

Class : XIth
Date :

Subject : CHEMISTRY
DPP No. : 3

Topic :- Chemical Bonding and Molecular Structure

- Which one is polar molecule among the following?
a) CH₄ b) CCl₄ c) CO₂ d) H₂O
- Shape of molecules is decided by:
a) Sigma bond
b) π-bond
c) Both sigma and π-bonds
d) Neither sigma nor π-bonds
- The shape of carbon dioxide is
a) Pyramidal b) Tetrahedral c) Planar d) Linear
- The correct ionic radii order is:
a) N³⁻ > O²⁻ > F⁻ > Na⁺ > Mg²⁺ > Al³⁺
b) N³⁻ > Na⁺ > O²⁻ > F⁻ > Mg²⁺ > Al³⁺
c) Na⁺ > O²⁻ > N³⁻ > F⁻ > Mg²⁺ > Al³⁺
d) O²⁻ > F⁻ > Na⁺ > N³⁻ > Mg²⁺ > Al³⁺
- Which is not linear?
a) CO₂ b) HCN c) C₂H₂ d) H₂O
- Hybridisation of oxygen in diethyl ether is
a) sp b) sp² c) sp³ d) sp³d
- What is the effect of more electronegative atom on the strength of ionic bond?
a) Increases b) Decreases c) Remains the same d) None of these
- Which of the following two are isostructural?
a) XeF₂, IF₂⁻ b) NH₃, BF₃ c) CO₃²⁻, SO₃²⁻ d) PCl₅, ICl₅

9. NF_3 is:
a) Non-polar compound
b) Electrovalent compound
c) Having low value of dipole moment than NH_3
d) Having more dipole moment than NH_3
10. Molecular size of ICl and Br_2 is nearly same, but boiling point of ICl is about 40°C higher than Br_2 . This might be due to:
a) $\text{I}-\text{Cl}$ bond is stronger than $\text{Br}-\text{Br}$ bond
b) Ionisation energy of $\text{I} <$ ionisation energy of Br
c) ICl is polar whereas Br_2 is non-polar
d) The size of $\text{I} >$ size of Br
11. Which molecule is linear?
a) H_2S b) NO_2 c) ClO_2 d) CO_2
12. Which of the following shows minimum melting point?
a) Naphthalene b) Diamond c) NaCl d) Mn
13. Which of the following does not have a lone pair on the central atom?
a) NH_3 b) PH_3 c) BF_3 d) PCl_3
14. Molecular orbital theory was given by
a) Kossel b) Mosley c) Mulliken d) Werner
15. NH_3 has a net dipole moment, but boron trifluoride (BF_3) has zero dipole moment, because:
a) B is less electronegative than N
b) F is more electronegative than H
c) BF_3 is pyramidal while NH_3 is planar
d) NH_3 is pyramidal while BF_3 is trigonal planar
16. Proton plays an important role in...bonding.
a) Electrovalent b) Hydrogen c) Covalent d) Coordinate
17. Which represents a collection of isoelectronic species?
a) $\text{Be}, \text{Al}^{3+}, \text{Cl}^-$ b) $\text{Ca}^{2+}, \text{Cs}^+, \text{Br}$ c) $\text{Na}^+, \text{Ca}^{2+}, \text{Mg}^{2+}$ d) $\text{N}^{3-}, \text{F}^-, \text{Na}^+$
18. An electrovalent compound does not exhibit space isomerism due to:
a) Presence of ions
b) High melting point
c) Strong electrostatic forces between constituent ions
d) Non-directional nature of electrovalent bond

19. In which molecule Sulphur atom is not sp^3 -hybridized?
a) SO_4^{2-} b) SF_4 c) SF_2 d) None of these
20. In which one of the following species, the central atom has the type of hybridization which is not the same as that present in other three?
a) SF_4 b) I_3^- c) $SbCl_5^{2-}$ d) PCl_5

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