


**Class: X SECONDARY SCHOOL CERTIFICATE MODEL PAPER 2026**
**Time Allowed: 30 minutes**
**SUBJECT: CHEMISTRY**
**Q1: SECTION "A" (MULTIPLE CHOICE QUESTIONS)**
**Marks: 12**
**Note:** Attempt **ALL** questions from section "A". Each question carries **ONE** mark.

- i. What is the unit of  $K_c$  for the reaction  $N_2 + O_2 \rightleftharpoons 2NO$ ?  
 A.  $\text{mol dm}^{-3}$       B.  $\text{mol}^{-2} \text{dm}^6$       C.  $\text{mol}^{-1} \text{dm}^3$       D. No unit
- ii. The type of error caused by improper functioning of an instrument is called:  
 A. Determinant error    B. Indeterminant error    C. Systematic error      D. Both A and C
- iii. A substance that donates an electron pair to form a coordinate covalent bond is:  
 A. Lewis acid      B. Lewis base      C. Brønsted–Lowry acid      D. Brønsted–Lowry base
- iv. The pH of a neutral solution is:  
 A. 1      B. 7      C. 10      D. 14
- v. Which of the following is a major cause of global warming?  
 A. Presence of sulphites    B. Increase in  $\text{CO}_2$  levels    C. Oxides of nitrogen      D. Formation of ozone
- vi. Which of the following is an example of a strong acid?  
 A. Acetic acid      B. Carbonic acid      C. Hydrochloric acid      D. None of these
- vii. Polythene is a type of:  
 A. Oil      B. Paper      C. Plastic      D. Wood
- viii. An average human being drinks approximately how much water daily?  
 A. 5 litres      B. 2 litres      C. 1 litre      D. 10 litres
- ix. Carbohydrates containing an aldehyde group are called:  
 A. Saccharides      B. Ketoses      C. Pentoses      D. Aldoses
- x. Citric acid is used in beverages to give a:  
 A. Sweet taste      B. Bitter taste      C. Sour taste      D. Salty taste
- xi. What type of bond is formed between water ( $\text{H}_2\text{O}$ ) molecules?  
 A. Hydrogen bond      B. Ionic bond      C. Covalent bond      D. None of the above
- xii. The depletion of the ozone layer is mainly caused by:  
 A. Ferrocene      B. Fullerenes      C. Freons      D. Polyhalogens

**(Practical Based Assessment)**
**Marks: 15**
**Q2:** Attempt **ALL** questions.

- i. A student tests an unknown clear liquid with blue litmus paper, and it immediately turns red. The pH of this liquid is most likely:  
 A. 7      B. 10      C. 3      D. 14
- ii. While standardizing an HCl solution using NaOH in a burette, a student uses phenolphthalein as an indicator. The end-point is reached when the solution permanently turns:  
 A. Colorless      B. Pink      C. Yellow      D. Red
- iii. A farmer wants to neutralize highly acidic soil in his field to improve crop yield. Which substance should he spread over the soil?  
 A. Vinegar      B. Table salt      C. Nitric acid      D. Slaked lime
- iv. A student drops a piece of magnesium ribbon into a test tube containing dilute sulfuric acid. Bubbles of a colorless gas rapidly form. This gas is:  
 A. Oxygen      B. Carbon dioxide      C. Hydrogen      D. Chlorine
- v. When baking a cake, baking soda (sodium bicarbonate) is used. It reacts with acidic ingredients to make the cake rise by producing bubbles of:  
 A. Oxygen gas      B. Nitrogen gas      C. Hydrogen gas      D. Carbon dioxide gas
- vi. A lab technician needs to prepare a buffer solution that resists sudden changes in pH. They should mix a weak acid with its:  
 A. Strong acid      B. Indicator      C. Distilled water      D. Conjugate base (salt)
- vii. To treat a painful wasp sting (which is alkaline), a common first-aid home remedy is to apply:  
 A. Baking soda paste    B. Soap solution      C. Vinegar (Acetic acid)      D. Ammonia
- viii. A student evaporates a blue copper(II) sulfate solution in an evaporating dish until completely dry. The resulting powder turns white because it has lost its:  
 A. Copper ions      B. Sulfate ions      C. Acidic properties      D. Water of crystallization



- ix. In a titration experiment, a student notices a parallax error while reading the lower meniscus of the acid in the burette. This means they read the volume:
- A. Without an indicator  
 B. By looking from an angle above or below eye level  
 C. Using the wrong formula  
 D. While the burette was leaking
- x. A metallic statue placed outdoors in an industrial city rapidly deteriorates due to "acid rain". The primary acids responsible for this are:
- A. Hydrochloric and acetic acid  
 B. Sulfuric and nitric acid  
 C. Citric and tartaric acid  
 D. Phosphoric and carbonic acid
- xi. A student adds a few drops of iodine solution to a slice of raw potato. The potato immediately turns blue-black, indicating the presence of:
- A. Lipids  
 B. Proteins  
 C. Starch  
 D. Vitamin C
- xii. To test for the presence of proteins in a milk sample, a lab technician performs the Biuret test. A positive result is indicated by the formation of which color?
- A. Brick-red  
 B. Purple  
 C. Orange  
 D. Colorless
- xiii. When a student accidentally spills vegetable oil on a piece of brown paper, it leaves a permanent translucent spot. This is a simple physical test confirming the presence of:
- A. Carbohydrates  
 B. Amino acids  
 C. Lipids (Fats/Oils)  
 D. Nucleic acids
- xiv. A diabetic patient needs a quick source of energy during a low blood sugar episode. They are advised to consume glucose because, unlike complex carbohydrates, it:
- A. Cannot be digested  
 B. Acts as an enzyme  
 C. Is a protein  
 D. Is immediately absorbed into the bloodstream without further breakdown
- xv. During a biology lab, a student subjects an enzyme to boiling water. The enzyme completely loses its catalytic ability because the high heat has:
- A. Activated it  
 B. Denatured its protein structure  
 C. Turned it into a lipid  
 D. Increased its concentration

**END OF SECTION A**

**Class: X**                      **SECONDARY SCHOOL CERTIFICATE MODEL PAPER 2026**  
**Time: 2 hours 30 minutes**    **SUBJECT: CHEMISTRY (SECTION "B" & SECTION "C")**  
**SECTION "B" (SHORT ANSWER QUESTIONS)**

**Total Marks 48**  
**24 Marks**

Q3: Answer any **EIGHT** questions from section.

- i. Write any three significant functions of carbohydrates in living organisms.
- ii. State three major differences between the troposphere and the stratosphere.
- iii. Define the following terms:
  - a. Analytical Chemistry
  - b. Qualitative Analysis
  - c. Quantitative Analysis
- iv. Complete the following neutralization reactions:
  - a.  $\text{KOH} + \text{HNO}_3 \rightarrow \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$
  - b.  $\text{NaOH} + \text{HCl} \rightarrow \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$
  - c.  $\text{Ca}(\text{OH})_2 + \text{H}_2\text{SO}_4 \rightarrow \underline{\hspace{2cm}} + \underline{\hspace{2cm}}$
- v. Give reasons for the following:
 

Why does carbon form more compounds than silicon?

Why is pure water considered a weak electrolyte?
- vi. Identify the functional group present in each of the following compounds:
  - i.  $\text{CH}_3\text{CHO}$
  - ii.  $\text{CH}_3\text{CH}_2\text{OH}$
  - iii.  $\text{C}_3\text{H}_7\text{COOH}$
- vii. If the hydrogen ion concentration  $[\text{H}^+]$  of a solution is  $1 \times 10^{-8} \text{ mol.dm}^{-3}$ , calculate the pH of the solution.
- viii. A solution of  $\text{H}_2\text{SO}_4$  has a pH of 1.5. Calculate its pOH and hydrogen ion concentration  $[\text{H}^+]$ .
- ix. At a certain temperature, the concentrations in a reaction mixture are:  $[\text{HI}] = 2 \times 10^{-5} \text{ mol/dm}^3$ ,  $[\text{H}_2] = 1 \times 10^{-5} \text{ mol/dm}^3$ , and  $[\text{I}_2] = 1 \times 10^{-5} \text{ mol/dm}^3$ . Determine the direction in which the reaction will proceed.
- x. For the reaction  $\text{N}_2\text{O}_4 \rightleftharpoons 2\text{NO}_2$ , calculate the unit of the equilibrium constant (Kc).
- xi. State any two limitations of Arrhenius theory of acids and bases.
- xii. Justify the use of indicators during acid-base titrations.

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

Q4: Answer any **FOUR** questions from this section.

- i. Illustrate the saponification process using a flowchart and explain the chemical change that occurs.
- ii. Describe the basic principle of gas chromatography. Draw its apparatus and mention two of its practical applications.
- iii. Analyze the role of lipids in human metabolism. Compare how the properties of fats and oils affect health and shelf life.
- iv. Apply the law of mass action to a chemical equilibrium scenario. Evaluate how a change in temperature would affect the equilibrium position.
- v. Propose practical ways to reduce ozone layer depletion. Evaluate the success of international measures taken to protect the ozone layer.
- vi. What are carbohydrates? Describe their common sources and mention their significant uses.

**END OF PAPER**