

Daily Practice Problems

NEET CHEMISTRY

Topic: Chemical Bonding

Q.1	Which of the fo	lowing molecule	is having	complete	octet -
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- (1) BeCl₂ (dimer)
- (2) BeH₂ (dimer)

(3) BeH₂(s)

(4) BeCl₂ (s)

Q.2 In which of the following compounds octet is complete and incomplete for all atoms -

	Al_2Cl_6	$Al_2(CH_3)_6$	AIF ₃	BeCl ₂	BeH ₂
				Dimer	Dimer
(1)	IC	IC	IC	С	С
(2)	С	IC	IC	С	IC
(3)	С	IC	С	IC	IC
(4)	IC	С	IC	IC	IC

(Note: C for complete octet and IC for incomplete octet.)

Q.3 In the Born-Haber cycle for the formation of solid common salt (NaCl), the largest contribution comes from -

- (1) the low ionization potential of Na
- (2) the high electron affinity of CI

(3) the low ΔH_{vap} of Na(s)

(4) the lattice energy

Q.4 Compound with the highest melting point is -

- (1) BaCl₂
- (2) CaCl₂
- (3) BeCl₂
- (4) MgCl₂

Q.5 Which type of bond is not present in HNO₂ molecule -

- (1) Covalent
- (2) Co-ordinate
- (3) Ionic
- (4) Ionic as well as Co-ordinate

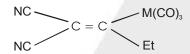
Q.6 For two ionic solids, CaO and KI. Identify the wrong statement among the following -

- (1) Lattice energy of CaO is much larger than that of KI
- (2) KI is soluble in benzene

(3) CaO has higher melting point

(4) KI has lower melting point

- Which of the following pairs will form the most stable ionic bond? **Q.7**
 - (1) Na and CI
- (2) Mg and F
- (3) Li and F
- (4) Na and F
- The boiling point of ICI is nearly 40°C higher than that of Br₂ although the two subtances have the same relative **Q.8** molecular mass. This is bacause:
 - (1) ICI is ionic compound
 - (2) I-Cl bond is stronger than Br-Br bond
 - (3) ICI is polar covalent molecular while Br₂ is non polar
 - (4) Ionization energy IP of Iodine is less than that of Br
- **Q.9** The M.P. of SnCl₄ is less than of SnCl₂, the suitable reason for the observed fact is:
 - (1) There is more charge on Sn⁺⁴
 - (2) The size of Sn⁺⁴ is small
 - (3) Ionic potential (ϕ) of Sn⁺⁴ is high
 - (4) The shape of SnCl₄ is tetrahedral
- Q.10 The number of σ & π bond in the compound respectively are -



- (1) 19, 11
- (2) 19, 5
- (3) 13, 11
- (4)7,3
- The pair which have maximum value of, would be -Q.11
 - (1) Cs_2O , NO_2 (2) CO_2 , ZnO
 - (3) BeO, Al_2O_3 (4) Cl_2O , NO_2
- lonic potential (\$\phi\$) of electropositive element will be highest in which of the following compound -Q.12
 - (1) CsCl
- (2) MgCl₂
- (3) AIF₃
- $(4) SF_6$
- Q.13 In $[Fe(CO)_5]$, hybridisation state and number of co-ordinate bonds are -
 - $(1) sp^3d, 5$
- $(2) dsp^2, 10$
- $(3) d^2sp^2,5$
- $(4) dsp^3, 10$

Q.14 Which is not correct:

- (1) Bond angle H-S-H < H-OH
- (2) Bond angle F-O-F < CI-O-CI
- (3) Bond angle H-P-H < H-N-H
- (4) Bond angle CI-Sn-CI > CI-Hg-CI

Q.15 The AsF₅ molecule is trigonal bipyramidal. The hybrid orbitals used by the As atoms for bonding -

- (1) $d_{x^2-y^2}, d_{z^2}, s, p_x, p_y$
- (2) d_{xy} , s, p_x , p_y , p_z
- (3) s,p_x, p_v,p_z, d_{z^2}
- (4) $d_{x^2-y^2} s, p_x, p_y$

Q.16 Incorrect code regarding shape is -

(1) Linear:, (CN)2,

(2) Pyramidal:, NH₃, XeO₃

(3) Trigonal planar:

(4) Tetrahedral : SiH₄, Ni(CO)₄, [CuBr₄]⁻²

Q.17 Which of the following set is not correct -

- (1) SO₃, O₃, all have coordinate bonds
- (2) H₂O, NO₂, all are 'V' shape molecules
- (3) $I_{3}^{-}, ICl_{2}^{-}, NO_{2}^{+}$ all are linear molecules
- (4) SF₄, SiF₄, XeF₄ are tetrahedral in shape

Q.18 Linear structure is assumed by -

- (I) NCO-
- (II) CS₂
- (III) ⁺_{NO₂}
- (IV) Solid BeH₂
- (1) all four
- (2) (II), (III) and (IV)
- (3) (I), (II) and (III)
- (4) (II) and (III)

Q.19 The shapes of XeF_4 , XeF_5^- and $SnCl_2$ are -

- (1) octahedral, trigonal bipyramidal and bent
- (2) Sq. pyramidal, pentagonal planar and linear
- (3) Sq. Planar, pentagonal planar and angular
- (4) See-saw, T-shaped and linear

Q.20 Which of the following process are associated with change of hybridization of the underlined compound?

- (1) Al(OH)₃ ppt. dissolved in NaOH
- (2) B₂H₆ is dissolved in THF
- (3) SiF₄ vapour is passed through liq. HF
- (4) Solidification PCI₅ vapour

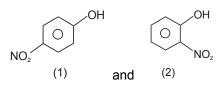
Correct answer is -

- (1) 1, 2, 4
- (2) 1, 3, 4
- (3) 2, 3, 4
- (4) 1, 2, 3

Q.21 Species having zero dipole moment:

- (1) XeF₄
- $(2) SO_2$
- (3) SF₄
- (4) CH₂Cl₂

Q.22 Out of the two compounds shown below, the vapour pressure of (2) at a particular temperature is expected to be:



- (1) Higher than that of (1)
- (2) Lower than that of (1)
- (3) Same as that of (1)
- (4) Can be higher or lower depending upon the size of the vessel

Q.23 Which of the following molecules are expected to exhibit intermolecular H-bonding?

- (I) Acetic acid
- (II) o-nitrophenol
- (III) m-nitrophenol
- (IV) o-boric acid

Select correct alternate:

- (1) I, II, III
- (2) I, II, IV
- (3) I, III, IV
- (4) II, III, IV

Q.24 Which one is the most resonance stabilized amongest the following -

- $(1) NO_3^-$
- $(2) NO_2^-$
- (3) SO₂
- $(4) O_3$

Q.25 In which of the following compounds resonance does not occurs -

- (a) H₂O
- (b) SiO₂
- (c) SO_3
- (d) CO_2

Correct answer is -

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

Q.26 Resonance is not shown by -

- $(1) C_6 H_6$
- (2) CO₂
- $(3) CO_3^{2-}$
- (4) SiO₂

- **Q.27** In PO_4^{3-} , the formal charge on each oxygen atom and the P–O bond order respectively are -
 - (1) 0.75, 0.6
- (2) 0.75, 1.0
- (3) 0.75, 1.25
- (4) 3, 1.25
- Q.28 Incorrect order of melting point and boiling point -
 - (1) NaCl < MgCl₂ < AlCl₃
 - (2) HF > HBr > HCl
 - $(3) H_2O > HF > NH_3$
 - (4) $H_2O > C_2H_5OH > CH_3 O-CH_3$
- Q.29 Pick out the wrong statement -
 - (1) LiF has less solubility in water than LiI
- (2) Lattice energy of MgO is greater than Na₂O
- (3) LiH is more stable than KH
- (4) KO₂ is diamagnetic and colourless
- Q.30 A metal M readily forms its sulphate MSO₄, which is water soluble. It forms an insoluble hydroxide M(OH)₂ which is soluble in NaOH solution, then M is -
 - (1) Mg
- (2) Ca
- (3) Be
- (4) Ba

ANSWER KEY

	E-1									
Que.	1	2	3	4	5	6	7	8	9	10
Ans.	4	3	4	1	4	2	2	3	3	1
Que.	11	12	13	14	15	16	17	18	19	20
Ans.	4	4	4	4	3	3	4	3	3	2
Que.	21	22	23	24	25	26	27	28	29	30
Ans.	1	1	3	1	2	4	3	1	4	3