

Model Question paper
Chemical Bonding 3

11th Standard

Chemistry

Reg.No. :

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I. Answer all the questions.

II. Use blue pen only.

Time : 01:20:00 Hrs

Total Marks : 40

Part -A

2 x 1 = 2

- 1) The crystal lattice of electrovalent compounds is composed of
(a) Atoms (b) Molecules (c) Oppositely charged ions (d) Both molecules and ions
- 2) The compound which contains both ionic and covalent is
(a) CH_4 (b) H_2 (c) KCN (d) KCl

Part -B

4 x 2 = 8

- 3) Arrange NaCl , MgCl_2 and AlCl_3 in the increasing order of covalent character.
- 4) Find σ and π bonds in the following:
 $\text{CH}_3 - \text{CH}_3$, $\text{CH}_2 = \text{CH}_2$, $\text{CH} \equiv \text{CH}$
- 5) Write the differences between electrovalent and covalent bonds.
- 6) sp^3 hybridisation is involved in CH_4 , H_2O and NH_3 . Why are the bond angles different in three cases?

Part -C

5 x 3 = 15

- 7) What is octet rule? Explain with an example.
- 8) What are the different types of bonds?
- 9) Give the electron dot representation for PH_3 and ethane.
- 10) What is meant by hybridisation?
- 11) Define resonance. Give the various resonance structures of CO_2 and CO_3^{2-} ion.

Part -D

3 x 5 = 15

- 12) Discuss the important properties of electrovalent compounds.
- 13) Explain the formation and difference between a sigma bond and a pi bond. Which has more bond strength?
- 14) Calculate the lattice enthalpy of CaCl_2 given that the enthalpy:
Ionisation of Ca to Ca^{2+} is 2422 kJ mol^{-1}
