

## Chapter 2

### Chemical Bonding and Structure MCQs

**MCQ 1:** Metals are solids, except

- A. helium
- B. selenium
- C. mercury
- D. Potassium

**MCQ 2:** Melting point of silica ( $\text{SiO}_2$ ) is

- A. 1650 °C
- B. 1660 °C
- C. 1700 °C
- D. 1760 °C

**MCQ 3:** Potassium Oxide is formed through

- A. two potassium ions and one oxygen ion
- B. one potassium ion and one oxygen ion
- C. two potassium ions and two oxygen ion
- D. one potassium ion and two oxygen ion

**MCQ 4:** In the formation of an ionic bond in Potassium Fluoride (KF), the Potassium ion ( $\text{K}^+$ ) gets a

- A. single positive charge
- B. double positive charge
- C. single negative charge
- D. double negative charge

**MCQ 5:** Due to mobile valence electrons, metals are

- A. rigid
- B. not rigid
- C. poor electrolytes
- D. poor insulators

**MCQ 6:** In polarization, positive side attracts the

- A. negative side of the water molecules
- B. positive side of the water molecules
- C. substance dissolves completely in water
- D. none of above

**MCQ 7:** Solvents of covalent compounds include all but

- A. alcohol
- B. water
- C. petrol
- D. tetra chloromethane

**MCQ 8:** Poor conductors of electricity is a characteristic of

- A. ionic compounds
- B. covalent compounds
- C. metallic compounds
- D. dative bonds

**MCQ 9:** Elements in group III are likely to form

- A. ionic bonds
- B. covalent bonds
- C. metallic bonds
- D. dative bonds

**MCQ 10:** What is true about diamonds?

- A. they cannot conduct electricity
- B. they can conduct electricity

- C. they have metallic bonds
- D. they are an oxide

**MCQ 11:** Simple molecules or giant macromolecules are examples of

- A. ionic compounds
- B. covalent bonds
- C. metallic bonds
- D. dative bond

**MCQ 12:** Other than being used to line the furnaces, a quality of ionic crystal structures is that they are

- A. conductors of heat
- B. conductors of electricity
- C. non-conductors of electricity
- D. non-conductors of heat

**MCQ 13:** Ionic compounds conduct electricity when

- A. they are dissolved in water only
- B. they are in molten form only
- C. they are in gaseous form
- D. they are dissolved in water and in molten form

**MCQ 14:** Electrons involved in bonding are from

- A. duplet
- B. octet
- C. outermost shells
- D. innermost shell

**MCQ 15:** Double covalent bond refers to the sharing of

- A. one electron
- B. two electrons

- C. three electrons
- D. four electrons

**MCQ 16:** A shared pair of electrons like  $\text{Cl}_2$  forms

- A. ionic bonds
- B. single covalent bond
- C. double covalent bond
- D. dative bond

**MCQ 17:** Due to hydrogen bonds in water, water has

- A. high van der Waals forces
- B. high boiling points
- C. many valence electrons
- D. none of above

**MCQ 18:** The formula of Lithium chloride is

- A.  $\text{LiCl}_2$
- B.  $\text{Li}_2\text{Cl}$
- C.  $\text{LiCl}$
- D.  $\text{Li}_3\text{Cl}_2$

**MCQ 19:** Double covalent bond refers to the sharing of

- A. one electron
- B. one pair of electron
- C. three electrons
- D. two pairs of electron

**MCQ 20:** In metals, outermost electrons become

- A. strongly attached to nucleus
- B. easily delocalized
- C. very hard to detach
- D. very easy to detach

**MCQ 21:** electronic configuration of the chlorine atom is

- A. 2,6,8
- B. 2,8,8
- C. 2,8,7
- D. 2,8,1

**MCQ 22:** Common covalent bonds include

- A. MgO
- B. KF
- C. LiCl
- D. CH<sub>4</sub>

**MCQ 23:** Graphite is a good conductor of electricity due to

- A. strong electrostatic bonding
- B. free localized bonds
- C. free delocalized electrons
- D. tetrahedral arrangement of particles

**MCQ 24:** Examples of refractory materials include

- A. MgO
- B. LiCl
- C. KF
- D. CaCl<sub>2</sub>

**MCQ 25:** What is correct about metals?

- A. they are good conductors of heat
- B. they are good conductors of electricity
- C. they are not rigid
- D. all of above

**MCQ 26:** Diamond is an example of

- A. ionic bonds
- B. covalent bonds
- C. metallic bonds
- D. dative bonds

**MCQ 27:** The way atoms join together and combine is called

- A. isotopes
- B. alloys
- C. bonding
- D. dative bond

**MCQ 28:** Giant crystal lattices are only formed in

- A. ionic compounds
- B. covalent compounds
- C. metallic compounds
- D. dative bond

**MCQ 29:** In formic an ionic bond Magnesium Oxide (MgO),  
Magnesium

- A. loses 1 electron
- B. loses 2 electrons
- C. gains 1 electron
- D. gains 2 electros

**MCQ 30:** Formation of Cl<sub>2</sub> requires sharing of

- A. one electron
- B. one pair of electrons
- C. three electrons
- D. two pairs of electrons

**MCQ 31:** Very high boiling and melting points are of

- A. covalent compounds
- B. ionic compounds
- C. metallic compounds
- D. dative bonds

**MCQ 32:** Compounds evaporating easily and giving off a smell are

- A. ionic compounds
- B. covalent bonds
- C. metallic bonds
- D. dative bonds

**MCQ 33:** Covalent compounds are poor conductors of electricity because

- A. they do not have ions only
- B. the molecules cannot carry electricity only
- C. they contain non-metals
- D. they do not have ions and the molecules cannot carry electricity

**MCQ 34:** Organic solvents are

- A. polar solvents
- B. non-polar solvents
- C. donors of Hydrogen ions
- D. formed through sigma bonds

**MCQ 35:** Substances inside fire extinguishers are examples of

- A. ionic bonds
- B. covalent bonds
- C. metallic bonds
- D. dative bond

**MCQ 36:** Ammonia  $\text{NH}_3$  is an example of

- A. ionic bonds
- B. covalent bonds
- C. metallic bonds
- D. dative bonds

**MCQ 37:** Positive ions in a sea of electrons are found in

- A. ionic compounds
- B. covalent bonds
- C. metallic bonds
- D. dative bond

**MCQ 38:** Refractory materials are examples of

- A. ionic bonds
- B. covalent bonds
- C. metallic bonds
- D. dative bond

**MCQ 39:** Melting and boiling points are examples of

- A. rigidity
- B. volatility
- C. solubility
- D. conductivity

**MCQ 40:** Fuels like petrol and natural gas are examples of

- A. ionic compounds
- B. covalent bonds
- C. metallic bonds
- D. dative bond

**MCQ 41:** Ionic crystals are non-conductors of electricity as

- A. they are in fixed positions
- B. they share strong electrostatic forces



- C. they have van der Waals forces
- D. they lack crystal lattices

**MCQ 42:** In diamond, the arrangement of carbon is

- A. hexagonal
- B. tetrahedral
- C. octagonal
- D. cube shaped

**MCQ 43:** Transference of electrons is involved in

- A. ionic bonds
- B. covalent bonds
- C. metallic bonds
- D. dative bonds

**MCQ 44:** Electronic configuration 2,8,6 indicates that in order to gain stability, oxygen is short of

- A. one electron
- B. one pair of electron
- C. three electrons
- D. two pairs of electron

**MCQ 45:** Organic solvents do not include

- A. alcohol
- B. water
- C. petrol
- D. tetra chloromethane

**MCQ 46:** Bonding can be

- A. metallic
- B. covalent
- C. ionic

D. all of above

**MCQ 47:** The formula of Calcium chloride ionic bond is

- A.  $\text{CaCl}_2$
- B.  $\text{Ca}_2\text{Cl}$
- C.  $\text{CaCl}$
- D.  $\text{Ca}_3\text{Cl}_2$

**MCQ 48:** Metals in Group-II are highly likely to form

- A. ionic bonds
- B. covalent bonds
- C. metallic bonds
- D. dative bond

**MCQ 49:** Non-metals in group VII are likely to form

- A. ionic bonds
- B. covalent bonds
- C. metallic bonds
- D. dative bond

**MCQ 50:** Volatility refers to the

- A. rigidity of substances
- B. malleability
- C. ductability
- D. melting point of substances

**MCQ 51:** What is true about ionic compounds in solid-state?

- A. they have low melting points
- B. they have low boiling points
- C. they conduct electricity
- D. they are non-conductors of electricity

**MCQ 52:** Molecules having Van der Waals' forces have

- A. higher stability
- B. have high melting points
- C. have low melting points
- D. have high boiling points

**MCQ 53:** Covalent compounds are

- A. normally gases
- B. volatile liquids
- C. with low boiling points
- D. all of above

**MCQ 54:** Which is a characteristic of metals?

- A. they are electropositive
- B. they are electronegative
- C. they are good insulators
- D. they are bad conductors

**MCQ 55:** In  $\text{H}_2\text{O}$  molecule, unbounded electrons in oxygen are

- A. 1
- B. 2
- C. 3
- D. 4

**MCQ 56:** Ions are held together through

- A. physical attraction among electrons
- B. high kinetic energies of electrons
- C. electro-static attraction between ions
- D. static attraction between ions

**MCQ 57:** Due to a positive metal ion and mobile valence electron, the resulting bond is

- A. ionic in nature
- B. covalent in nature
- C. metallic in nature
- D. dative covalent bond

**MCQ 58:** Giant strong macromolecules are formed in

- A. ionic compounds
- B. simple covalent compounds
- C. complex covalent molecules
- D. metallic compounds

**MCQ 59:** Metals are malleable and ductile due to

- A. van der Waals' forces
- B. rigidity of metals
- C. non-rigidity of metals
- D. high pressures

**MCQ 60:** Elements in group-IV are likely to form

- A. ionic bonds
- B. covalent bonds
- C. metallic bonds
- D. dative bond

**MCQ 61:** Sodium (Na) is not

- A. insoluble in water
- B. salt
- C. explosive in air
- D. stable in air

**MCQ 62:** An ionic bond is important in

- A. metals of Group-I
- B. non-metals in Group-VI