

chemistry practical viva questions answers for class 12

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Introduction

Every Class /12 chemistry student knows that the practical component is not just a routine lab exercise; it is a critical part of the curriculum that tests your understanding of concepts, safety awareness, and experimental skills. The **chemistry practical viva questions answers for class /12** are designed to assess how well you can articulate the purpose, procedure, and analysis of laboratory work. In this guide, we'll walk through the most common viva questions, provide comprehensive answers, and share strategies to ace your viva with confidence.

Why Chemistry Practical Viva Matters in Class /12

The practical viva is the bridge between theory and application. It evaluates:

- Knowledge of safety protocols and ethical conduct.
- Proficiency in laboratory techniques.
- Ability to interpret data and draw meaningful conclusions.
- Critical thinking and problem solving skills.

Mastering these aspects not only boosts your marks but also equips you for future scientific pursuits.

Common Themes in Class /12 Chemistry Practical Viva

Safety and Ethics

Questions often probe your familiarity with the **Safety Data Sheets (SDS)**, first aid measures, and proper disposal of hazardous waste. Demonstrating a clear understanding of ethical responsibilities in the lab is essential.

Lab Techniques and Procedures

Expect queries about standard operating procedures, measurement accuracy, calibration of instruments, and the rationale behind each step of an experiment.

Data Analysis and Interpretation

Viva sessions test your ability to analyze graphs, calculate percentages, and explain trends in a logical, scientific manner.

Experimental Design and Troubleshooting

Interviewers often ask you to design an experiment or troubleshoot a failed procedure, assessing your creative problem solving skills.

Top Chemistry Practical Viva Questions and Answers for Class /12

General Viva Questions

The Bunsen burner provides a controllable, uniform flame that is essential for heating reagents, drying samples, and performing combustion reactions. Its adjustable air fuel mixture allows precise temperature control, which is critical for reproducibility and safety.

First, neutralise the acid by adding a dilute base slowly while stirring. Once the pH is neutral (around 7), filter to remove solids. Dispose of the clear solution in the designated hazardous waste container. Always label the container with the waste type and follow institutional disposal guidelines.

Calibration ensures the meter provides accurate readings across the desired pH range. Without calibration, measurements can be off by significant margins, leading to erroneous conclusions about solution acidity or basicity.

Sodium reacts violently with water and can ignite spontaneously in air. Store it under mineral oil, handle it with tweezers in a dry, inert atmosphere, and keep a fire extinguisher rated for metal fires nearby. Always wear eye protection and gloves.

Inorganic Chemistry Viva Questions

First, convert the metal to a stable compound (e.g., oxalate). Filter, wash, and dry the precipitate. Then, convert it to a measurable form (e.g., carbonate) and weigh it. By comparing the theoretical mass of the compound with the measured mass, you calculate the metal's purity.

Potassium permanganate is a strong oxidising agent with a known concentration. It serves as the titrant in redox titrations, allowing precise determination of the concentration of reducing agents in a sample based on the endpoint where the solution just turns pink.

After dissolving the sample in water, add dilute sulphuric acid and a few drops of silver nitrate. A white precipitate of silver chloride indicates the presence of chloride ions. Confirm by adding dilute ammonia; the precipitate dissolves if chloride is present.

A primary alcohol has the hydroxyl group attached to a carbon bonded to only one other carbon or hydrogen atom. A secondary alcohol's hydroxyl group attaches to a carbon bonded to two other carbons. This difference affects their reactivity and the types of oxidation reactions they undergo.

Organic Chemistry Viva Questions

Oxidise the primary alcohol using a mild oxidising agent like PCC (pyridinium chlorochromate) or an oxidising resin. The reaction stops at the aldehyde stage, preventing further oxidation to a carboxylic acid.

Treat the compound with bromine water. If the colour of the solution changes from orange to clear, the compound contains a double bond. This test is a quick qualitative check for unsaturation.

Alkanes are saturated hydrocarbons with only single C–C bonds, whereas alkenes contain at least one C=C double bond. This structural difference gives alkenes distinct reactivity patterns such as addition reactions.

Stereochemistry determines the spatial arrangement of atoms, influencing reactivity, selectivity, and biological activity. For instance, the R and S configurations can lead to different pharmacological effects in drug molecules.

Physical Chemistry Viva Questions

Molarity (M) = moles of solute ÷ liters of solution. Measure the solute's mass, convert to moles using its molar mass, and divide by the total solution volume.

Titration involves adding a titrant of known concentration to a solution of unknown concentration until an indicator signals the endpoint. By knowing the titrant's volume and concentration, you calculate the unknown concentration.

The Van't Hoff factor accounts for the number of particles a solute dissociates into. It adjusts calculations of boiling point elevation, freezing point depression, and osmotic pressure, making predictions accurate for electrolytes.

K is the ratio of product concentrations to reactant concentrations at equilibrium, each raised to the power of their stoichiometric coefficients. It quantifies the extent of a reversible reaction.

Practical Safety and Ethics Questions

Immediately rinse the area with copious amounts of water for at least 15 minutes, remove contaminated clothing, and seek medical attention. Do not use neutralising agents on the skin.

Turn off all ignition sources, use a fire extinguisher rated for flammable liquids (Class B), or cover the spill with a fire blanket. Never use water, as it spreads the flame.

Data manipulation undermines scientific integrity, misleads peers, and can lead to faulty conclusions. Academic and professional standards require accurate and honest reporting.

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