Date Planned : __ / __ / __	Daily Tutorial Sheet - 3	Expected Duration : 90 Min
Actual Date of Attempt : __ / __ / __	JEE Main (Archive)	Exact Duration :_____

31. In which of the following pairs the two species are not isostructural? **(2012)**

(A) CO_3^{2-} and NO_3^- **(B)** PCl_4^+ and $SiCl_4$

(C) PF_4 and BrF_5 **(D)** AlF_6^{3-} and SF_6

32. Stability of the species Li_2, Li_2^- and Li_2^+ increases in the order of: **(2013)**

(A) $Li_2 < Li_2^+ < Li_2^-$ **(B)** $Li_2^- < Li_2^+ < Li_2$ **(C)** $Li_2 < Li_2^- < Li_2^+$ **(D)** $Li_2^- < Li_2 < Li_2^+$

33. In which of the following pairs of molecules/ions both the species are not likely to exist? **(2013)**

(A) H_2^+, He_2^{2-} **(B)** H_2^-, He_2^{2-} **(C)** H_2^{2+}, He_2 **(D)** H_2^-, He_2^{2+}

34. The correct statement for the molecule, CsI_3 is: **(2014)**

(A) it is a covalent molecule **(B)** it contains Cs^+ and I_3^- ions

(C) it contains Cs^{3+} and I^- ions **(D)** it contains Cs^+, I^- and lattice I_2 molecule

35. The intermolecular interaction that is dependent on the inverse cube of distance between the molecules is : **(2015)**

(A) ion-ion interaction **(B)** ion-dipole interaction

(C) London force **(D)** hydrogen bond

36. The geometry of $XeOF_4$ by VSEPR theory is : **(2015)**

(A) trigonal bipyramidal **(B)** square pyramidal

(C) octahedral **(D)** pentagonal planar

37. Molecule AB has a bond length of 1.617 Å and a dipole moment of 0.38 D. The fractional charge on each atom (absolute magnitude) is : ($e_0 = 4.802 \times 10^{-10}$ esu) **(2015)**

(A) 0 **(B)** 0.05 **(C)** 0.5 **(D)** 1.0

38. The species in which the N atom is in a state of sp hybridization is : **(2016)**

(A) NO_2^- **(B)** NO_3^- **(C)** NO_2 **(D)** NO_2^+

39. After understanding the assertion and reason, choose the correct option. **(2016)**

Assertion : In the bonding molecular orbital (MO) of H_2, electron density is increased between the nuclei.

Reason : The bonding MO is $\Psi_A + \Psi_{B'}$ which shows destructive interference of the combining electron waves.

(A) Assertion and reason are correct, and reason is the correct explanation for the assertion.

(B) Assertion and reason are correct, but reason is not the correct explanation for the assertion.

(C) Assertion is correct, reason is incorrect.

(D) Assertion is incorrect, reason is correct.

40. Choose the incorrect formula out of the four compound for an element X below : **(2016)**

(A) X_2Cl_3 **(B)** X_2O_3 **(C)** $X_2(SO_4)_3$ **(D)** XPO_4

41. The group of molecules having identical shape is: **(2016)**

(A) SF_4, XeF_4, CCl_4 **(B)** ClF_3, $XeOF_2$, XeF_3^+

(C) BF_3, PCl_3, XeO_3 **(D)** PCl_5, IF_5, XeO_2F_2

42. The bond angle $H-X-H$ is the greatest in the compound: **(2016)**

(A) CH_4 **(B)** NH_3 **(C)** H_2O **(D)** PH_3

43. Which of the following species is not paramagnetic? **(2017)**

(A) B_2 **(B)** NO **(C)** CO **(D)** O_2

44. The group having isoelectronic species is: **(2017)**

(A) O^-, F^-, Na^+, Mg^{2+} **(B)** $O^{2-}, F^-, Na^+, Mg^{2+}$

(C) O^-, F^-, Na, Mg^+ **(D)** O^{2-}, F^-, Na, Mg^{2+}

45. Which of the following is paramagnetic? **(2017)**

(A) NO^+ **(B)** CO **(C)** O_2^{2-} **(D)** B_2