NEET : CHAPTER WISE TEST-4

SUBJECT :- CHEMISTRY **DATE.....**

CLASS :- 11th **NAME.....**

CHAPTER :- CHEMICAL BONDING **SECTION.....**

(SECTION-A)

1. Which forms a crystal of NaCl ?
(A) NaCl molecules
(B) Na^+ and Cl^- ions
(C) Na and Cl atoms
(D) None of these

2. Two element have electronegativity of 1.2 and 3.0. Bond formed between them would be :
(A) predominantely ionic
(B) predominantely covalent
(C) co-ordinate
(D) metallic

3. Which of the following shows the highest lattice energy ?
(A) RbF (B) CsF
(C) NaF (D) KF

4. When two atoms combine to form a stable molecule :
(A) energy is released
(B) energy is absorbed
(C) energy is neither released nor absorbed
(D) energy may either released or absorbed

5. Which condition favours the bond formation ?
(A) Maximum attraction and maximum potential energy
(B) Minimum attraction and minimum potential energy
(C) Minimum potential energy and maximum attraction
(D) None of the above

6. The maximum covalency of representative elements is equal to (excluding 1st and 2nd period) :
(A) the number of unpaired p-electrons
(B) the number of paired d-electrons
(C) the number of unpaired s and p-electrons
(D) the actual number of s and p-electrons in the outermost shell.

7. The types of bond present in N_2O_5 are :
(A) only covalent
(B) only ionic
(C) ionic and covalent
(D) covalent & coordinate

8. The octet rule is not obeyed in :
(A) CO_2 (B) BCl_3
(C) PCl_5 (D) (B) and (C) both

9. For the formation of covalent bond the difference in the value of electronegativity should be :
(A) 1.7
(B) More than 1.7
(C) 1.7 or more
(D) equal to or less than 1.7

10. Which of the following species are hypervalent ?
1. ClO_4^-, 2. BF_3,
3. SO_4^{2-}, 4. CO_3^{2-}
(A) 1, 2, 3 (B) 1, 3
(C) 3, 4 (D) 1, 2

11. If the atomic number of element X is 7 the lewis diagram for the element is :
(A) X• (B) 
(C)  (D) 

12. What are the formal charges on central sulphur and each terminal oxygen atoms in SO_2?
(A) 0, 0, 0 (B) + 2, 0, – 1
(C) 0, – 1, + 1 (D) + 2, + 2, + 2

13. Resonating structures have different :
(A) atomic arrangements
(B) electronic arrangements
(C) functional groups
(D) alkyl groups

14. What is correct order of bond order of Cl–O bond.
(A) $ClO_4^- > ClO_3^- > ClO_2^- > ClO^-$
(B) $ClO^- < ClO_2^- > ClO_3^- < ClO_4^-$
(C) $ClO_3^- < ClO_2^- < ClO_4^- < ClO^-$
(D) $ClO_2^- < ClO_3^- < ClO_4^- < ClO^-$

15. Identify the correct statement :
(A) single N–N bond is stronger than single P–P bond
(B) single N–N bond is weaker than single P–P bond
(C) N ≡N is weaker than P≡P
(D) None of these

16. Number and type of bonds between two carbon atoms in CaC_2 are :
(A) 3 sigma (σ) and 2 pi (π) bond
(B) one σ and two π bonds
(C) one σ and one and a half π bond
(D) one σ bond

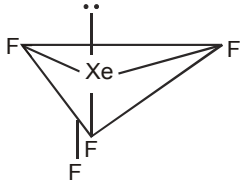
17. Acetylene consists of :
(A) both sigma and pi bonds
(B) sigma bond only
(C) pi bond only
(D) none of these

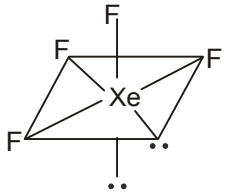
18. Number of bonds in SO_2 are :
(A) two σ and two π
(B) two σ and one π
(C) two σ, two π and one lone pair
(D) none of these

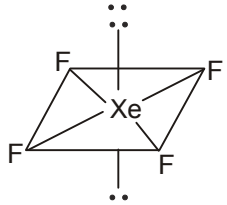
19. Which of the following has been arranged in increasing order of % p-character?
(A) $sp < sp^2 < sp^3$ (B) $sp^3 < sp^2 < sp$
(C) $sp^2 < sp^3 < sp$ (D) $sp^2 < sp < sp^3$

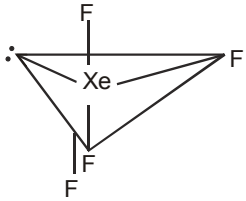
20. Which is not true about CH_4 molecule ?
(A) Tetrahedral shape
(B) 109.28° bond angle
(C) Four sigma bonds
(D) One lone pair of electrons on carbon

21. Which is the right structure of XeF_4 ?

(A)


(B)


(C)


(D)


22. The ion which is not tetrahedral in shape is :
(A) BF_4^- (B) NH_4^+
(C) XeO_4 (D) ICl_4^-

23. The pair having similar geometry is :
(A) BF_3, NH_3 (B) BF_3, AlF_3
(C) BeF_2, H_2O (D) BCl_3, PCl_3

24. The correct order of bond angle is :
(A) $H_2S < NH_3 < BF_3 < CH_4$
(B) $NH_3 < H_2S < CH_4 < BF_3$
(C) $H_2S < NH_3 < CH_4 < BF_3$
(D) $H_2S < CH_4 < NH_3 < BF_3$

25. During the formation of a molecular orbital from atomic orbitals of the same atom, probability of electron density is :
(A) non zero in the nodal plane
(B) maximum in the nodal plane
(C) zero in the nodal plane
(D) zero on the surface of the lobe

26. Which one of the following can not exist on the basis of molecular orbital theory ?
(A) H_2^+ (B) He_2^+
(C) C_2 (D) He_2

27. Among the following species, which has the minimum bond length ?
(A) B_2 (B) C_2
(C) F_2 (D) O_2^-

28. Number of antibonding electrons in N_2 molecule is :
(A) 4 (B) 10 (C) 12 (D) 14

29. A simplified application of molecular orbital theory to the hypothetical 'molecule' OF would give its bond order as :
(A) 2 (B) 1.5 (C) 1.0 (D) 0.5

30. According to Fajan's rule covalent character is favoured by :
(A) large cation and small anion
(B) small cation and large anion
(C) large cation and large anion
(D) small cation and small anion

31. Correct order of covalent character of alkaline earth metal chloride in
(A) $BeCl_2 < MgCl_2 < CaCl_2 < SrCl_2$
(B) $BeCl_2 < CaCl_2 < SrCl_2 < MgCl_2$
(C) $BeCl_2 > MgCl_2 > CaCl_2 > SrCl_2$
(D) $SrCl_2 > BeCl_2 > CaCl_2 > MgCl_2$

32. Which is most ionic according to Fajan's rule?:
(A) AlF_3 (B) Al_2O_3
(C) AlN (D) Al_4C_3

33. Which statement(s) is incorrect ?
(A) Polarising power refers to cation.
(B) Polarisability refers to anion.
(C) Small cation is more efficient to polarise anion.
(D) Molecules in which cation having pseudo inert gas configuration are more Ionic.

34. Among Na^+, Mg^{2+} and Al^{3+}, the correct order of ease of formation of ionic compounds is :
(A) $Al^{3+} > Mg^{2+} > Na^+$
(B) $Na^+ > Mg^{2+} > Al^{3+}$
(C) $Mg^{2+} > Al^{3+} > Na^+$
(D) $Al^{3+} > Na^+ > Mg^{2+}$

35. The most polar bond is :
(A) C – H (B) N – H
(C) S – H (D) O – H

(SECTION-B)

36. Of the following molecules, the one, which has permanent dipole moment, is :
(A) SiF_4 (B) BF_3
(C) PF_3 (D) PF_5

37. The correct order of dipole moment is :
(A) $CH_4 < NF_3 < NH_3 < H_2O$
(B) $NF_3 < CH_4 < NH_3 < H_2O$
(C) $NH_3 < NF_3 < CH_4 < H_2O$
(D) $H_2O < NH_3 < NF_3 < CH_4$

38. The dipole moment of HCl is 1.03 D. If H–Cl bond distance is 1.26 Å, what is the percentage of ionic character in the H–Cl bond -
(A) 60% (B) 39%
(C) 29% (D) 17%

39. Which is the true statement about $(SiH_3)_3N$?
(A) It is trigonal planar.
(B) It is trigonal pyramidal.
(C) It is stronger lewis base than that of $(CH_3)_3N$.
(D) It has a total of 9 sigma bonds.

40. Which of the following is least volatile ?
(A) HF (B) HCl
(C) HBr (D) HI

41. Which one of the following does not have intermolecular H-bonding ?
(A) H_2O (B) o-nitro phenol
(C) HF (D) CH_3COOH

42. Which of the following molecule exhibits hydrogen-bonding ?
(A) CH_4 (B) H_2Se
(C) N_2H_4 (D) H_2S

43. Hydrogen bonding would not affect the boiling point of :
(A) HI (B) NH_3
(C) CH_3OH (D) H_2O

44. Which of the following compound has maximum number of H-bonds per mole ?
(A) HF (B) PH_3
(C) H_2O (D) OF_2

45. Which of the following models best describes the bonding within a layer of the graphite structure ?
(A) metallic bonding
(B) ionic bonding
(C) covalent bonding
(D) van der Waals forces

46. Which of the following bonds/forces is weakest ?
(A) Covalent bond (B) Ionic bond
(C) Metallic bond (D) London force

47. Among the following, van der Waals forces are strongest in :
(A) HBr (B) LiBr
(C) LiCl (D) AgBr

48. Match list I with List II and select the correct answer using the codes given below the lists.

List I (Compound)	**List II (Shape)**
(A) CS_2	1. Bent
(B) SO_2	2. Linear
(C) BF_3	3. Trigonal planer
(D) NH_3	4. Tetrahedral
	5. Trigonal pyramidal

Code :

	(A)	(B)	(C)	(D)
(A)	2	1	3	5
(B)	1	2	3	5
(C)	2	1	5	4
(D)	1	2	5	4

49. **Assertion :** Between $SiCl_4$ and CCl_4, only $SiCl_4$ reacts with water.
Reason : Si Cl_4 is ionic and CCl_4 is covalent.
(A) If both (A) and (R) are true, and (R) is the correct explanation of (A).
(B) If both (A) and (R) are true but (R) is not the correct explanation of (A).
(C) If (A) is true but (R) is false.
(D) If (A) is false but (R) is true.

50. **Assertion :** BCl_3, BBr_3 and BI_3 all are lewis bases.
Reason : BCl_3, BBr_3 and BI_3 all are electron deficient compounds.
(A) If both (A) and (R) are true, and (R) is the correct explanation of (A).
(B) If both (A) and (R) are true but (R) is not the correct explanation of (A).
(C) If (A) is true but (R) is false.
(D) If (A) is false but (R) is true.