

ESKPIX-XXV (I)
SSC-(P-I)
CHEMISTRY – 9th

Time: 2 Hours 40 Minutes

SECTION "B"

Marks: 32

Q.2. Attempt any EIGHT (08) questions. All questions carry equal marks.

- i. Identify elements, compounds and mixture among the following. Give suitable reason of your selection.
 - a) Antimony
 - b) Methane
 - c) Sand and water
 - d) Bronze
- ii. Write the main assumptions of Bohr's atomic model that address the limitations of Rutherford's atomic model.
- iii. Which atom in each of the following sets has greater atomic radii and why?
 - a) Li, Na, K
 - b) B, C, N
 - c) K, Ca, Ga
- iv. How many valance electrons are present in given elements:
 - a) Radon
 - b) Chlorine
 - c) Lithium
 - d) Hydrogen
- v. What is the key difference between the bonding N₂ and Fe metal? Give suitable reason.
- vi. Define boiling point. What happens to the temperature of the liquid during boiling?
- vii. Calculate molarity of 5.3 g of sodium carbonate dissolved in 100 ml of solution.
- viii. How pressure affects the solubility of liquids, solids and gases?
- ix. What are electrodes? And what role do they play in an electrolytic cell?
- x. Write reactions involving in electrolytic purification of metals.
- xi. Write characteristic reaction of metals that explain their metallic character.

SECTION "C"

Marks: 21

Note: Attempt any THREE (03) questions. All questions carry equal marks.

- Q.3.**
- a) How many moles of HCl are in 3.01×10^{23} molecules of HCl?
 - b) Write electronic configuration of following elements in their sub-shells.
 - i. Magnesium
 - ii. Nitrogen
 - iii. Sodium
 - iv. Carbon
- Q.4.**
- a) To which block in periodic table, the elements of following groups belong.
 - i. Group IIIA to Group VIIIA
 - ii. Group IA and II A
 - iii. Group IIIB to VIIIB
 - b) Draw Lewis structure of following compounds.
 - i. O₂
 - ii. CO₂
 - iii. CH₄
 - iv. N₂
- Q.5.**
- a) What is the effect of temperature on allotropes? Show with the help of an example.
 - b) A mixture of gases contains 20g of oxygen in 50ml of air. Calculate percentage composition by mass by volume.
- Q.6.**
- a) Identify the oxidizing and reducing in the given reaction justify your answer with reference to oxidation number.
$$\text{Zn} + \text{H}_2\text{SO}_4 \rightarrow \text{ZnSO}_4 + \text{H}_2$$
 - b) Differentiate between pure and alloying gold.