B. Sc. Part I (Semester – I) (CBCS) (NEP2020) Examination Oct/Nov 2023
Subject Code: 88180
Inorganic Chemistry - Paper No-I

Day and Date: Wednesday 01/11/2023   Total Marks : 40
Time: 02.30 p.m. to 04.30 p.m.

Q1) Select the correct alternative from the following :   **[08]**

i) According to Arrhenius , acid is the substance which dissociate to give------when dissolved in water.

    A) H^+ B) OH^- C) Cl^- D) O^{2-}

ii) The 2s, 2p subshells are present in ------------ shell.

    A) O   B) K   C) L   D) M

iii) Ammonia is ----------

    A) Hard Acid   B) Hard Base   C) Soft Base   D) Soft Acid

iv) ------------ molecule show sp^2 hybridisation.

    A) BF_3 B) CH_4 C) $SiCl_4$ D) PCl_5

v) The electrostatic force of attraction between oppositely charged ions is known as -------bond.

    A) Chemical   B) Ionic   C) Covalent   D) Metallic

vi) Elements in which last electron enters the ------orbitals called as p- block elements.

    A) s   B) d   C) p   D) f

vii) The s, p, d, f subshells are present in ------------ principle quantum no.

    A) 2nd B) 5th C) 4th D) 3rd

viii) $X + e^- \rightarrow X^-$ (anion) + energy
In the above reaction, energy released is known as..........
    A) sublimation energy   B) dissociation energy
    C) ionization energy   D) electron affinity

Q2) Attempt any two of the following: **[16]**
    a) Discuss Born- Haber Cycle for sodium chloride.
    b) Define hybridisation. Explain the formation of beryllium chloride on the basis of hybridisation.
    c) What are quantum numbers. Explain any two in details.

Q3) Attempt any four of the following: **[16]**
    a) Define Lewis acid & Lewis base. give their examples.
    b) Explain the position of p-block elements in periodic table.
    c) Define & Explain Co-ordinate bond.
    d) State & Explain Fajan's rule.
    e) Heisenberg Uncertainty principle
    f) Define sp^2 hybridisation. Explain trigonal planer hybridisation.

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