

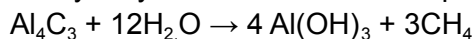
P Block Mcq Chemistry Questions with Solutions

Q1. What does aluminium carbide produce on hydrolysis?

- (a) C_2H_6
- (b) C_2H_4
- (c) C_2H_2
- (d) CH_4

Answer: (d)

On hydrolysis aluminium carbide produces methane.



Q2. What is the correct order of electron affinity among O, F and Cl?

- (a) $O < Cl < F$
- (b) $O < F < Cl$
- (c) $F < O < Cl$
- (d) $Cl < O < F$

Answer: (b)

Chlorine has the highest electron affinity in the periodic table of elements.

Q3. Arrange the following group 15 trifluorides in the correct order of melting points.

- (a) $PF_3 < AsF_3 < SbF_3 < BiF_3$
- (b) $BiF_3 < AsF_3 < PF_3 < SbF_3$
- (c) $BiF_3 < SbF_3 < PF_3 < AsF_3$
- (d) $PF_3 < SbF_3 < AsF_3 < BiF_3$

Answer: (a)

The correct order of melting point is $PF_3 < AsF_3 < SbF_3 < BiF_3$

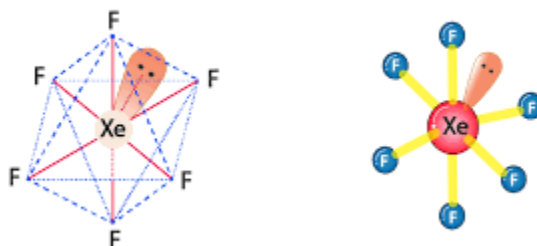
Q4. Among the compounds below, which compounds have non-zero dipole moment?

- (a) XeF_2
- (b) XeF_6
- (c) XeF_4
- (d) None of the above

Answer: (b)

XeF_6 has distorted octahedral geometry. Due to the presence of lone pair it has non-zero dipole moment.

HYBRIDIZATION OF XeF_6



Q5. Arrange the following group 14 hydrides in the correct order of their boiling points.

- (a) $\text{SnH}_4 > \text{GeH}_4 > \text{SiH}_4 > \text{CH}_4$
- (b) $\text{SnH}_4 > \text{SiH}_4 > \text{GeH}_4 > \text{CH}_4$
- (c) $\text{CH}_4 > \text{GeH}_4 > \text{SiH}_4 > \text{SnH}_4$
- (d) $\text{SnH}_4 > \text{GeH}_4 > \text{CH}_4 > \text{SiH}_4$

Answer: (a)

Down the group, molecular mass increases. Therefore boiling point also increases.

Q6. A yellow precipitate is formed upon the addition of aqueous silver nitrate to a solution of?

- (a) Orthophosphate
- (b) Metaphosphate
- (c) Pyrophosphate
- (d) Phosphite

Answer: (a)

Q7. What is the coordination number of aluminium in liquid AlCl_3 and crystalline AlCl_3 ?

- (a) 6 and 6
- (b) 4 and 4
- (c) 3 and 6
- (d) 4 and 6

Answer: (d)

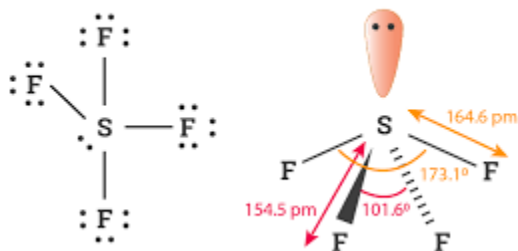
Q8. The species which has see-saw shape is?

- (a) XeF_4
- (b) SF_4
- (c) ClF_4
- (d) ClF_4^-

Answer: (b)

SF_4 has see-saw shape and trigonal bipyramidal geometry.

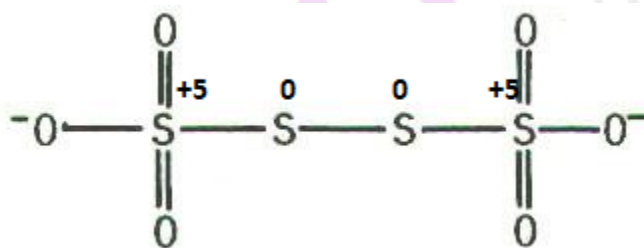
Hybridization of SF_4



Q9. How many S-S bonds are there in tetrathionate ion?

- (a) 2
- (b) 3
- (c) 4
- (d) 5

Answer: (b)



Q10. Arrange the various states of CO_2 in correct order of their entropy.

- (a) $\text{CO}_2(\text{g}) > \text{CO}_2(\text{l}) > \text{CO}_2(\text{s})$
- (b) $\text{CO}_2(\text{l}) > \text{CO}_2(\text{s}) > \text{CO}_2(\text{g})$
- (c) $\text{CO}_2(\text{g}) > \text{CO}_2(\text{s}) > \text{CO}_2(\text{l})$
- (d) $\text{CO}_2(\text{s}) > \text{CO}_2(\text{l}) > \text{CO}_2(\text{g})$

Answer: (a)

Entropy is nothing but randomness. Randomness is maximum in gas, then in liquid and then in solid. Therefore entropy is maximum in the gaseous state of CO_2 .

Q11. Which compound has the lowest degree of ionic character?

- (a) MgCl_2
- (b) NaCl
- (c) AlCl_3
- (d) CaCl_2

Answer: (c)

AlCl_3 is a covalent compound.

Q12. Which among these has the highest bond angle?

- (a) NH_3
- (b) NF_3
- (c) BF_3
- (d) PH_3

Answer: (c)

BF_3 has a bond angle of 120° . NH_3 has a bond angle of 107° NF_3 has a bond angle of 102° and PH_3 has a bond angle of 93.5° .

Q13. Which among the following group 16 elements has the highest bond angle?

- (a) H_2O
- (b) H_2S
- (c) H_2Se
- (d) H_2Te

Answer: (a)

H_2O has a bond angle of 104.5° whereas H_2S , H_2Se , H_2Te have bond angle of nearly 90° .

Q14. What is the bond order of the Be_2 molecule?

- (a) 0
- (b) 1
- (c) 2
- (d) 3

Answer: (a)

Q15. What is the bond order of C_2 molecule?

- (a) 1
- (b) 2
- (c) 3
- (d) 4

Answer: (b)

Practice Questions on P Block Element Mcq

Q1. What is the bond angle of CO_3^{2-} ?

- (a) 120°
- (b) 180°
- (c) 109.5°
- (d) 90°

Answer: (a)

CO_3^{2-} is trigonal planar and has a bond angle of 120° .

Q2. Which species is responsible for the super acidity of the SbF_5 - HSO_3F system?

- (a) SbF_5
- (b) HF
- (c) HSO_3F
- (d) $\text{H}_2\text{SO}_3\text{F}^+$

Answer: (d)

$\text{SbF}_5 + 2\text{HSO}_3\text{F} \rightarrow \text{FSO}_3\text{SbF}_5^- + \text{H}_2\text{SO}_3\text{F}^+$. Thus $\text{H}_2\text{SO}_3\text{F}^+$ is responsible for the super-acidity of the SbF_5 - HSO_3F system.

Q3. The strength of intermolecular forces follows the order.

- (a) $\text{NH}_4\text{Cl} > \text{HF} > \text{HCl} > \text{Ar}$
- (b) $\text{NH}_4\text{Cl} > \text{HF} > \text{Ar} > \text{HCl}$
- (c) $\text{NH}_4\text{Cl} > \text{HCl} > \text{HF} > \text{Ar}$
- (d) $\text{NH}_4\text{Cl} > \text{Ar} > \text{HCl} > \text{HF}$

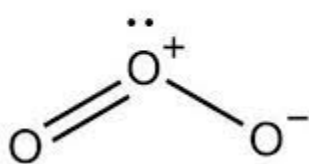
Answer: (a) $\text{NH}_4\text{Cl} > \text{HF} > \text{HCl} > \text{Ar}$ is the correct order of strength of intermolecular forces. NH_4Cl is an ionic compound and has the strongest intermolecular electrostatic force of attraction.

Q4. How many oxygen atoms does ozone have?

- (a) 1
- (b) 3
- (c) 2
- (d) 4

Answer: (b)

OZONE STRUCTURE



Q5. Which gas is released when ozone reacts with hydrogen sulphide?

- (a) Sulphur dioxide
- (b) Sulphur trioxide
- (c) Oxygen
- (d) Hydrogen

Answer: (a)

