Exercise-I

A. Very Short Answer Type Questions

Q.1 What is the nature of forces existing between ions in ionic bonds ?

Q.2 How many covalent bonds are there in a molecule of nitrogen ?

Q.3 What are the two main types of chemical bonds ?

Q.4 Give an example of a molecule with a double bond.

Q.5 Give an example of a molecule with a triple bond.

Q.6 The atomic number of sodium is 11. What is its electrovalency ?

Q.7 An atom has configuration 2, 6. What will be its covalency ?

Q.8 Element X has 10 protons and 10 electrons. Will it be reactive ?

Q.9 Which of the elements would be most stable?
$_{9}A$, $_{10}B$, $_{11}C$

Q.10 Three elements X, Y, and Z have the following configurations :
(i) X = 2, 8, 1 (ii) Y = 2, 7
(iii) Z = 2, 8, 2
What type of molecule will form between the following ?
(i) X and Y (ii) Z and Y (iii) Y and Y

Q.11 An element X has the configuration . Another element Y has the configuration . What type of bond will be formed between X and Y ?

Q.12 How many covalent bonds are present in a molecule of methane ?

Q.13 Give one example each of a covalent compound containing (i) three single bonds (ii) one double bond (iii) one triple bond

Q.14 Which type of bond is present in the following molecules ?
(i) F_2 (ii) O_2 (iii) N_2

Q.15 Why do covalent compounds generally not dissolve in water ?

B. Short Answer Type Questions

Q.16 Distinguish between ionic and covalent compounds.

Q.17 Two argon atoms do not form a covalent bond to give an argon molecule Ar_2. Why ?

Q.18 The elements X and Y have the following configurations :

X	2, 6
Y	2, 8, 8, 2

What is the nature of the bond between X and Y ?

Q.19 Distinguish between an atom and an ion.

Q.20 What is the role of valence electrons in the formation of a chemical compound ?

Q.21 Define electrovalency.

Q.22 Describe the nature of bond between the following
(i) sodium and bromine
(ii) carbon and chlorine
(iii) hydrogen and chlorine

Q.23 Draw the electron-dot structures of MgF_2, CaO, H_2O and CO_2.

Q.24(i) How many single bonds are there in acetylene molecules ?

(ii) How many double bonds are there in acetylene molecule ?

(iii) How many triple bonds are there in acetylene molecule ?

Q.25 From the list of compounds– I_2, N_2, CO_2, C_2H_2 and O_2 choose the molecule that contains.
(i) only a triple bond
(ii) only a single bond
(iii) only a double bond
(iv) two double bonds
(v) single and triple bonds

Exercise-II

A. Long Answer Type Questions

Q.1 What is the octet rule ? Explain it with the help of suitable examples.

Q.2 Write the electronic configuration of the noble gases.

Q.3 Explain the formation of calcium sulphide starting from calcium and sulphur. Draw the diagrammatic representation of the atom showing the electronic arrangement in various shells.

Q.4 Define cations and anions. Discuss with suitable examples.

Q.5 What is an electrovalent bond and how is it formed ?

Q.6 Show the formation of covalent bonds in HCl, CCl_4, CH_4, H_2, O_2 and Cl_2

Q.7 What is the difference between ionic and covalent compounds ?

Q.8 State the properties of electrovalent and covalent compounds.

Q.9 How will you find out which of water-soluble compounds A and B is electrovalent ? Select one electrovalent and one covalent compound from the following :
canesugar, urea, calcium oxide, sodium sulphide, hydrogen chloride gas and calcium chloride.

Q.10 State the valencies and electronic configurations of the elements of atomic number 6, 7 and 8. What type of valency do they have and why ?

B. Fill in the blanks

Q.11 The number of electrons in the valence shell of noble gases is ..... except helium which has .....

Q.12 Noble gases exist as individual .....

Q.13 The valency of Cl is 1 because it contains ..... electron less than the stable neon gas configuration.

Q.14 The chlorine atom can ..... one electron to become a chloride ion.

Q.15 The chloride ion has a ..... charge.

Q.16 Na^+ and Cl^- ions combine together to form an ..... solid.

Q.17 The size of the sodium ion is ..... than that of the sodium atom.

Q.18 Na^+ ion has the same configuration as that of .....

Q.19 F^- and Ne contain the same number of ....

Q.20 Mg^{2+} is a ..... cation.

Q.21 HCl is an example of ..... compound.

C. True /False Type Questions

Q.22 CCl_4 is a good conductor of electricity.

Q.23 The number of valence electrons in all noble gases except helium is 8.

Q.24 Hydrogen tends to achieve stable duplet arrangement.

Q.25 $Mg^{2+}$and O^{2-} have achieved stable octet arrangement.

Q.26 Water contains one single covalent bond.

Q.27 The size of Na^+ is smaller than the size of Na.

Q.28 Calcium oxide is a covalent compound.

Q.29 A solution of magnesium chloride conducts electricity.