

## Class: X

**Time Allowed: 20 minutes**

## **MODEL PAPER EXAMINATION 2026**

## **SUBJECT: CHEMISTRY**

**(SECTION “A”)**

**Marks: 11**

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

## **(Practical Based Assessment)**

**Marks: 16**

Q2: Attempt **ALL** questions.

1. Sara is testing three different household liquids using a digital pH meter. She records the following hydrogen ion concentrations:
  - Vinegar:  $[H^+] = 1 \times 10^{-3}$  mol/L
  - Soap solution:  $[OH^-] = 1 \times 10^{-5}$  mol/L
  - Distilled water:  $[H^+] = 1 \times 10^{-7}$  mol/L
  - Calculate the pH of each solution. (Use:  $pH = -\log[H^+]$ ) (3 marks)
  - 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)
  - 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
  - Identify which is a mono-, di-, and tri-saccharide. (3 marks)
  - Mention one food source for each type of saccharide. (3 marks)

**Class: X****Time: 2 hours 40 minutes**
**MODEL PAPER EXAMINATION 2025**  
**SUBJECT: CHEMISTRY (SECTION "B" AND SECTION "C")**  
**SECTION "B" (SHORT ANSWER QUESTIONS)**
**Total Marks 48**  
**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:

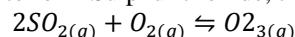
i) Soft water                    ii) Hard water

Q8. What are nucleic acids, and what role do they play in living organisms?

Q9. Find  $pH$ ,  $P_{OH}$ ,  $[OH^-]$  and  $[H^+]$  of  $2.46 \times 10^{-9} M KOH$  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:



By applying law of mass action, write down the expression for equilibrium constant  $K_c$ .

Q12. Determine whether the following solutions are acidic, basic, or neutral based on their given concentrations:

A solution that has  $[H^+] = 1 \times 10^{-4} mol. dm^{-3}$

A solution that has  $[H^+] = 1 \times 10^{-11} mol. dm^{-3}$

A solution that has  $[OH^-] = 1 \times 10^{-9} mol. dm^{-3}$

A solution that has  $[OH^-] = 1 \times 10^{-3} mol. dm^{-3}$

Q13. A  $12 \text{ dm}^3$  vessel containing  $PCl_5$  is heated to  $250^\circ\text{C}$ . 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. Your answer should not exceed 20 - 30 lines.

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**