

Date Planned : __ / __ / __	Daily Tutorial Sheet-3	Expected Duration : 30 Min
Actual Date of Attempt : __ / __ / __	Level-1	Exact Duration : _____

31. Monosilane on coming in contact with air burns with a luminous flame producing vortex rings. These rings are of :
 (A) SiO_2 (B) SiO (C) Si (D) H_2SiO_3
32. Which one of the following statements about the zeolites is false ?
 (A) They are used as cation exchangers
 (B) They have open structure which enables them to take up small molecules
 (C) Zeolites are aluminosilicates having three dimensional network
 (D) Some of the SiO_4^{4-} units are replaced by AlO_4^{5-} and concentrated ions in zeolites
33. A metal, M forms chlorides in its +2 and +4 oxidation states. Which of the following statements about these chlorides is correct ?
 (A) MCl_2 is more volatile than MCl_4
 (B) MCl_2 is more soluble in the anhydrous ethanol than MCl_4
 (C) MCl_2 is more ionic than MCl_4
 (D) MCl_2 is more easily hydrolysed than MCl_4
- *34. Buckminster fullerene :
 (A) is covalent network solid
 (B) has only sp^2 hybridised carbon atoms
 (C) is non aromatic
 (D) is thermodynamically most stable form of carbon
35. Addition of SnCl_2 to HgCl_2 gives precipitate : 
 (A) White turning to red (B) White turning to grey
 (C) Black turning to white (D) None of the above
36. Name of structure of silicates in which three oxygen atoms of $[\text{SiO}_4]^{4-}$ are shared is :
 (A) Pyrosilicate (B) Sheet silicate
 (C) Linear chain silicate (D) Three dimensional silicate
37. In silicon dioxide :
 (A) There are double bonds between silicon and oxygen atoms
 (B) Silicon atom is bonded to two oxygen atoms
 (C) Each silicon atom is surrounded by two oxygen atoms and each oxygen atom is bonded to two silicon atoms
 (D) Each silicon atom is surrounded by four oxygen atom and each oxygen atom is bonded to two silicon atoms
38. The tendency for catenation in group 14 elements varies in the order
 (A) $\text{C} >> \text{Si} > \text{Ge} = \text{Sn} > \text{Pb}$ (B) $\text{C} << \text{Si} < \text{Ge} = \text{Sn} < \text{Pb}$
 (C) $\text{C} >> \text{Si} < \text{Ge} < \text{Sn} < \text{Pb}$ (D) $\text{C} >> \text{Si} = \text{Ge} = \text{Sn} > \text{Pb}$

39. On controlled hydrolysis and condensation, R_3SiCl yields :
- (A) $R_3Si - O - SiR_3$ (B) $(-R_3Si - O - SiR_3 -)_n$
- (C) R_3SiOH (D) $\begin{array}{c} R \quad R \\ | \quad | \\ -Si - O - Si - \\ | \quad | \\ O \quad O \\ | \quad | \\ -Si - O - Si - \\ | \quad | \end{array}$
40. When tin is treated with concentrated nitric acid :
- (A) It is converted into stannous nitrate (B) It is converted into stannic nitrate
- (C) It is converted into metastannic acid (D) It becomes passive
41. $(CH_3)_2SiCl_2$ undergoes hydrolysis but $(CH_3)_2CCl_2$ does not Why ?
- (A) Low lying d-orbitals are present in Si but not in C
- (B) Only 3 p orbitals are involved in C
- (C) Silicon is more acidic
- (D) Si - Cl bond is more polar than C - Cl bond
42. Which one shows most pronounced inert pair effect ?
- (A) Si (B) Sn (C) Pb (D) C
43. Which of the following is an electron deficient molecule ?
- (A) LiH (B) B_2H_6 (C) $LiBH_4$ (D) $B_3N_3H_6$
44. Which of the following organo-silicon compound on hydrolysis will give cyclic silicone ?
- (A) R_3SiCl (B) $RSiCl_3$ (C) $SiCl_4$ (D) R_2SiCl_2
45. Bond energy is highest for :
- (A) Sn - Sn (B) C - C (C) Si - Si (D) Ge - Ge