

MCQs on Chemical Bonding

1. Complete transfer of one or more electrons between atoms constituting in forming
(a) Ionic bond (b) Covalent bond (c) Co-ordinate bond (d) Dative bond
2. When single atom provides both electrons which are needed for completion of covalent bond then it leads to.....
(a) Ionic bond (b) Covalent bond (c) Co-ordinate bond (d) Metallic bond
3. Metals lose electrons from their lattice to become
(a) Positive ions (b) negative ions (c) alkalies (d) non-metals
4. In ammonium ion, electrons required between hydrogen ion and nitrogen ion are
(a) 1 (b) 2 (c) 3 (d) 4
5. Dative covalent bond is found in
(a) Ammonia (b) ammonium ion (c) urea (d) nitrogen
6. Pairs of outer shell electrons not used in bonding are called as.....
(a) Valence electrons (b) donor electrons (c) Electrovalent electrons (d) lone pairs)
7. Charge on any ion depends upon gain or loss of.....
(a) Electrons (b) protons (c) neutrons (d) nucleons
8. Bond formed by sharing of four electrons is called as.....
(a) Covalent bond (b) electrovalent bond (c) dative covalent bond (d) double covalent bond
9. For dative covalent bonding, one atom having a lone pair of electrons combines with
(a) An electron deficient compound (b) an expanded octet
(c) A proton of other atom (d) a neutron of other atom
10. When the bond is formed by sharing of two pairs of electrons by atoms, then the bond is called as.....
(a) Single covalent bond (b) double covalent bond (c) triple covalent bond (d) ionic bond
11. Neither ions nor electrons are free to move in.....
(a) Liquids (b) metals (c) ionic solids (d) all of the above
12. Metals and non-metals combine to give electronic configuration of.....
(a) alkalies (b) noble gases (c) metalloids (d) acids
13. Weak forces between molecules are called as.....
(a) Molecular forces (b) intermolecular forces
(c) intra molecular forces (d) extra molecular forces

14. Noble gases exist as.....
(a) Monoatomic (b) diatomic(c) polyatomic (d) none of these
15. Electrons are usually lost by.....
(a) Metals (b) non-metals(c) inert gases (d) all of the above
16. In nitrogen molecule, number of electrons required by each nitrogen atom in outer shell are
(a) 1 (b) 2 (c) 3 (d) 4
17. When magnesium reacts with oxygen, nature of the bond formed is.....
(a) Ionic (b) covalent(c) metallic d) dative
18. Metals are good conductors due to
(a) Ionic lattice (b) crystalline lumps (c) mostly solids (d) delocalized electrons
19. Physical properties of bonding are influenced by bonding between.....
(a) Atoms (b) ions (c) molecules (d) all of the above
20. Conduction of electricity in metallic bonding is due to the presence of.....
(a) Protons (b) lattice(c) delocalized electrons (d) nucleus
21. Attempt in ionic bond formation is.....
(a) To get rid of excess electrons (b) To attain configuration of noble gases
(c) To avoid further reaction (d) all of the above
22. When a covalent bond is formed between hydrogen atom and a very electronegative atom, then it is known as
(a) ionic bond (b)hydrogen bond (c) co-ordinate bond (d) all of the above
23. Metal atoms.....
(a) Lose their outer electrons(c) became negatively charged
(b) become positively charged (d) both (a) and (b)
24. Nitrogen molecule is an example of.....
(a) Single covalent bond b) double covalent bond (c) triple covalent bond
(d) single co-ordinate bond
25. Regular arrangement in which atoms are closely packed together is called a.....
(a) Tetrahedral structure (b) lattice (c) atomic structure (d) none of the above
26. Representation of bond by a single, double or triple line is done in
(a) metallic bond (b) co-ordinate bond (c) covalent bond (d) ionic bond

27. Covalent compounds are.....
(a) good conductors of electricity (b) non-conductors of electricity
(c) poor conductors of electricity (d) none of the above
28. Resulting a loss of electrons (e) forms.....
(a) Anodes (b) cathodes (c) negative ions (d) positive ions
29. Molecules which have permanent dipole are known as.....
(a) Polar (b) dipolar (c) non-polar (d) tripolar
30. Electrovalent bond is another name of.....
(a) metallic bond (b) covalent bond (c) ionic bond (d) co-ordinate bond
31. When molecule is formed by chemical bonding then.....
(a) nucleus of combining atoms participate (b) Valence electrons of combining atoms participate
(c) Valence electrons and inner cell electrons participate (d) None of the above
32. Which statement is incorrect for metallic bond?
(a) there is attraction between delocalized electrons and atomic kernel
(b) directional property is shown by metal
(c) delocalized electron can change their position easily in crystal
(d) explanation of metallic bond can be given by 'electron sea model
33. Which of the following characteristic does not possess by the metal?
(a) luster (b) ductility (c) increase in conductance by increase in temperature
(d) malleability
34. On which factor, conductance of metals is responsible?
(a) ions (b) delocalized electrons (c) atomic kernel (d) number of atoms
35. The difference between the number of atoms in a unit cell of a BCC crystal and an FCC crystal is
- (a)1 (b) 2 (c) 4 (d) 6
36. When partial positive end of one molecule is attracted weakly to partial negative end, then the force between them is.....
(a) electrostatic force (b) dipole-dipole interaction(c) ionic bond(d) none of the above
37. Tendency of atoms to acquire eight electrons in their valence shell is
- (a) octet rule (b) duplet rule (c) triplet rule(d) all of the above
- 38 . To form anion, non-metal atom

- (a) loses electrons (b) gain electrons (c) loses protons (d) gains protons
39. When two identical atoms share electron pairs and exert force on each other then the bond formed is
- (a) non-polar covalent bond (b) polar covalent bond
(c) double covalent bond (d) ionic bond
40. Crystal lattice is actually.....
- (a) sum of points (b) array of points (c) lines of points (d) triangles of points
41. In crystal lattice, particles are arranged in
- (a) two dimensions (b) four dimensions (c) three dimensions (d) single dimension
42. Unit cell is the smallest building unit of
- (a) crystal lattice (b) liquids (c) gases (d) none of the above
43. Which of the following is an amorphous solid?
- (a) diamond (b) glass (c) sodium chloride (d) none of the above
44. The sharp melting point of crystalline solids is due to.....
- (a) A regular arrangement of constituent particles observed over a short distance in the crystal lattice
(b) A regular arrangement of constituent particles observed over a long distance in the crystal Lattice
(c) Same arrangement of constituent particles in different directions
(d) Different arrangement of constituent particles in different directions
45. Solids which have array of positive and negative ions arranged in a characteristic pattern throughout the crystal lattice are known as
- (a) ionic solids (b) covalent solids (c) molecular solids (d) metallic solids
46. The lattice site in a pure crystal cannot be occupied by.....
- (a) molecule (b) ion (c) electron (d) atom
47. The co-ordination number of BCC structure is.....
- (a) 4 (b) 8 (c) 2 (d) 12
48. A force that acts between two or more atoms to hold them together as a stable molecule is known as -
- (a) Atom (b) molecule (c) valence electron (d) chemical bonding
49. Total number of electrons present in valence shell is known as

- (a) valency (b) valence electron (c) octet (d) all of these
50. The tendency of atoms to acquire eight electrons in their valence shell is.....
- (a) Octet rule (b) Duplet rule (c) Triplet rule (d) all of these
51. The following statement is always correct for an atom-
- (a) an atom has equal number of electrons and protons
(b) an atom has equal number of electrons and neutrons
(c) an atom has equal number of protons and neutrons
(d) an atom has equal number of electrons, protons and neutrons
52. The tendency of atoms to acquire two electrons in their valence shell is
- (a) Octet rule (b) Duplet rule (c) Triplet rule (d) all of these
53. The atom excluding the valence electron is called- of the atom.
- (a) anion (b) kernel (c) delocalized electron (d) kernel and delocalized electron
54. Atoms of the elements with eight electrons in their valence shell are
- (a) chemically stable (b) chemically unstable
(c) chemically reactive (d) chemically stable and chemically unstable
55. Atoms of the elements has less than eight electrons in their valence shell are-
- (a) chemically stable (b) chemically unstable
(c) chemically reactive (d) both (b) and (c)
56. The tendency of an element to pull the electron towards itself is known as-
- (a) electropositivity (b) ionization potential (c) electron affinity (d) electronegativity
57. The tendency of an element to donate the electrons easily is known as –
- (a) electropositivity (b) ionization potential (c) electron affinity (d) electronegativity
58. Correct electronic distribution in Mg atom is-
- (a) 3, 8, 1 (b) 2, 8, 2 (c) 1, 8, 3 (d) 8, 2, 2
59. Correct electronic configuration of Na atom is
- (a) 3, 8, 1 (b) 2, 8, 2 (c) 1, 8, 3 (d) 8, 2, 2
60. An element has
- (1) Atomic number = number of protons + number of electrons
(2) Mass number = number of protons + number of neutrons
(3) Atomic mass = number of protons = number of neutrons
(4) Atomic number = number of protons = number of electrons

- (a) (1) and (2) (b) (1) and (3) (c) (2) and (3) (d) (2) and (4)
61. The bond between two different H-F molecules due to electronegativity difference is
(a) Covalent bond (b) ionic bond (c) hydrogen bond (d) vander waals bond
62. The bond between two different HCl molecules due to electronegativity difference is
(a) Covalent bond (b) ionic bond (c) hydrogen bond (d) dipole-dipole bond
63. After combination of metals and non metals, they achieve configuration of
(a) metals (b) non metals (c) inert gases (d) metalloid
64. In nitrogen molecule, the total number of electrons involved in bonding are
(a) 2 (b) 4 (c) 6 (d) 8
65. Metals losses electrons from their lattice to become
(a) positive ion (b) negative ion (c) alkalis (d) non-metals
66. Elements with valency 1 are
(a) Always metals (b) always metalloids
(c) Either metals or non-metals (d) always non-metals
67. Total number of atoms present in nitrogen molecule are
(a) 1 (b) 2 (c) 3 (d) 4
68. The water is
(a) electrovalent compound (b) covalent compound
(c) coordinate compound (d) ionic compound
69. The chlorine gas is
(a) monoatomic (b) diatomic (c) triatomic (d) tetratomic
- 70 Noble gases exist as
(a) Monoatomic (b) diatomic (c) polyatomic (d) None of these
71. An atom with 3 protons and 4 neutrons will have a valency
(a) 3 (b) 7 (c) 1 (d) 4
72. An ammonium ion or sulphur dioxide molecule is formed by
(a) Coordinate bond (b) ionic bond (c) covalent bond (d) metallic bond
73. Particles that mostly affect material properties are
(a) neutrons (b) protons (c) electrons (d) valence electrons
74. The weaker bond is the following bond
(a) van der Waals bond (b) covalent bond (c) metallic bond (d) ionic bond

75. Electron sea exists in
(a) Polar bond (b) ionic bond (c) covalent bond (d) metallic bond
76. Covalent compounds are less soluble in polar solvent like
(a) Water (b) kerosene (c) benzene (d) acetone
77. Covalent compounds are more soluble in organic solvent like
(a) Alcohol (b) kerosene (c) benzene (d) all of these
78. Covalent compounds are
(a) Good conductors of electricity (b) non-conductors of electricity
(c) Poor conductors of electricity (d) none of these
79. Ionic compounds are soluble in polar solvent like
(a) water (b) kerosene (c) benzene (d) acetone
80. Metals can be hammered into different shapes and drawn into wires, hence they are
(a) soft (b) malleable (c) ductile (d) both (b) and (c)
81. The slightly acidic hydrogen atom attached to electronegative F, O, N atom, is held with other molecule due to polarization is known as
(a) ionic bond (b) hydrogen bond (c) co-ordinate bond (d) all of these
82. Hydrogen bonding formed in o-nitrophenol is
(a) intramolecular (b) intermolecular hydrogen (c) inter and intramolecular (d) none of these
83. The weak forces present between the molecules are
(a) Molecular forces (b) intramolecular forces
(c) Intermolecular forces (d) extra molecular forces
84. Because of strong intermolecular force, solids has definite
(a) Shape (b) volume (c) both (a) and (b) (d) none of these
85. Crystalline solid shows
(a) Anisotropic properties (b) sharp melting point
(c) Definite arrangement of constituent particles (d) all of these
86. Repeatable entity of a crystal structure is known as
(a) Crystal (b) lattice (c) unit cell (d) Miller indices
87. Logically crystal structure is composed of
(a) Lattice (b) basis or motif (c) both (a) and (b) (d) none of these
88. The giant ionic structures are also names given to

- (a) Ionic lattice (b) crystal lattice (c) metallic lattice (d) covalent lattice
89. In crystal lattice, particles are arranged in
(a) Two dimensions (b) four dimensions (c) three dimensions (d) single dimension
90. Among the following which is crystalline solid
(a) Plastic (b) rubber (c) glass (d) brine salt
91. Among the following which is amorphous solid
(a) Plastic (b) rubber (c) glass (d) all of these
92. The three dimensional graph of lattice points which sets the pattern for the whole lattice is called
(a) Unit lattice (b) simple lattice (c) crystal lattice (d) unit cell
93. The solids having array of positive and negative ions arranged in a characteristic pattern throughout the crystal lattice are known as
(a) Ionic solids (b) covalent solids (c) molecular solids (d) metallic solids
94. The total number of atom/atoms present in face centered cubic unit cell is
(a) 1 (b) 2 (c) 3 (d) 4
95. The total number of atom/atoms present in body centered cubic unit cell is
(a) 1 (b) 2 (c) 3 (d) 4
96. The total number of atom/atoms present in simple cubic unit cell is-
(a) 1 (b) 2 (c) 3 (d) 4
97. The total number of atom/atoms present in hexagonal closed packed unit cell is
(a) 1 (b) 4 (c) 6 (d) 12
98. Coordination number for closest packed crystal (hexagonal closed packing) structure is
(a) 16 (b) 12 (c) 8 (d) 4
99. Which of the following contains hydrogen bonding?
(a) NaCl (b) MgO (c) water (d) oxygen
100. Identify the compound formed by mutual sharing of electrons is
(a) electrovalent (b) ionic (c) covalent (d) co-ordinate
101. Dative bond is another name of
(a) ionic bond (b) electrovalent bond (c) covalent bond (d) co-ordinate band
102. In a molecule, atoms are held together with the help of.....
(a) Mechanical strength (b) chemical bond (c) adhesive (d) lubricant

103. Atomic number is equal to.....
(a) Number of neutrons (b) number of nucleons
(c) Number of protons (d) (a) and (b)
104. Atoms of active elements have.....
(a) Complete outermost orbit (c) inert gas configuration
(b) Incomplete outermost orbit (d) complete duplet
105. Octet is an electronic arrangement of an atom when.....
(a) Outermost orbit has 8 electrons (b) all orbits have 8 electrons
(c) Outermost orbit has less than 8 electrons (d) outermost orbit has 8 neutrons
106. The electrostatic force of attraction holding two ions together is known as.....
(a) Covalent bond (b) electrovalent bond (c) metallic bond (d) hydrogen bond
107. Metallic bond is not responsible for in metals.
(a) Malleability (b) oxidation (c) luster (d) conductivity
108. Positive core left behind after elimination of valence electron in an atom is.....
(a) Nucleons (b) nucleus (c) kernel (d) anion
109. Ionic bond is formed between.....
(a) Molecules of similar type (b) atoms of different elements
(c) atoms of same elements (d) none of these
110. When H-atom acts as a bridge between two electronegative atoms, then chemical bond formed is called.....
(a) Dative bond (b) ionic bond (c) hydrogen bond (d) metallic bond
111. Water accumulates in cells of animals and plants due to the presence of.....
(a) Dative bond (b) ionic bond (c) hydrogen bond (d) metallic bond
112. Matter which is highly compressible in nature is.....
(a) Solid (b) liquid (c) gas (d) none of these
113. Matter which is non-compressible in nature is.....
(a) Solid (b) liquid (c) gas (d) none of these
114. The number of lone pair of electrons present in ammonia (NH₃) molecule is
(a) One (b) two (c) three (d) four
115. The number of lone pair of electrons present in water (H₂O) molecule are
(a) One (b) two (c) three (d) four

Answers

1. (a)	2. (c)	3. (a)	4. (b)	5. (b)	6. (d)	7. (a)	8. (d)	9. (a)	10. (b)
11. (c)	12. (b)	13. (b)	14(a)	15(a)	16(c)	17(a)	18(d)	19(d)	20(c)
21(b)	22(b)	23(d)	24(c)	25(b)	26(c)	27(b)	28(d)	29(a)	30(c)
31(b)	32(b)	33(c)	34(b)	35(b)	36(b)	37(a)	38(b)	39(a)	40(b)
41(c)	42(a)	43(b)	44(b)	45(a)	46(c)	47(b)	48 (d)	49. (b)	50. (a)
51. (a)	52. (b)	53. (b)	54. (a)	55. (d)	56. (d)	57. (a)	58. (b)	59. (b)	60. (d)
61. (c)	62. (d)	63. (c)	64. (c)	65. (a)	66. (c)	67. (b)	68. (b)	69. (b)	70. (a)
71. (c)	72. (a)	73. (d)	74. (a)	75. (d)	76. (a)	77. (d)	78. (b)	79. (a)	80. (d)
81. (b)	82. (a)	83. (b)	84. (c)	85. (d)	86. (c)	87. (c)	88. (a)	89. (c)	90. (d)
91. (d)	92. (c)	93. (a)	94. (d)	95. (b)	96 (a)	97. (c)	98. (b)	99. (c)	100(c).
101(d)	102 (b)	103 (c)	104 (b)	105 (a)	106 (b)	107 (b)	108 (c)	109(b)	110 (c)
111 (c)	112 (c)	113 (a)	114 (a)	115 (b)					