

J.E.E./A.I.P.M.T.Foundation - XI Chemistry Worksheet

Time: 30 min Ch#4 : Chemical Bonding and Molecular Structure -01 Full Marks: 20

Instructions:

1. All questions are compulsory.
2. Please give the explanation for the answer where applicable.

Q1 - Write the configuration of following species and find if they are paramagnetic or diamagnetic.

- (i)  $N_2$
- (ii)  $B_2$

(3 Marks)

Q2 - Find out which of the following molecules does not exist -

- (i)  $Be_2$
- (ii)  $C_2$

(2 Marks)

Q3 - What is resonance and resonating structures?

(3 Marks)

Q4 - Explain why  $CCl_4$  has a zero dipole moment although C-Cl bonds are polar.

(2 Marks)

Q5 - Name and draw structure of two compounds which can form intra molecular hydrogen bonding.

(2 Marks)

Q6 - Find bond order of  $O_2$ ,  $O_2^{2-}$ ,  $O_2^{2+}$  and arrange these species in decreasing order of bond lengths.

(5 Marks)

Q7 - What type of orbitals can overlap to form a covalent bond?

(1 Mark)

Q8 - Name the electrons which take part in bond formation.

(1 Mark)

Q9 - Find out the compound in the following in which does not obey the octet rule.  $SF_2$ ,  $SF_6$ ,  $SO_2$ ,  $SF_4$ .

(1 Mark)