

## Coordinate Covalent Bond

**1. The bond formed between a lewis acid and a lewis base is**

1. Ionic Bond      2. Covalent bond      3. Dative Bond      4. Hydrogen bond

**2. According to octet rule  $\text{SO}_3$  contains -----number of dative bonds**

- 1) 1      2) 2      3) 3      4) 4

**3. Co ordinate covalent compounds dissolve more in**

- 1) Polar solvents      2) Non Polar Solvents  
3) Both 1 and 2      4) Water Only

**4. Co-ordinate covalent bond is formed by**

1. Transfer of electrons      2. Sharing of electrons  
3. Donation of electrons      4. None of these processes

**5.  $\text{NH}_4\text{CN}$  contains**

1. ionic bond      2. Covalent bond      3. Dative bond      4. All

**6. Dative bond is not present in**

1.  $\text{BF}_3$       2.  $\text{N}_2\text{O}$       3.  $\text{BCl}_3$       4.  $\text{B}_3\text{N}_3\text{H}_6$

**7.  $\text{BF}_3$  forms an adduct with  $\text{NH}_3$  because**

1. Nitrogen has high electro negativity.  
2. Boron has high electro negativity.  
3. Boron has an empty p-Orbital and Nitrogen has lone pair of electrons.  
4. Boron has electro positive nature.

**8. In the coordinate covalency**

1. Electrons are equally shared by the atoms
2. Electrons of one atom are shared between the two atoms
3. Hydrogen bond is formed
4. None of the above

**9. Molecule having maximum number of dative bonds is**

1.  $\text{H}_2\text{O}_2$                       2.  $\text{NH}_4^+$                       3.  $\text{Al}_2\text{Cl}_6$                       4.  $\text{B}_3\text{N}_3\text{H}_6$

**10. In potassium ferrocyanide, the nature of bond between iron and cyanide ions is**

1. Ionic Bond                      2. Covalent Bond                      3. Dative Bond                      4. Polar Bond

**11. When a cation gets hydrated, normally the bond formed between cation and water molecule is**

1. Dative bond                      2. Ionic bond                      3. Covalent bond                      4. Hydrogen bond

**12. The type of bonds present in  $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$  are**

- 1) Coordination only
- 2) Covalent and Co-ordinate only
- 3) Covalent, Co-ordinate and ionic only
- 4) Covalent, Co-ordinate, ionic and hydrogen bond

**13. The type of bonds present in  $\text{NH}_4\text{Cl}$  are**

- 1) Ionic                      2) Covalent                      3) Coordinate Covalent                      4) All the above

14. A) Dative bond is directional.

B) Coordinate covalent compounds dissolve more in non polar solvents.

C) Coordinate covalent compounds are not electrical conductors.

The wrong statement (s)

- 1) A only                      2) B only                      3) C only                      4) None

15. Which of the following has no dative bond?

- 1)  $\text{NO}_3^-$                       2)  $\text{NO}_2^-$                       3)  $\text{NH}_4^+$                       4)  $\text{H}_3\text{O}^+$

16. The type of bond present in  $\text{K}_3[\text{Fe}(\text{CN})_6]$

- 1) Ionic                      2) Covalent                      3) Coordinate                      4) All the above

17.  $\text{NH}_3 + \text{BF}_3 \rightarrow \text{NH}_3\text{BF}_3$ , based on equation which of the following statement is true

i) In  $\text{BF}_3$ , hybridization changes from  $\text{sp}^2$  to  $\text{sp}^3$

ii) In  $\text{NH}_3$ , hybridization has no change

iii) In  $\text{NH}_3$ , bond angle increases

iv) In  $\text{BF}_3$ , bond angle has no change

- 1) i and ii are correct                      2) i, ii and iii are correct  
3) i, ii and iv are correct                      4) All are correct

18. The species in which there is no dative bond is

- 1)  $\text{KNC}$                       2)  $\text{H}_3\text{O}^+$                       3)  $\text{CO}$                       4)  $\text{NH}_3$

19. The change in hybridization of central atom during the formation of hydronium ion from water molecule

- 1)  $\text{sp}^2$  to  $\text{sp}^3$                       2)  $\text{sp}$  to  $\text{sp}^2$                       3)  $\text{sp}^3$  to  $\text{sp}^2$                       4) No change

20. Which of the following can accept an electron pair in the formation of dative bond?

a)  $\text{NH}_3$

b)  $\text{AlCl}_3$

c)  $\text{CH}_4$

d)  $\text{BF}_3$

1) a and b

2) b and c

3) c and d

4) b and d

**KEY**

1) 3    2) 2    3) 2    4) 2    5) 4    6) 3    7) 3    8) 2    9) 4    10) 3

11) 1    12) 4    13) 4    14) 4    15) 2    16) 4    17) 2    18) 4    19) 4    20) 4