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Time Allowed: 3 Hrs

Marks: 1

Note: There are Three Sections in this paper i.e. A, B and C. Attempt Section A and return it to the Superintendent within the given time. 1 marks will be awarded for Cutting, Erasing and Overwriting.

Mobile Phone is strictly prohibited in Examination Hall.

Time: 15 Minutes

SECTION "A"

Marks: 1

Q.1. Choose the correct option and shade one of (A, B, C, D) in the given Bubble Answer Sheet.

I. Which symbol is used to show a reversible reaction?

☐ A $\rightarrow$ ☐ B $\rightleftharpoons$ ☒ C $\rightleftharpoons$ ☐ D $\leftarrow$

II. When HCl dissolves in water, it produces:

☐ A OH⁻ ions☒ B H⁺ ions + Cl⁻ ions☐ C Na⁺ ions☐ D Cl⁻ ions

III. Dimethyl ether (CH₃OCH₃) and ethanol (C₂H₅OH) both have same:

☐ A Structural formula☐ B Condensed formula☐ C Lewis dot-cross formula☒ D Molecular formula

IV. Which one of the following is an example of a straight-chain alkane?

☐ A Isobutane☐ B Neopentane☒ C n-butane☐ D cyclopentane

v. What is the correct structural formula of butene (C₄H₈)?

☒ A CH₃-CH=CH-CH₃☐ B CH₂=CH-CH₂-CH₃☐ C CH₃-C $\equiv$ C-CH₂-CH₃☐ D CH₂-CH=CH-CH₃

vi. Which of the following is a plant source of protein?

☐ A Egg☐ B Fish☒ C Pulses☐ D Milk

vii. Temperature decreases from 15°C to -56°C with height in the:

☐ A Thermosphere☐ B Mesosphere☒ C Stratosphere☐ D Troposphere

viii. Normal rainwater has a pH of about:

☐ A 7☐ B 6☒ C 5.6☐ D 4

ix. Soft water is good for:

☒ A Washing clothes☐ B Making scale in kettle☐ C Causing scum with soap☐ D Hardening water

x. Boiling water removes hardness because:

☐ A It kills bacteria☒ B It converts bicarbonates into insoluble carbonates☐ C It increases solubility of salts☐ D It adds oxygen

xi. The impurities attached with the ores are called:

☐ A Ore☐ B Mineral☒ C Gangue☐ D Sand

xii. Hydrogen makes up approximately what percentage of urea?

☐ A 46.67%☐ B 26.67%☐ C 20.00%☒ D 6.66%

ESKPX-XXVI (I)
SSC-(P-II)
CHEMISTRY – 10th

Time: 2 Hours 45 Minutes

SECTION "B"

Marks: 32

Note: Attempt any EIGHT (08) questions. All questions carry equal marks.

- Q.1. State any four factors that must remain constant for equilibrium to exist. 1+1+1+1
- Q.2. Identify the following in the reaction:
 $CH_3COOH + H_2O \rightleftharpoons CH_3COO^- + H_3O^+$ according to Bronsted-Lowry theory:
 a) Acid
 b) Base
 c) Proton donor
 d) Proton acceptor 1+1+1+1
- Q.3. Compare the chemical reactivity and general formula of saturated and unsaturated hydrocarbons. 2+2
- Q.4. Differentiate between a carbonyl compounds and carboxylic acid with respect to their functional groups and general formulas. 2+2
- Q.5. Write balance chemical equation for the preparation of propene from 2-bromopropane. Write name of the reaction and conditions required. 2+1+0.5+0.5
- Q.6. How are sucrose and lactose different in terms of:
 a) nature of monosaccharides
 b) hydrolysis behavior 2+2
- Q.7. Write the names of eight vitamins which comprise vitamin-B complex. 0.5 X 8=4
- Q.8. Differentiate between primary and secondary pollutants with two examples each. 2+2
- Q.9. Write the physical properties of pure water in terms of:
 a) Freezing point
 b) Boiling point
 c) Latent heat of fusion
 d) Latent heat of vaporization 1+1+1+1 = 4
- Q.10. Write names of any two fractions of petroleum with one use each. 1+1+1+1
- Q.11. Describe the organic origin theory of the formation of petroleum in four points. 1+1+1+1

SECTION "C"

Marks: 21

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

- Q.12. a) Write the following four formulae of hexane:
 a). Molecular b). Condensed c). Structural d). Dot-cross 1+1+1+1
- b) Write the equilibrium constant expression for:
 $CO_{(g)} + H_2O_{(g)} \rightleftharpoons CO_{2(g)} + H_{2(g)}$ Identify reactants and products in the expression. 2+1
- Q.13. a) What is ozone layer depletion? Explain any three effects of ozone layer depletion. 1+1+1+1
- b) Define Lewis acid and base. Identify the Lewis acid and base in the reaction:
 $BF_3 + NH_3 \rightarrow BF_3 \cdot NH_3$ 1+1+1
- Q.14. a) Give any two uses of water in each of the following:
 (i). Industries (ii). Irrigation 2+2
- b) Write a chemical equation showing the formation of ethyne from 1,2-dichloroethane by dehalogenation. 1+1+1
- Q.15. a) Show with balanced equations how are carbon dioxide and slaked lime prepared in a limekiln. Explain their use in Solvay's process. 1+1+2
- b) What are fats? Differentiate between fats and oils on the basis of source and physical state. 1+1+1