

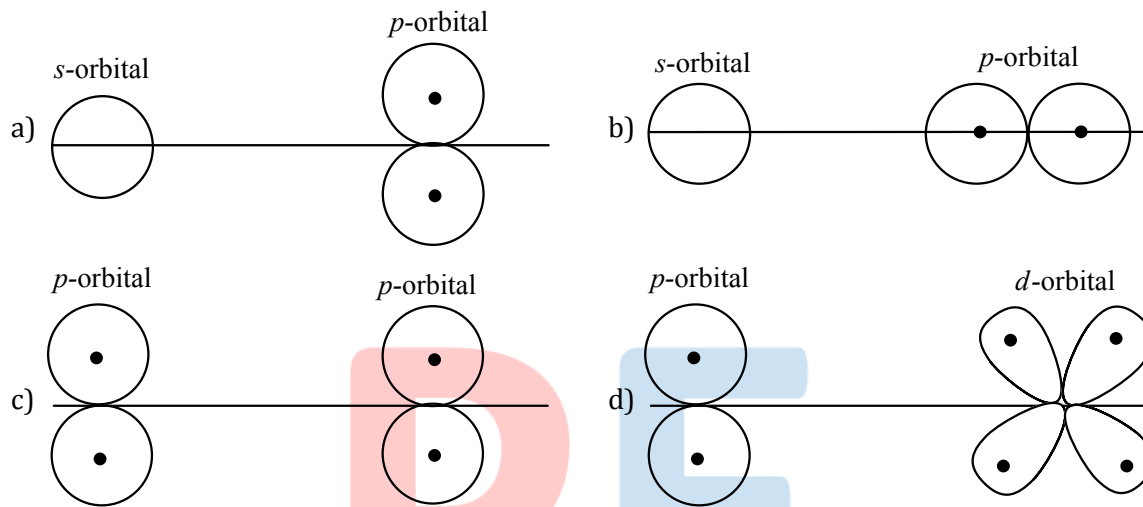
Class : XIth
Date :


Subject : CHEMISTRY
DPP No. : 4

Topic :- Chemical Bonding and Molecular Structure

- Which of the following is most stable?
a) Pb^{2+} b) Ge^{2+} c) Si^{2+} d) Sn^{2+}
- In which of the following compound sp^2 hybridisation is absent?
a) $\text{CH}_2 = \text{CH} - \text{CH} = \text{CH}_2$ b) $\text{CH} \equiv \text{C} - \text{CH}_2 - \text{CH}_3$
c) $\text{CH}_2 - \text{CH} = \text{CH}_2$ d) $\text{CH}_2 = \text{CH} - \text{CH}_2 - \text{CH}_3$
- Which one of the following pairs of species has the same bond order:
a) NO^+ and CN^+ b) CN^- and NO^+ c) CN^- and CN^+ d) O_2^- and CN^-
- Which of the following characteristics regarding halogens is not correct?
a) Ionization energy decreases with increase in atomic number.
b) Electronegativity decreases with increase in atomic number.
c) Electron affinity decreases with increase in atomic number.
d) Enthalpy of fusion increases with increase in atomic number.
- The number of S - S bonds in sulphur trioxide is
a) Three b) Two c) One d) Zero
- The low density of ice compared to water is due to
a) Induced dipole - induced dipole interactions
b) Dipole - induced dipole interaction
c) Hydrogen bonding interactions
d) Dipole - dipole interaction
- Consider the following molecules or ions
(i) H_2O (ii) NH_4^+ (iii) SO_4^{2-}
(iv) ClO_4^- (v) NH_3
 sp^3 hybridisation is involved in the formation of
a) (i), (ii) (v) only b) (i), (ii) only
c) (ii) only d) (i), (ii), (iii), (iv) and (v)

8. Which of the following compounds has dipole moment approximately equal to that of chlorobenzene?
- o*-dichlorobenzene
 - m*-dichlorobenzene
 - p*-dichlorobenzene
 - p*-chloronitrobenzene
9. Which of the following overlaps leads to bonding?



10. Which of the following is correct?
- The number of electrons present in the valence shell of S in SF_6 is 12.
 - The rates of ionic reactions are very low.
 - According to VSEPR theory, SnCl_2 is a linear molecule.
 - The correct order of ability to form ionic compounds among Na^+ , Mg^{2+} and Al^{3+} is $\text{Al}^{3+} > \text{Mg}^{2+} > \text{Na}^+$.
11. The number of sigma and pi bonds in peroxodisulphuric acid are respectively
- 9 and 4
 - 11 and 4
 - 4 and 8
 - 4 and 9
12. Which is not a paramagnetic species?
- O_2
 - O_2^+
 - O_2^-
 - O_2^{2-}
13. In piperidine , N atom has hybridization:
- sp
 - sp^2
 - sp^3
 - dsp^2
14. Electron deficient species are known as:
- Lewis acids
 - Hydrophilic
 - Nucleophiles
 - Lewis bases

15. The molecule having three folds of axis of symmetry is:
a) NH_3 b) PCl_5 c) SO_2 d) CO_2
16. The structure of ICl_2^- is:
a) Trigonal
b) Octahedral
c) Square planar
d) Distorted trigonal bipyramid
17. Among the following the molecule with the highest dipole moment is
a) CH_3Cl b) CH_2Cl_2 c) CHCl_3 d) CCl_4
18. Which of the following is not isostructural with SiCl_4 ?
a) PO_4^{3-} b) NH_4^+ c) SCl_4 d) SO_4^{2-}
19. A molecule which cannot exist theoretically is:
a) SF_4 b) OF_2 c) OF_4 d) O_2F_2
20. An atom X has three valence electrons and atom Y has six valence electrons. The compound formed between them will have the formula
a) X_2Y_6 b) XY_2 c) X_2Y_3 d) X_3Y_2