ZIAUDDIN UNIVERSITY
EXAMINATION BOARD

Total Time 3.5 hours
Total Marks: 75

Class: X **MODEL PAPER EXAMINATION 2025**
Time Allowed: 35 minutes **SUBJECT: CHEMISTRY**
Q1: **(SECTION "A")** **Marks: 12**

Note: Attempt **ALL** questions from section 'A'. Each question carries **ONE** mark.

1. What percentage of fresh water is found on Earth's surface?
   A. 0.3 B. 3% C. 0.2% D. 2%
2. Citric acid is added to cold drinks for its:
   A. Sweet taste B. Salty taste C. Sour taste D. Bitter taste
3. Which layer of the atmosphere is directly below the stratosphere??
   A. Troposphere B. Mesosphere C. Stratosphere D. Exosphere
4. What is the name of the method used to measure physical properties?
   A. Combustion analysis method B. Atomic emission spectroscopy method
   C. Volumetric analysis method D. Gravimetric analysis method
5. What is the primary cause of ozone layer depletion?
   A. Release of CO B. Release of CFC C. Release of CO2 D. Release of CH4
6. A centrifuge machine is primarily used to separate and analyse:
   A. Juice B. Ph C. Mud D. Crystal
7. The spectroscopic technique is classified as _____ method.
   A. Instrumental B. Radioactive C. Gravimetric D. Titrimetric
8. Chromatography is a physical technique used to separate and analyse:
   A. Simple mixtures B. Complex mixtures C. Viscous mixtures D. Mixtures
9. The rate of a chemical reaction is directly proportional to the product of the molar concentration of:
   A. Reactants B. Products C. Both reactants and products D. None of these
10. What health issue results from a deficiency of vitamin D?
    A. Beriberi B. Rickets C. Scurvy D. Hemorrhage
11. What is the primary source of organic compounds?
    A. Animal B. Fossil C. Coal D. Plants
12. Which of the following is not considered a greenhouse gas?
    A. Carbon dioxide B. Methane C. Nitrous oxide D. Oxygen

(Practical Based Assessment) **Marks: 15**

Q2: Attempt **ALL** questions.

1. Sara is testing three different household liquids using a digital pH meter. She records the following hydrogen ion concentrations:

A. Vinegar: $[H^+] = 1 \times 10^{-3}$ mol/L

B. Soap solution: $[OH^-] = 1 \times 10^{-5}$ mol/L

C. Distilled water: $[H^+] = 1 \times 10^{-7}$ mol/L

A. Calculate the pH of each solution. *(Use: pH = -log[H⁺])* (3 marks)
B. Classify each solution as acidic, basic, or neutral. (2 marks)

2. Hamza visits a supermarket and finds that many everyday products contain organic compounds. He notes the following items:
   - Ethanol-based hand sanitizer
   - Polyethylene packaging
   - Aspirin tablets
   - Diesel fuel
   - Sugar (sucrose)

   A. Identify which organic compound class (e.g., alcohols, hydrocarbons, esters, etc.) each product belongs to and state one use for each. Write short but specific answers. (5 marks)

3. Areeba is learning about sugars in different fruits and food items. She reads the labels and finds:
   - Glucose in grapes
   - Lactose in milk
   - Raffinose in beans

   A. Identify which is a mono-, di-, and tri-saccharide. (2 marks)
   B. Mention one food source for each type of saccharide. (3 marks)

END OF SECTION A

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Total Time 3.5 hours
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Class: X
Time: 2 hours 55 minutes

MODEL PAPER EXAMINATION 2025

SUBJECT: CHEMISTRY (SECTION "B" AND SECTION "C") — **Total Marks 48**

SECTION "B" (SHORT ANSWER QUESTIONS) — 24 Marks

Note: Answer any **EIGHT** questions from this section. Each question carries **THREE** marks.

Q3. Explain why chemical equilibrium is considered dynamic.
Q4. What is meant by quantitative analysis in chemistry?
Q5. State the law of mass action and explain how the active mass is represented.
Q6. Differentiate between titrimetric analysis and gravimetric analysis.
Q7. Define the following terms:
i) Soft water ii) Hard water
Q8. What are nucleic acids, and what role do they play in living organisms?
Q9. Find pH, Poh, $[OH^-]$ and $[H^+]$ of 2.46 x $10^{-9} M\ KOH$ solution.
Q10. Create a table listing the molecular, structural, and condensed formulae for the following compounds.
Q11. For the reaction of Sulphur dioxide and oxygen to form Sulphur trioxide, the balanced reversible reaction is:

$$2SO_{2(g)} + O_{2(g)} \leftrightharpoons O2_{3(g)}$$

By applying law of mass action, write down the expression for equilibrium constant Kc.
Q12. Determine whether the following solutions are acidic, basic, or neutral based on their given concentrations:
A solution that has $[H^1] = 1x10^{-4} mol.dm^3$
A solution that has $[H^+] = 1x10^{-11} mol.dm^3$
A solution that has $[OH] = 1x10^{-9} mol.dm$
A solution that has $OH] = 1x10^{-3} mol.dm^{-3}$
Q13. A 12 dm³ vessel containing PCl_5 is heated to 250°C. At equilibrium, the vessel holds 0.21 moles of PCl_5, 0.32 moles of PCl_3, and 0.3 moles of Cl_2. Calculate the equilibrium constant for the reaction.

SECTION "C" (DETAILED ANSWER QUESTIONS) — 24 Marks

Note: Answer any **FOUR** questions from this section. Each question carries **SIX** marks.

Q14. Define dynamic equilibrium and provide two examples to illustrate it.
Q15. Explain how different solutions behave in aqueous systems, providing detailed examples.
Q16. What are salts? Discuss their preparation methods and the different types of salts.
Q17. Explain gas chromatography in detail, including its principles and applications.
Q18. Differentiate between saturated and unsaturated hydrocarbons with examples.
Q19. Identify the names of alkenes and alkynes corresponding to the following molecular formulas:
a) C_2H_4 b) C_3H_4 c) C_3H_6 d) C_6H_{12} e) C_5H_8 f)C_8H_{16}

END OF PAPER