Solution 57
(i) X and Z.
X and Z have zero valency hence they belong to same group: noble gases.
(ii) Y and Z.
Y: 2,4 and Z: 2,8 so, both of them belong to second period with two shells filled.
Solution 58
(a) 9.
(b) 17 Cl.
(c) Both have the same number of valence electrons (7 electrons each) in their atoms.
Solution 59
(i) 18 Ar and 2 He (Noble gases) .
(ii) 20 Ca and 4 Be (no. of valence electrons in each = 2).
(iii) 8 O and 16 S (no. of valence electrons in each = 6).
Solution 60
(a) Mg since atomic size decreases from left to right in a period.
(b) K since atomic size increases on going down a group .
Solution 61
(i) C (2, 8).
(ii) B (2, 5).
(iii) A (2, 3).
(iv) 2nd period (2 shells are filled).
Solution 62
(a) 2.
(b) 2 .
(c) Metal .
(d) Magnesium .
Solution 63
(i) a (size decreases from left to right in a period) .
(ii) k (valency of k = 3; valency of o = 1).
(iii) i (metallic character decreases from left to right in a period).
(iv) g (non-metallic character increases from left to right in a period) .
(v) b (or j) .
(vi) f (or n) .
Solution 64
Valency of X = 2
(a) XCl_2
(b) XO
Solution 65
(i) Non-metal .
(ii) 6 .
(iii) 2 .
(iv) Oxygen .
(v) Na_2Y .
Solution 66
(a) Group 1 (2, 8, 8, 1).
(b) Oxygen (X is monovalent so Y has to be divalent to form the compound X_2Y)

Solution 67
(a) 2.
(b) Group 2 .

(c) XCl_2 .
Solution 68
(a) A in group 14; B in group 17.
(b) Covalent bond.
(c) AB_4 .
Solution 69
C and D .
Solution 70
(a) XY.
(b) Ionic bond .
Solution 71
V alency of group 1 metals is 1 so it will react with oxygen (valency = 2) to form X_2O.
Solution 72
(i) Covalent bond is formed between two non-metals (A and B).
(ii) AB_2 .
Solution 73
(a) Ionic compound.
(b) Yes .
(c) XY_2 .
(d) 2 .
(e) 7 .
Solution 74
(i) d.
(ii) c.
(iii) e.
(iv) Covalent bond .
(v) Ionic bond .
Solution 75
(a) B and C.
(b) A and C .
Solution 76
Argon atom, 18 electrons .
Solution 77
(a) 3rd period.
(b) Ionic compound .
(c) A and B.
(d) H.
(e) CG_3 .
Solution 78
Sodium (Na) and Potassium (K);
Sodium (Na) is a metal. So, sodium readily reacts with a halogen like chlorine (Cl) to form an ionic chloride called sodium chloride. This is illustrated below:

$$2Na\,(s) + Cl_2\,(g) \longrightarrow 2NaCl\,(s)$$

Sodium	Chlorine	Sodium chloride
(A metal)		(Ionic chloride)

Ionic bond; Ionic compounds .
Physical properties of ionic compounds:
(i) Ionic comp ounds are usually hard, brittle.
(ii) They conduct electricity when molten or dissolved.
(iii) They have high melting and boiling points.
(iv) Most are soluble in polar solvents such as water.
Solution 79
(a) A is carbon (C); B is carbon monoxide (CO) ; C is carbon dioxide (CO 2).
(b) 14 th group .
(c) Silicon (Si) .
Solution 80
(a) X is nitrogen gas, N_2 ; Y is ammonia gas, NH_3 and Z is

ammonium sulphate, $(NH_4)_2SO_4$.
(b) 15 th group .
(c) 2 nd period.
(d) Carbon, C .
(e) Oxygen, O.

********** END **********