

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

16. Which one of the following oxides is neutral ? (1996)  
 (A) CO (B) SnO<sub>2</sub> (C) ZnO (D) SiO<sub>2</sub>
17. Which of the following halides is least stable and has doubtful existence ? (1996)  
 (A) CCl<sub>4</sub> (B) GeI<sub>4</sub> (C) SnI<sub>4</sub> (D) PbI<sub>4</sub>
18. Aluminium sulphide gives a foul odour when it become damp. Write a balanced chemical equation for the reaction. (1997)
19. Anhydrous AlCl<sub>3</sub> is covalent. From the data given below, predict whether it would remain covalent or become ionic in aqueous solution. (Ionisation energy for Al = 5137 kJ mol<sup>-1</sup>) (1997)  
 $\Delta H_{\text{hydration}}$  for Al<sup>3+</sup> = - 4665 kJ mol<sup>-1</sup>  
 $\Delta H_{\text{hydration}}$  for Cl<sup>-</sup> = - 381 kJ mol<sup>-1</sup>
20. A liquid which is permanently super cooled is frequently called \_\_\_\_\_. (1997)
21. **Statement-I :** Al(OH)<sub>3</sub> is amphoteric in nature. (1998)  
**Statement-II :** Al – O and O – H bonds can be broken with equal ease in Al(OH)<sub>3</sub>.  
 (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
22. Draw the structure of a cyclic silicate, (Si<sub>3</sub>O<sub>9</sub>)<sup>6-</sup> with proper labeling. (1998)
23. The two types of bonds present in B<sub>2</sub>H<sub>6</sub> are covalent and ..... (1999)
24. In compounds of type ECl<sub>3</sub>, where E = B, P, As or Bi, the angles Cl – E – Cl for different E are in the order : (1999)  
 (A) B < P = As = Bi (B) B > P > As > Bi  
 (C) B > P = As = Bi (D) B < P < As < Bi
25. **Statement I** Between SiCl<sub>4</sub> and CCl<sub>4</sub> only SiCl<sub>4</sub> reacts with water. (2001)  
**Statement II** SiCl<sub>4</sub> is ionic and CCl<sub>4</sub> is covalent.  
 (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

26. Compound X on reduction with  $\text{LiAlH}_4$  gives a hydride Y containing 21.72% hydrogen along with other products. The compound Y reacts with air explosively resulting in boron trioxide. Identify X and Y. Give balanced reactions involved in the formation of Y and its reaction with air. Draw the structure of Y. (2001)
27. (i) How is boron obtained from borax ? Give chemical equations with reaction conditions. (2002)  
(ii) Write the structure of  $\text{B}_2\text{H}_6$  and its reaction with  $\text{HCl}$ (excess).
28. Identify the correct order of acidic strength of  $\text{CO}_2$ ,  $\text{CuO}$ ,  $\text{CaO}$ ,  $\text{H}_2\text{O}$  : (2002)  
(A)  $\text{CaO} < \text{CuO} < \text{H}_2\text{O} < \text{CO}_2$  (B)  $\text{H}_2\text{O} < \text{CuO} < \text{CaO} < \text{CO}_2$   
(C)  $\text{CaO} < \text{H}_2\text{O} < \text{CuO} < \text{CO}_2$  (D)  $\text{H}_2\text{O} < \text{CO}_2 < \text{CaO} < \text{CuO}$
29.  $\text{Me}_2\text{SiCl}_2$  on hydrolysis will produce : (2003)  
(A)  $(\text{Me})_2\text{Si}(\text{OH})_2$  (B)  $(\text{Me})_2\text{Si} = \text{O}$   
(C)  $[-\text{O} - (\text{Me})_2\text{Si}-]_n$  (D)  $\text{Me}_2\text{SiCl}(\text{OH})$
30.  $\text{AlF}_3$  is insoluble in anhydrous  $\text{HF}$  but when little  $\text{KF}$  is added to the compound it becomes soluble. On addition of  $\text{BF}_3$ ,  $\text{AlF}_3$  is precipitated. Write the balanced chemical equations. (2004)