

Periodic table

- ① Define the following and give their trends in the periodic table
- (a) Ionisation potential (b) Metallic character
(c) Electron affinity (d) Electronegativity
- ② (a) What are the elements of group 1 called?
(b) Name all elements of group 1
(c) Name the radioactive element of Group 1
- ③ (a) What type of chlorides are formed by the elements of group 1?
(b) Arrange the elements of group 1 as per the following
- (i) Increasing order of number of shells
 - (ii) Increasing order of atomic size
 - (iii) Decreasing order of ionisation potential
 - (iv) Increasing order of electron affinity
- ④ (a) What are the elements of group 17 called?
(b) Name all the elements of group 17
(c) Name the group 17 element which is solid
(d) Name the most electronegative element of Group 17
- ⑤ Give reason for the following
- (a) Inert gases have zero valency
(b) The atomic size increases as we move

down the group

- (c) Noble gases have zero electron affinity
- (d) Sodium chloride forms ionic bond

Chemical Bonding

State which of the following are oxidised or reduced

- (i) $O^{2-} \rightarrow O$ (ii) $Zn \rightarrow Zn^{2+}$
- (iii) $Fe \rightarrow Fe^{3+}$ (iv) $Fe^{3+} \rightarrow Fe^{2+}$
- (v) $Cu \rightarrow Cu^{2+}$ (vi) $N \rightarrow N^{3-}$

State the type of bond present in

- (i) Non metallic chloride
- (ii) Metallic chloride
- (iii) Chlorine molecule
- (iv) Nitrogen molecule

Give reason

- (a) Ionic compounds have high melting point.
- (b) Inert gases do not form ions

Explain the bonding in (i) CH_4 (ii)

CO_2 (iii) $NaCl$ (iv) CCl_4

(v) ZnO (vi) NH_3 (vii) NH_4^+

molar concept

① Calculate the percentage composition by weight of the following compounds

(i) H_2O (ii) NH_3 (iii) CH_4

(iv) HCl (v) $CaCO_3$ (vi) Na_2O_2

② Write the empirical formula of the compounds whose molecular formulae are as follow

(i) C_6H_6 (ii) B_6H_{12} (iii) $C_{10}H_{12}Fe_2$

(iv) N_2O_4 (v) C_6H_{12} (vi) C_4H_{10}

Acids, Bases and Salts

① Define the term:- Neutralisation

② What is the purpose of pH scale?

③ What is the pH of pure water?

④ Name two gases which are responsible for acid rain.

⑤ Define (i) water of crystallisation

(ii) Efflorescence