Date Planned : __ / __ / __	Daily Tutorial Sheet - 5	Expected Duration : 90 Min
Actual Date of Attempt : __ / __ / __	Level - 1	Exact Duration :_____

61. Which has maximum number of lone-pairs of electrons on the central atom?

(A) XeF_2 **(B)** H_3O^+ **(C)** XeF_4 **(D)** XeF_6

62. The nitrogen atom in NH_3, NH_2^- and NH_4^+ are all surrounded by eight electrons. When these species are arranged in increasing order of $H-N-H$ bond angle, correct order is:

(A) NH_3, NH_2^-, NH_4^+ **(B)** NH_4^+, NH_2^-, NH_3

(C) NH_3, NH_4^+, NH_2^- **(D)** NH_2^-, NH_3, NH_4^+

63. Which one of the following has the highest boiling point?

(A) AsH_3 **(B)** SbH_3 **(C)** PH_3 **(D)** NH_3

64. The correct order of dipole moments of HF, H_2S and H_2O is:

(A) $HF < H_2S < H_2O$ **(B)** $HF < H_2S > H_2O$

(C) $HF > H_2S > H_2O$ **(D)** $HF > H_2O > H_2S$

65. The correct order of increasing bond length of $C-H$(I), $C-O$ (II), $C-C$(III) and $C=C$ (IV) is:

(A) I < II < III, IV **(B)** I < IV < II < III

(C) IV < III < II < I **(D)** III < IV < II < I

66. Which of the following compound or ion is planar?

(A) SF_5^- **(B)** SF_4 **(C)** SOF_4 **(D)** SF_2

67. PCl_5 has a shape of trigonal bipyramid whereas IF_5 has the shape of a square pyramid, It is due to:

(A) Presence of unshared electron pair on I which is oriented so as to minimize repulsion while P in PCl_5 has no unshared pair

(B) Octet of P is complete while that of I is incomplete

(C) P and I are of different groups

(D) F and Cl have different extent of repulsion

68. In diborane (B_2H_6), the bond formed between B and B is called :

(A) sigma bond **(B)** 2-centre 2-electron bond

(C) banana bond **(D)** coordinate bond

69. Which of the following pairs have identical values of bond order?

(A) N_2 and O_2^{2-} **(B)** NO^+ and N_2 **(C)** CN^- and O_2^- **(D)** CO and O_2

70. In Be_2 the bond order is

(A) one **(B)** zero **(C)** two **(D)** one- half

71. The number of anti bonding electrons in N_2 is

(A) 4 **(B)** 10 **(C)** 12 **(D)** 14

72. A simplified application of MO theory to the hypothetical molecule OF would give its bond order as :

(A) 2.0 **(B)** 1.5 **(C)** 1.0 **(D)** 0.5

73. Which of the following pairs have identical values of bond order?

(A) B_2 and O_2^{2-} **(B)** NO^+ and N_2 **(C)** C_2 and O_2 **(D)** All of these

74. Paramagnetism is observed in :

(A) N_2 **(B)** O_2 **(C)** He **(D)** O_2^{2-}

75. N_2 and O_2 are converted into mono anions, N_2^- and O_2^- respectively. Which of the following is wrong?

(A) In N_2^-, the $N-N$ bond weakens **(B)** In O_2^-, the $O-O$ bond length increases

(C) In O_2^-, the bond order decreases **(D)** N_2^- becomes diamagnetic