

### Covalent bonding

41. Atoms in the water molecule are linked by

- (a) Electrovalent bond
- (b) Covalent bond
- (c) Coordinate covalent bond
- (d) Odd electron bond

42. Which is the correct electron dot structure of  $N_2O$  molecule

- (a)  $:N = N = \ddot{O}$
- (b)  $:N \equiv N^+ - \ddot{O}^-:$
- (c)  $\ddot{N} = \ddot{N} = \ddot{O}$
- (d)  $:N = N = \ddot{O}:$

43. A covalent bond between two atoms is formed by which of the following

- (a) Electron nuclear attraction
- (b) Electron sharing
- (c) Electron transfer
- (d) Electrostatic attraction

44. The electronic configuration of a metal  $M$  is  $1s^2, 2s^2 2p^6, 3s^1$ . The formula of its oxides will be

- (a)  $MO$
- (b)  $M_2O$
- (c)  $M_2O_3$
- (d)  $MO_2$

45. Which of the following statements regarding covalent bond is not true

- (a) The electrons are shared between atoms
- (b) The bond is non-directional
- (c) The strength of the bond depends upon the extent of overlapping
- (d) The bond formed may or may not be polar

46. If the electronic configuration of  $M = 2, 8, 3$  and that of  $A = 2, 8, 7$ , the formula of the compound is

- (a)  $M_2A_3$
- (b)  $MA_2$
- (c)  $M_2A$
- (d)  $MA_3$

47. The table shown below gives the bond dissociation energies ( $E_{diss}$ ) for single covalent bonds of carbon (C) atoms with element  $A, B, C$  and  $D$ . Which element has the smallest atoms

Bond	$E_{diss}(kJmol^{-1})$
$C - A$	240
$C - B$	328
$C - C$	276
$C - D$	485

- (a) A
- (b) B
- (c) C
- (d) D

48. If a molecule  $X_2$  has a triple bond, then  $X$  will have the electronic configuration

- (a)  $1s^2 2s^2 2p^5$
- (b)  $1s^2 2s^2 2p^3$
- (c)  $1s^2 2s^1$
- (d)  $1s^2 2s^2 2p^1$



49. Which of the following compounds does not follow the octet rule for electron distribution  
(a)  $PCl_5$  (b)  $PCl_3$   
(c)  $H_2O$  (d)  $PH_3$
50. The valency of  $A = 3$  and  $B = 2$ , then the compound is  
(a)  $A_2B_3$  (b)  $A_3B_2$   
(c)  $A_3B_3$  (d)  $A_2B_2$
51. The number of electrons shared by each outermost shell of  $N_2$  is  
(a) 2 (b) 3  
(c) 4 (d) 5
52. Which of the following substances when dissolved in water will give a solution that does not conduct electricity  
(a) Hydrogen chloride  
(b) Potassium hydroxide  
(c) Sodium acetate  
(d) Urea
53. Which of the following atoms has minimum covalent radius  
(a)  $B$  (b)  $C$   
(c)  $N$  (d)  $Si$
54. Boron form covalent compound due to  
(a) Small size  
(b) Higher ionization energy  
(c) Lower ionization energy  
(d) Both (a) and (b)
55. Two elements  $X$  and  $Y$  have following electron configurations  
 $X = 1s^2, 2s^2 2p^6, 3s^2 3p^6, 4s^2$   
and  $Y = 1s^2, 2s^2 2p^6, 3s^2 3p^6$   
The compound formed by combination of  $X$  and  $Y$  is  
(a)  $XY_5$  (b)  $X_2Y_5$   
(c)  $X_5Y_3$  (d)  $XY_2$
56. Covalent compounds have low melting point because  
(a) Covalent bond is less exothermic  
(b) Covalent molecules have definite shape  
(c) Covalent bond is weaker than ionic bond  
(d) Covalent molecules are held by weak Vander Waal's force of attraction
57.  $p$  and  $n$ -type of semiconductors are formed due to  
(a) Covalent bonds  
(b) Metallic bonds  
(c) Ionic bonds  
(d) Co-ordinate bond





58. Which of the following is Lewis acid

- (a)  $BF_3$  (b)  $NH_3$   
(c)  $PH_3$  (d)  $SO_2$

59. Among the species :  $CO_2$ ,  $CH_3COO^-$ ,  $CO$ ,  $CO_3^{2-}$ ,  $HCHO$  which has the weakest carbon-oxygen bond

- (a)  $CO_2$  (b)  $CH_3COO^-$   
(c)  $CO$  (d)  $CO_3^{2-}$

60. Valency of sulphur in  $Na_2S_2O_3$  is

- (a) Two (b) Three  
(c) Four (d) Six

