Arjuna JEE 2.0 2026

Chemistry

Chemical Bonding and Molecular Structure

DPP: 3

Time Duration-27 Mins.

Q1 If the atomic number of element X is 7 the Lewis diagram for the element is

(A) $\mathrm{X}\bullet$

(B) $\cdot\ddot{\mathrm{X}}:$

(C) $\cdot\ddot{\mathrm{X}}:$

(D) $\cdot:\ddot{\mathrm{X}}:$

Q2 According to Fajans rule covalent bond is favoured by:

(A) small cation and large anion.

(B) small cation and small anion.

(C) large cation and large anion.

(D) large cation and small anion.

Q3 Polarisation is the distortion of the shape of anion by an adjacently placed cation. Which of the following statement is correct?

(A) Maximum polarization is brought about by cation of high charge

(B) Maximum polarization is brought about by cation of Low charge

(C) A large cation is likely to bring about a large degree of polarization

(D) A small anion is likely undergo a large degree of polarization

Q4 Polarization power of a cation increases when

(A) Charge on the cation increases

(B) Size of the cation increases

(C) Charge on the cation decreases

(D) Has no relation to its size or charge

Q5 In a covalent bond formation,

(A) transfer of electrons takes place

(B) equal sharing of electrons between two atoms takes place

(C) electrons are shared by one atom only

(D) electrons are donated by one atom and shared by both atoms.

Q6 Which of the following shows the Lewis dot formula for CO_2?

(A) $:\ddot{\mathrm{O}}::\mathrm{C}::\ddot{\mathrm{O}}:$

(B) $:\ddot{\mathrm{O}}:\ddot{\mathrm{C}}::\ddot{\mathrm{O}}:$

(C) $:\ddot{\mathrm{O}}:\mathrm{C}:\ddot{\mathrm{O}}:$

(D) $:\ddot{\mathrm{O}}:\mathrm{C}:\ddot{\mathrm{O}}:$

Q7 Among the following the exceptions of the octet rule are:

(A) the incomplete octet of central atom.

(B) an odd number of electrons on central atom.

(C) expanded octet of the central atom.

(D) All of these

Q8 In which of the following species the bond is non-directional?
(A) NCl_3
(B) $RbCl$
(C) $BeCl_2$
(D) BCl_3

Q9 Sodium chloride has a crystalline structure made up of Na+ and Cl– ions. Why does NaCl not conduct electricity in solid state?
(A) The ions of NaCl become mobile only in molten state and are not free to move in solid state
(B) The crystalline structure does not have ions
(C) When a bond is formed between ions they lose their charges
(D) None of these

Q10 Most ionic compounds have
(a) high melting point and low boiling point
(b) high melting point and non-directional bonds
(c) high solubilities in polar solvents and low solubilities in non-polar solvents
(d) three dimensional network structures and are good conductors of electricity in the molten state
(A) None of the above
(B) b, c, d
(C) a, b, c
(D) All of the above

Q11 In an ionic compound A^+X^- the degree of covalent
bonding is greatest when:

(A) A^+ and X^- ion are small

(B) A^+ and X^- ion are large

(C) A^+ and X^- ion are approximately of the same size

(D) A^+ is small and X^- is large

Answer Key

Q1	(C)
Q2	(A)
Q3	(A)
Q4	(A)
Q5	(B)
Q6	(A)
Q7	(D)
Q8	(B)
Q9	(A)
Q10	(B)
Q11	(D)