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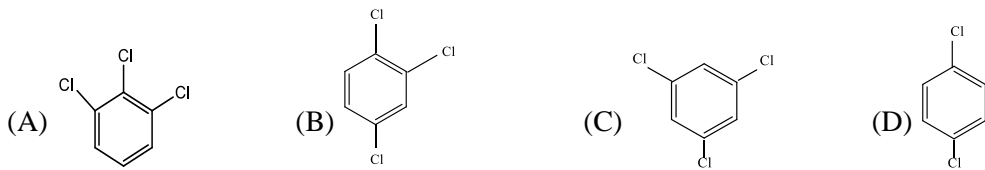
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**CHEMISTRY | ASSIGNMENT –2| CLASS 11TH| CHEMICAL BONDING**

- Ionic bond is not a true bond, because  
(A) it is nondirectional (B) it is not strong  
(C) it is directional (D) it has repulsion between ions
- $\text{NH}_3$  and  $\text{BF}_3$  combine readily because of the formation of :  
(A) a covalent bond (B) a hydrogen bond (C) a coordination bond (D) an ionic bond
- Iron is harder than sodium because  
(A) iron atoms are smaller (B) iron atoms are more closely packed  
(C) metallic bonds are stronger in sodium (D) metallic bonds are stronger in iron
- The types of bonds present in  $\text{CuSO}_4 \cdot 5\text{H}_2\text{O}$  are  
(A) electrovalent and covalent (B) electrovalent and coordinate covalent  
(C) covalent and coordinate covalent  
(D) electrovalent, covalent and coordinate covalent & H - bond
- Which of the following has minimum energy?  
(A)  $\sigma$  bond (B)  $\pi$  bond (C) ionic bond (D) hydrogen bond
- A: tetracyanomethane B: Carbondioxide C: Benzene D: 1,3-buta-di-ene  
Ratio of sigma and pi bonds is in order :  
(A)  $A=B<C<D$  (B)  $A=B<D<C$  (C)  $A=B=C=D$  (D)  $C<D<A<B$
- How many bonded electron pairs are present in  $\text{IF}_7$  molecule :  
(A) 6 (B) 7 (C) 5 (D) 8
- The ratio of  $\sigma$  and  $\pi$  bonds in benzene is :  
(A) 2 (B) 6 (C) 4 (D) 8
- $\text{PCl}_5$  exists but  $\text{NCl}_5$  does not because :  
(A) Nitrogen has no vacant 2d-orbital (B)  $\text{NCl}_5$  is unstable  
(C) Nitrogen atom is much smaller than p (D) Nitrogen is highly inert
- The p-p orbital overlapping is present in the following molecule  
(A) Hydrogen (B) Hydrogen bromide (C) Hydrogen chloride (D) Chlorine
- Number of bonds in  $\text{SO}_2$   
(A) Two  $\sigma$  and two  $\pi$  (B) Two  $\sigma$ , One  $\pi$   
(C) Two  $\sigma$ , two  $\pi$  and one lone pair (D) Three  $\sigma$  bonds
- Triple bond in ethyne is formed from  
(A) Three sigma bonds (B) Three pi bonds  
(C) One sigma and two pi bonds (D) Two sigma and one pi bond
- The bond in the formation of fluorine molecule will be  
(A) Due to s-s overlapping (B) Due to s-p overlapping  
(C) Due to p-p overlapping (D) Due to hybridization
- The number of shared pairs of electrons in propane is  
(A) 2 (B) 4 (C) 6 (D) 10

15.  $\text{Mg}_2\text{C}_3$  reacts with water forming propyne,  $\text{C}_3^{4-}$  has :  
 (A) two sigma and two pi bonds (B) three sigma and one pi bonds  
 (C) two sigma and one pi bonds (D) two sigma and three pi bonds
16. How many  $\sigma$ - and  $\pi$ - bonds are there in salicylic acid?  
 (A)  $10\sigma, 4\pi$  (B)  $16\sigma, 4\pi$  (C)  $18\sigma, 2\pi$  (D)  $16\sigma, 2\pi$
17. When 2s-2s, 2p-2p and 2p-2s orbitals overlap, the bond strength decreases in order  
 (A)  $p-p > s-s > p-s$  (B)  $p-p > p-s > s-s$  (C)  $s-s > p-p > p-s$  (D)  $s-s > p-s > p-p$
18. Fluorine molecule is formed by the overlapping of-  
 (A) s-p orbitals (B) s-s orbitals  
 (C) p-p orbitals by end to end manner (D) p-p orbitals by sides to sides manner
19. In the  $\text{XeF}_4$  molecule, the Xe atom is in the  
 (A)  $sp^2$ -hybridized state (B)  $sp^3$ -hybridised state  
 (C)  $sp^2d$ -hybridized state (D)  $sp^3d^2$  Hybridisation
20. If a molecule  $\text{MX}_3$  has zero dipole moment, the sigma bonding orbital used by M (atm.no. < 21) are:  
 (A) pure p (B) sp hybrid (C)  $sp^2$  hybrid (D)  $sp^3$  hybrid
21. In the context of carbon, which of the following is arranged in the correct order of electronegativity?  
 (A)  $sp > sp^2 > sp^3$  (B)  $sp^3 > sp^2 > sp$  (C)  $sp^2 > sp > sp^3$  (D)  $sp^3 > sp > sp^2$
22. In the series ethane, ethylene and acetylene, the C-H bond energy is :  
 (A) The same in all the three compounds (B) Greatest in ethane  
 (C) Greatest in ethylene (D) Greatest in acetylene
23. The central atom in a molecule is in  $sp^2$  hybrid state. The shape of molecule will be  
 (A) Pyramidal (B) Tetrahedral (C) Octahedral (D) Trigonal planar
24. A  $sp^3$  hybridized orbital contains  
 (A)  $1/4$  s- character (B)  $1/2$  s- character (C)  $2/3$  s- character (D)  $3/4$  s- character
25. The bond angle in ethylene is  
 (A)  $180^\circ$  (B)  $120^\circ$  (C)  $109^\circ$  (D)  $90^\circ$
26. The mode of hybridization of carbon in  $\text{CO}_2$  is  
 (A) sp (B)  $sp^2$  (C)  $sp^3$  (D) None of these
27.  $\text{CCl}_4$  has the hybridization  
 (A)  $sp^3d$  (B)  $dsp^2$  (C) sp (D)  $sp^3$
28. Which of the following hybridization results in non-planar orbitals  
 (A)  $sp^3$  (B)  $dsp^2$  (C)  $sp^2$  (D) sp
29. Percentage of s-character in  $sp^3$  hybrid orbital is  
 (A) 25 (B) 50 (C) 66 (D) 75
30. For which of the following hybridization the bond angle is maximum  
 (A)  $sp^2$  (B) sp (C)  $sp^3$  (D)  $dsp^2$
31. s-character in sp hybridized orbitals are  
 (A)  $1/3$  (B)  $1/2$  (C)  $1/4$  (D)  $2/3$
32. The correct order towards bond angle is  
 (A)  $sp < sp^2 < sp^3$  (B)  $sp^2 < sp < sp^3$  (C)  $sp^3 < sp^2 < sp$   
 (D) Bond angle does not depend on hybridization

33. The correct order of increasing X-O-X bond angle is (X = H, F or Cl) :  
 (A)  $\text{H}_2\text{O} > \text{Cl}_2\text{O} > \text{F}_2\text{O}$  (B)  $\text{Cl}_2\text{O} > \text{H}_2\text{O} > \text{F}_2\text{O}$  (C)  $\text{F}_2\text{O} > \text{Cl}_2\text{O} > \text{H}_2\text{O}$  (D)  $\text{F}_2\text{O} > \text{H}_2\text{O} > \text{Cl}_2\text{O}$
34. Hybridization of carbon in  $\text{C}_3\text{O}_2$  is :  
 (A) sp (B)  $\text{sp}^2$  (C)  $\text{sp}^3$  (D)  $\text{sp}^3\text{d}$
35. Carbon atoms in  $\text{C}_2(\text{CN})_4$  are :  
 (A) sp hybridized (B)  $\text{sp}^2$  hybridized  
 (C) sp and  $\text{sp}^2$  hybridized (D) sp,  $\text{sp}^2$  and  $\text{sp}^3$  hybridized
36. The bond angle in  $\text{PH}_3$  is :  
 (A) Much lesser than  $\text{NH}_3$  (B) Equal to that in  $\text{NH}_3$   
 (C) Much greater than in  $\text{NH}_3$  (D) Slightly more than in  $\text{NH}_3$
37. The hybridization of atomic orbitals of nitrogen in,  $\text{RN}_3$  and are  
 (A)  $\text{sp}^2$ ,  $\text{sp}^3$  and  $\text{sp}^2$  respectively (B)  $\text{sp}^2$ , sp and  $\text{sp}^2$  respectively  
 (C)  $\text{sp}^2$ , sp,  $\text{sp}^3$  respectively (D)  $\text{sp}^2$ ,  $\text{sp}^3$  and sp respectively
38. Specify the coordination geometry around and hybridization of N and B atoms in a 1:1 complex of  $\text{BF}_3$  and  $\text{NH}_3$   
 (A) N : tetrahedral,  $\text{sp}^3$  ; B : tetrahedral,  $\text{sp}^3$  (B) N : pyramidal,  $\text{sp}^3$  ; B : pyramidal,  $\text{sp}^3$   
 (C) N: pyramidal,  $\text{sp}^3$  ; B : planar,  $\text{sp}^2$  (D) N: pyramidal,  $\text{sp}^3$  ; B : tetrahedral,  $\text{sp}^3$
39. If s character decreases in hybrid orbital, then bond angle  
 (A) decreases (B) increases (C) remains uncertain (D) all are wrong
40.  $\text{XeF}_2$  involves hybridization  
 (A)  $\text{sp}^3$  (B)  $\text{sp}^3\text{d}$  (C)  $\text{sp}^3\text{d}^2$  (d) None of these
41.  $\text{sp}^3$  hybridisation is found in  
 (A)  $\text{CO}_3^{2-}$  (B)  $\text{BF}_3$  (C)  $\text{NO}_3^-$  (D)  $\text{NH}_3$
42.  $\text{BeCl}_2$  has which of the following types of orbital overlap?  
 (A)  $\text{sp}^2$ -p (B) sp-p (C)  $\text{sp}^3$ -p (D) s-p
43. Octahedral molecular shape exists in..... hybridization  
 (A)  $\text{sp}^3\text{d}$  (B)  $\text{sp}^3\text{d}^2$  (C)  $\text{sp}^3\text{d}^3$  (D) None of these
44. The structure and hybridization of  $\text{Si}(\text{CH}_3)_4$  is  
 (A) Bent, sp (B) Trigonal,  $\text{sp}^2$  (C) Octahedral,  $\text{sp}^3\text{d}$  (D) Tetrahedral,  $\text{sp}^3$
45. Which compound has bond angle of nearly to  $90^\circ$   
 (A)  $\text{H}_2\text{O}$  (B)  $\text{H}_2\text{S}$  (C)  $\text{NH}_3$  (D)  $\text{BF}_3$
46. True order of bond angle is  
 (A)  $\text{H}_2\text{O} > \text{H}_2\text{S} > \text{H}_2\text{Se} > \text{H}_2\text{Te}$  (B)  $\text{H}_2\text{Te} > \text{H}_2\text{Se} > \text{H}_2\text{S} > \text{H}_2\text{O}$   
 (C)  $\text{H}_2\text{S} > \text{H}_2\text{O} > \text{H}_2\text{Se} > \text{H}_2\text{Te}$  (D)  $\text{H}_2\text{O} > \text{H}_2\text{S} > \text{H}_2\text{Te} > \text{H}_2\text{Se}$
47. During the complete combustion of methane  $\text{CH}_4$ , what change in hybridization does the carbon atom undergo?  
 (A)  $\text{sp}^3$  to sp (B)  $\text{sp}^3$  to  $\text{sp}^2$  (C)  $\text{sp}^2$  to sp (D)  $\text{sp}^2$  to  $\text{sp}^3$
48. The structure of  $\text{XeF}_2$  involves hybridization of the type:  
 (A)  $\text{sp}^3$  (B)  $\text{dsp}^2$  (C)  $\text{sp}^3\text{d}$  (D)  $\text{sp}^3\text{d}^2$
49. The shapes of  $\text{PCl}_4^+$ ,  $\text{PCl}_6^-$  and  $\text{AsCl}_5$  are respectively:  
 (A) Square planar, tetrahedral and see-saw (B) tetrahedral, octahedral and trigonal bipyramidal  
 (C) tetrahedral, square planar and pentagonal bipyramidal

- (D) trigonal bipyramidal, tetrahedral and square pyramidal
50. The shape of  $\text{IF}_5$  and  $\text{IF}_7$  are respectively :  
 (A) Tetragonal pyramidal and pentagonal bi-pyramidal  
 (B) Octahedral and pyramidal (C) trigonal bipyramidal and square antiprismatic  
 (D) Distorted square planar and distorted octahedral
51. Molecular shapes of  $\text{SF}_4$ ,  $\text{CF}_4$  and  $\text{XeF}_4$  are:  
 (A) the same, with 2,0 and 1 lone pair of electrons respectively on central atom  
 (B) the same, with 1,1 and 1 lone pair of electrons respectively on central atom  
 (C) different with 0,1 and 2 lone pair of electrons respectively on central atom  
 (D) different with 1,0 and 2 lone pair of electrons respectively on central atom
52. The shape of a molecule which has 3 bond pairs and one lone pair is :  
 (A) Octahedral (B) Pyramidal (C) Triangular planar (D) Tetrahedral
53. Which molecule is linear  
 (A)  $\text{NO}_2$  (B)  $\text{ClO}_2$  (C)  $\text{CO}_2$  (D)  $\text{H}_2\text{S}$
54. Which of the following molecules has trigonal planar geometry  
 (A)  $\text{IF}_3$  (B)  $\text{PCl}_3$  (C)  $\text{NH}_3$  (D)  $\text{BF}_3$
55. Compound formed by  $\text{sp}^3\text{d}$  hybridization will have structure  
 (A) Planar (B) Pyramidal (C) Angular (D) Trigonal bipyramidal
56.  $\text{XeF}_6$  is  
 (A) Octahedral (B) Distorted octahedral (C) Planar (D) Tetrahedral
57.  $\text{H}_2\text{O}$  is  
 (A) A liner triatomic molecule (B) A bent(angular) triatomic molecule  
 (C) Both of these (D) None of these
58. In  $\text{ICl}_4^-$ , the shape is square planar. The number of bond pair – lone pair repulsion at  $90^\circ$  are :  
 (A) 6 (B) 8 (C) 12 (D) 4
59. Among the following species, identify the isostructural pairs :  $\text{NF}_3$ ,  $\text{NO}_3^-$ ,  $\text{BF}_3$ ,  $\text{H}_3\text{O}^+$ ,  $\text{HN}_3$   
 (A)  $[\text{NF}_3, \text{NO}_3^-]$  and  $[\text{BF}_3, \text{H}_3\text{O}^+]$  (B)  $[\text{NF}_3, \text{HN}_3]$  and  $[\text{NO}_3^-, \text{BF}_3]$   
 (C)  $[\text{NF}_3, \text{H}_3\text{O}^+]$  and  $[\text{NO}_3^-, \text{BF}_3]$  (D)  $[\text{NF}_3, \text{H}_3\text{O}^+]$  and  $[\text{HN}_3, \text{BF}_3]$
60. The structure of  $\text{H}_2\text{O}_2$  is  
 (A) Planar (B) Non-Planar (C) Spherical (D) Linear
61. The smallest bond angle is found in  
 (A)  $\text{IF}_7$  (B)  $\text{CH}_4$  (C)  $\text{BeF}_2$  (D)  $\text{BF}_3$
62. Which of the following pairs is (are) isostructural?  
 (A)  $\text{SF}_4$  and  $\text{SiF}_4$  (B)  $\text{SF}_6$  and  $\text{SiF}_6^{2-}$  (C)  $\text{SiF}_6^{2-}$  and  $\text{SeF}_6^{2-}$  (D)  $\text{XeO}_6^{4-}$  and  $\text{TeF}_6^{2-}$
63. Which has maximum dipole moment?  

64. Which of the following has the least dipole moment  
 (A)  $\text{CH}_4$  (B)  $\text{CO}$  (C)  $\text{SO}_2$  (D)  $\text{NH}_3$
65. Which molecule has the largest dipole moment

- (A) HCl                      (B) HI                      (C) HBr                      (D) HF
66. Which bond angle  $\theta$  would result in the maximum dipole moment for the triatomic molecule YXY  
 (A)  $\theta = 90^\circ$                       (B)  $\theta = 120^\circ$                       (C)  $\theta = 150^\circ$                       (D)  $\theta = 180^\circ$
67. Which of the following would have a permanent dipole moment  
 (A)  $\text{BF}_3$                       (B)  $\text{SiF}_4$                       (C)  $\text{SF}_4$                       (D)  $\text{XeF}_4$
68. Zero dipole moment is present in  
 (A)  $\text{NH}_3$     (B)  $\text{H}_2\text{O}$   
 (C) cis 1,2 – dichloroethene                      (D) trans 1,2 –dichloroethene
69. Which molecule does not show zero dipole moment  
 (A)  $\text{BF}_3$                       (B)  $\text{NH}_3$                       (C)  $\text{CCl}_4$                       (D)  $\text{CH}_4$
70. The maximum possible number of hydrogen bonds in which a  $\text{H}_2\text{O}$  molecule can participate-  
 (A) 4                      (B) 3                      (C) 2                      (D) 6
71. The volatility of HF is low because of :  
 (A) its low polarizability  
 (B) the weak dispersion interaction between the molecules  
 (C) its small molecular mass                      (D) its strong hydrogen bonding
72. Two ice cubes are pressed over each other and unite to form one cube. Which force is responsible for holding them together :  
 (A) van der Waal's forces                      (B) Covalent attraction  
 (C) Hydrogen bond formation                      (D) Dipole-dipole attraction
73. Which of the following molecules are expected to exhibit intermolecular H- bonding  
 I. Acetic acid                      II. o-nitrophenol                      III. m-nitrophenol                      IV. o-boric acid  
 (A) I, II, III                      (B) I, II, IV                      (C) I, III, IV                      (D) II, III, IV
74. Which one of the following does not have intermolecular H-bonding?  
 (A)  $\text{H}_2\text{O}$                       (B) o-nitro phenol                      (C) HF                      (D)  $\text{CH}_3\text{COOH}$
75. Amongst  $\text{H}_2\text{O}$ ,  $\text{H}_2\text{S}$ ,  $\text{H}_2\text{Se}$  and  $\text{H}_2\text{Te}$ , the one with the highest boiling point is  
 (A)  $\text{H}_2\text{O}$  because of hydrogen bonding                      (B)  $\text{H}_2\text{Te}$  because of higher molecular weight  
 (C)  $\text{H}_2\text{S}$  because of hydrogen bonding                      (D)  $\text{H}_2\text{Se}$  because of lower molecular weight
76. Bond order of  $\text{Be}_2$  is :  
 (A) 1                      (B) 2                      (C) 3                      (D) 0
77. During the formation of a molecular orbital from atomic orbitals, probability of electron density is :  
 (A) minimum in the nodal plane                      (B) maximum in the nodal plane  
 (C) zero in the nodal plane                      (D) zero on the surface of the lobe
78. Which of the following has fractional bond order :  
 (A)  $\text{O}_2^{2+}$                       (B)  $\text{O}_2^{2-}$                       (C)  $\text{F}_2^{2-}$                       (D)  $\text{H}_2^-$
79. In  $\text{N}_2$  molecule, the atoms are bonded by  
 (A) One  $\sigma$ , Two  $\pi$                       (B) One  $\sigma$ , One  $\pi$                       (C) Two  $\sigma$ , One  $\pi$                       (D) Three  $\sigma$  bonds
80. Which of the following is true?  
 (A) Bond order  $\propto \frac{1}{\text{bond length}} \propto \text{bond energy}$   
 (B) Bond order  $\propto \text{bond length} \propto \frac{1}{\text{bond energy}}$                       (C) Bond order  $\propto \frac{1}{\text{bond length}} \propto \frac{1}{\text{bond energy}}$

- (D) Bond order  $\propto$  bond length  $\propto$  bond energy
81. Given the species :  $\text{N}_2$  ,  $\text{CO}$ ,  $\text{CN}^-$  and  $\text{NO}^+$ . Which of the following statements are true for the following  
 (A) All species are paramagnetic (B) The species are isoelectronic  
 (C) All the species have dipole moment (D) All the species are linear
  82. When  $\text{N}_2$  goes to  $\text{N}_2^+$ , the N-N bond distance.... And when  $\text{O}_2$  goes to  $\text{O}_2^+$ , the O-O bond distance...  
 (A) Decrease, increase (B) Increase, decrease (C) Increase, increase (D) None of these
  83. Which of the following species is the least stable  
 (A)  $\text{O}_2$  (B)  $\text{O}_2^{2-}$  (C)  $\text{O}_2^+$  (D)  $\text{O}_2^{1-}$
  84. The bond order is maximum in  
 (A)  $\text{O}_2$  (B)  $\text{O}_2^{-1}$  (C)  $\text{O}_2^{+1}$  (D)  $\text{O}_2^{2-}$
  85. The bond order in  $\text{N}_2$  molecule is  
 (A) 1 (B) 2 (C) 3 (D) 4
  86. Which one is paramagnetic and has the bond order  $1/2$   
 (A)  $\text{O}_2$  (B)  $\text{N}_2$  (C)  $\text{F}_2$  (D)  $\text{H}_2^+$
  87. Which of the following species contain coordinate bond :  
 (A)  $\text{AlCl}_3$  (B)  $\text{CO}$  (C)  $[\text{Fe}(\text{CN})_6]^{4-}$  (D)  $\text{N}_3^-$
  88. A  $\pi$ - bond may form between two  $p_x$  orbitals containing one unpaired electron each when they approach each other appropriately along :  
 (A) x- axis (B) y-axis (C) z- axis (D) any direction
  89. The octet rule is not obeyed in :  
 (A)  $\text{CO}_2$  (B)  $\text{BCl}_3$  (C)  $\text{PCl}_5$  (D)  $\text{SiF}_4$
  90. Which of the following species is(are) isostructural with  $\text{XeF}_4$  ?  
 (A)  $\text{ICl}_4^-$  (B)  $\text{I}_5^-$  (C)  $\text{BrF}_4^-$  (D)  $\text{XeO}_4$
  91. Which one of the following compounds has bond angle of nearly  $90^\circ$ ?  
 (A)  $\text{NH}_3$  (B)  $\text{H}_2\text{S}$  (C)  $\text{H}_2\text{O}$  (D)  $\text{SF}_6$
  92. Shape of  $\text{NH}_3$  is very similar to :  
 (A)  $\text{SeO}_3^{2-}$  (B)  $\text{CH}_3^-$  (C)  $\text{BH}_3$  (D)  $\text{CH}_3^+$
  93. Which of the following have same shape as  $\text{NH}_2^+$ ?  
 (A)  $\text{CO}_2$  (B)  $\text{SnCl}_2$  (C)  $\text{SO}_2$  (D)  $\text{BeCl}_2$
  94. Which of the following species are linear?  
 (A)  $\text{ICl}_2^-$  (B)  $\text{I}_3^-$  (C)  $\text{N}_3^-$  (D)  $\text{ClO}_2$
  95. Which of the following is (are) linear?  
 (A)  $\text{I}_3^-$  (B)  $\text{I}_3^+$  (C)  $\text{PbCl}_2$  (D)  $\text{XeF}_2$
  96. Which of the following compounds possesses zero dipole moment?  
 (A) Water (B) Benzene (C) Carbon tetrachloride (D) Boron trifluoride
  97. Which of the following have identical bond order?  
 (A)  $\text{O}_2^{2+}$  (B)  $\text{NO}^+$  (C)  $\text{CN}^-$  (D)  $\text{CN}^+$
  98. Which of the following has unpaired electron(s)  
 (A)  $\text{O}_2^{2+}$  (B)  $\text{O}_2^-$  (C)  $\text{NO}$  (D)  $\text{H}_2^+$
  99. Which of the following species have a bond order of 3?  
 (A)  $\text{CO}$  (B)  $\text{CN}^-$  (C)  $\text{NO}^+$  (D)  $\text{O}_2^+$

100. Which of the following is correct ?  
 (A) During  $\text{N}_2^+$  formation, one electron is removed from the bonding molecular orbitals  
 (B) During  $\text{O}_2^+$  formation, one electron is removed from the antibonding molecular orbitals  
 (C) During  $\text{O}_2^-$  formation, one electron is added to the bonding molecular orbitals  
 (D) During  $\text{CN}^-$  formation, one electron is added to the bonding molecular orbitals
101. Which of the following are diamagnetic?  
 (A)  $\text{C}_2$  (B)  $\text{O}_2^{2-}$  (C)  $\text{Li}_2$  (D)  $\text{N}_2^+$

**Answer Key**

- |         |         |         |          |          |         |         |         |
|---------|---------|---------|----------|----------|---------|---------|---------|
| 1. A    | 2. C    | 3. D    | 4. D     | 5. D     | 6. A    | 7. B    | 8. C    |
| 9. A    | 10. D   | 11. A   | 12. C    | 13. C    | 14. D   | 15. A   | 16. B   |
| 17. B   | 18. C   | 19. D   | 20. C    | 21. A    | 22. D   | 23. D   | 24. A   |
| 25. B   | 26. A   | 27. D   | 28. A    | 29. A    | 30. B   | 31. B   | 32. C   |
| 33. B   | 34. A   | 35. C   | 36. A    | 37. B    | 38. A   | 39. A   | 40. B   |
| 41. D   | 42. C   | 43. B   | 44. D    | 45. B    | 46. A   | 47. A   | 48. C   |
| 49. B   | 50. A   | 51. D   | 52. B    | 53. C    | 54. D   | 55. D   | 56. B   |
| 57. B   | 58. B   | 59. C   | 60. B    | 61. A    | 62. B   | 63. A   | 64. A   |
| 65. D   | 66. A   | 67. C   | 68. D    | 69. B    | 70. A   | 71. D   | 72. C   |
| 73. C   | 74. B   | 75. A   | 76. D    | 77. C    | 78. D   | 79. A   | 80. A   |
| 81. B   | 82. B   | 83. B   | 84. C    | 85. C    | 86. D   | 87. ABC | 88. BC  |
| 89. BC  | 90. AC  | 91. BD  | 92. AB   | 93. BC   | 94. ABC | 95. AD  | 96. BCD |
| 97. ABC | 98. BCD | 99. ABC | 100. ABD | 101. ABC |         |         |         |