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

16. Among Al_2O_3, SiO_2, P_2O_3 and SO_2 the correct order of acid strength is : **(2004)**

(A) $SO_2 < P_2O_3 < SIO_2 < Al_2O_3$ **(B)** $SiO_2 < SiO_2 < SO_2 < P_2O_3$

(C) $Al_2O_3 < SiO_2 < SO_2 < P_2O_3$ **(D)** $Al_2O_3 < SiO_2 < P_2O_3 < SO_2$

17. Which of the following statements regarding helium is incorrect ? **(2004)**

(A) It is used to fill gas in balloons instead of hydrogen because it is lighter and non-inflammable

(B) It is used as a cryogenic agent for carrying out experiments at low temperatures

(C) It is used to produce and sustain powerful superconducting magnets

(D) It is used in gas-cooled nuclear reactors

18. Which among the following factors is the most important in making fluorine the strongest oxidizing halogens ? **(2004)**

(A) Hydration enthalpy **(B)** Ionization enthalpy

(C) Electron affinity **(D)** Bond dissociation energy

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

(A) forming covalent halides **(2004)**

(B) forming polymeric hydrides

(C) exhibits maximum covalency in compounds

(D) exhibiting amphoteric nature in their oxides

20. Aluminium chloride exists as dimer, Al_2Cl_6 in solid state as well as in solution of non-polar solvents such as benzene. **(2004)**

(A) $\left[Al(OH)_3\right]^{3-} + 3HCl$ **(B)** $\left[Al(H_2O)_6\right]^{3+} + 3Cl^-$

(C) $Al^{3+} + 3Cl^-$ **(D)** $Al_2O_3 + 6HCl$

21. The molecular shapes of SF_4, CF_4 and XeF_4 are : **(2005)**

(A) the same with 2, 0 and 1 lone pairs of electrons on the central atom respectively

(B) the same with 1, 1 and 1 lone pair of electrons on the central atom respectively

(C) different with 0, 1 and 2 lone pairs of electrons on the central atom respectively

(D) different with 1, 0 and 2 lone pairs of electrons on the central atom respectively

22. The number of hydrogen atom(s) attached to phosphorus atom in hypophosphorous acid is : **(2005)**

(A) zero **(B)** two **(C)** one **(D)** three

23. The correct order of the thermal solubility of hydrogen halides (H – X) is : **(2005)**

(A) HI > HBr > HCl > HF **(B)** HF > HCl > HBr > HI

(C) HCl > HF > HBr > HI **(D)** HI > HCl < HF > HBr

24. Heating an aqueous solution of aliminium chloride to dryness will give : **(2005)**

(A) $Al(OH)Cl_2$ **(B)** Al_2O_3 **(C)** Al_2Cl_6 **(D)** $AlCl_3$

25. In silicon dioxide : **(2005)**

(A) there are double bonds between silicon and oxygen atoms

(B) silicon atom is bounded to two oxygen atoms

(C) each silicon atom is surrounded by two oxygen atoms and each oxygen atom is bounded to two oxygen atoms

(D) each silicon atom is surrounded by four oxygen atoms and each oxygen atom is bounded to two silicon atoms

26. The structure of diborane (B_2H_6) contains : **(2005)**

(A) four 2c-2e bonds and four 3c-2e bonds **(B)** two 2e-2e bonds and two 3c-3e bonds

(C) two 2c-2e bonds and four 3c-2e bonds **(D)** four 2c-2e bonds and two 3c-2e bonds

27. What products are expected from the disproportionation reaction of hypochlorous acid ? **(2006)**

(A) $HClO_3$ and Cl_2O **(B)** $HClO_2$ and $HClO_4$

(C) HCl and Cl_2O **(D)** HCl and $HClO_3$

28. Which of the following statement is true ? **(2006)**

(A) H_3PO_3 is a stronger acid than H_2SO_3

(B) In aqueous medium HF is a stronger acid than HCl

(C) $HClO_4$ is a weaker acid than $HClO_3$

(D) HNO_3 is a stronger acid than HNO_2

29. The increasing order of the first ionization enthalpies of the elements B, P, S and F (Lowest first) is :

(A) B < P < S < F **(B)** B < S < P < F **(2006)**

(C) F < S < P < B **(D)** P < S < B < F

30. Identify the incorrect statement among of the following : **(2007)**

(A) Br_2 reacts with hot and strong NaOH solution to give NaBr and H_2O

(B) Ozone reacts with SO_2 to give SO_3

(C) Silicon reacts with NaOH(aq) in the presence of air to give Na_2SiO_3 and H_2O

(D) Cl_2 reacts with excess of NH_3 to give N_2 and HCl