Number of sigma bonds in P_4O_{10} is : **(2002)**

(A) 6 **(B)** 7 **(C)** 17 **(D)** 16

3. Oxidation number of Cl in $CaOCl_2$ (bleaching power) is : **(2002)**

(A) zero, since it contains Cl_2

(B) -1, since it contains Cl^-

(C) $+1$, since it contains ClO^-

(D) $+1$ and -1 since it contains ClO^- and Cl^-

4. In case of nitrogen, NCl_3 is possible but not NCl_5 while in case of phosphorus, PCl_3 as well as PCl_5 are possible. It is due to : **(2002)**

(A) availability of vacant d-orbitals in P but not in N

(B) lower electronegativity of P than N

(C) lower tendency of H-bond formation in P than N

(D) occurrence of P in solid while N in gaseous state at room temperature

5. In XeF_2, XeF_4, XeF_6 the number of lone pairs on Xe are respectively : **(2002)**

(A) 2, 3, 1 **(B)** 1, 2, 3 **(C)** 4, 1, 2 **(D)** 3, 2, 1

6. Which of the following statements is true ? **(2002)**

(A) HF is less polar than HBr

(B) Absolutely pure water does not contain any ions

(C) Chemical bond formation takes place when forces of attraction overcome the forces of repulsion

(D) In covalency transference of electron takes place

7. When H_2S is passed through Hg_2S we get : **(2002)**

(A) HgS **(B)** $HgS + Hg_2S$ **(C)** $Hg_2S + Hg$ **(D)** Hg_2S

8. Which of the following pairs of molecules will have permanent dipole moments for both members ? **(2003)**

(A) SiF_4 and NO_2 **(B)** NO_2 and CO_2 **(C)** NO_2 and O_3 **(D)** SiF_4 and CO_2

9. Which one of the following substances has the highest proton affinity ? **(2003)**

(A) H_2O **(B)** H_2S **(C)** NH_3 **(D)** PH_3

10. Which one of the following is an amphoteric oxide ? **(2003)**

(A) ZnO **(B)** Na_2O **(C)** SO_2 **(D)** B_2O_3

11. Concentrated hydrochloric acid when kept in open air sometimes produces a cloud of white fumes. The explanation for it is that : **(2003)**

(A) concentrated hydrochloric acid emits strongly smelling HCl gas all the time

(B) oxygen in air reacts with the emitted HCl gas to form cloud of chlorine gas

(C) strong affinity of HCl gas moisture in air results in forming of droplets of liquid solution which appears like a cloudy smoke

(D) due to strong affinity for water, concentrated hydrochloric acid pulls moisture of air towards itself. This moisture forms droplets of water and hence the cloud.

12. What may be expected to happen when phosphine gas is mixed with chlorine gas ? **(2003)**

(A) The mixture only cools down

(B) PCl_3 and HCl are formed and the mixture warms up

(C) PCl_5 and HCl are formed and the mixture cools down

(D) $PH_3 \cdot Cl_2$ is formed with warming up

13. Graphite is a soft solid lubricant extremely difficult to melt. The reason for this anomalous behaviour is that graphite : **(2003)**

(A) is an allotropic form of diamond

(B) has molecules of variable molecular masses like polymers

(C) has carbon atoms arranged in large plates of rings of strongly bound carbon atoms with weak interplate bonds

(D) is a non-crystalline substance

14. Glass is a : **(2003)**

(A) super-cooled liquid **(B)** gel

(C) polymeric mixture **(D)** micro-crystalline solid

15. For making good quality mirrors, plates of float glass are used these are obtained by floating molten glass over a liquid metal which does not solidify before glass. The metal used can be : **(2003)**

(A) tin **(B)** sodium **(C)** magnesium **(D)** mercury