CBSE Class 11 Chemistry Viva Questions: The CBSE Class 11 Chemistry Viva Questions are created to assess students' understanding of the practical aspects of chemistry. These questions cover a variety of experiments and theoretical concepts that students have learned throughout the year.

The viva primarily tests a student's ability to explain the procedures of different experiments, their observations, and the scientific principles behind them. To secure good marks in the viva, students should thoroughly revise their lab work, practice explaining their observations clearly, and be well-versed with the theoretical concepts linked to each experiment. Understanding the correct use of lab equipment and safety protocols is essential for a successful viva performance.

CBSE Class 11 Chemistry Viva Questions

Class 11 Chemistry viva voce questions and answers focus on testing the understanding of key concepts and principles behind the practicals performed in the lab, rather than simply recalling the questions. This approach helps students deepen their conceptual knowledge and gain confidence in applying the theory learned in class to real-life experiments.

A viva voce is based on the practicals conducted in the laboratory, with questions designed to assess whether the student has a thorough understanding of the experiment and its underlying concepts. Class 11 Chemistry Practical Viva Voce questions and answers are not just about memorizing steps, but rather, demonstrating a clear understanding of the processes, reactions, and safety protocols involved. Students should regularly revise the concepts related to each experiment to ensure they can confidently respond to any related question in the viva. This continuous revision will help students recall the necessary details and perform better in the viva voce exam.

CBSE Class 11 Chemistry Viva Questions 2025 PDF

The CBSE Class 11 Chemistry Viva Questions 2025 PDF provides a detailed collection of questions and answers based on the practicals conducted in the laboratory. This resource is designed to help students thoroughly understand the experiments and their underlying concepts.

By referring to this PDF, students can effectively prepare for their viva voce exam, ensuring they can confidently explain the procedures, observations, and scientific principles involved in each experiment. The link to download the PDF is available below for easy access.

CBSE Class 11 Chemistry Viva Questions 2025 PDF

CBSE Class 11 Chemistry Viva Questions with Answers

The Class 11 Chemistry Viva Voce is an important part of the practical examination. It evaluates the student's understanding of basic laboratory techniques, characterization, purification, chemical equilibrium, quantitative estimations, and qualitative analysis. The questions are designed to test the student's practical knowledge and the application of theoretical concepts. Below are some common viva questions and answers from various sections.

Basic Laboratory Techniques

Cutting Glass Tube and Glass Rod

Q1: Why glass does not possess a sharp melting point?

Answer:

Glass is an amorphous solid crystalline structure possessing densely packed molecules. As a result, glass does not have a very high melting point.

Q2: Mention the various steps which are involved in the cutting of a glass tube.

Answer:

- Scratching
- Breaking
- Heating the cut edges
- Cooling

Q3: Which type of glass softens easily?

Answer: Soda-lime glass

Q4: Why is it required to round off the freshly cut edges of the glass tube or the glass rod?

Answer:

Because sharp edges might cause harm when handled, the edges of glass tubes or rods are rounded off for safety and to offer a decent look with a smooth finish.

Q5: What are the precautions to be taken during the experiment?

Answer:

- In a single stroke/attempt, try to make a single deep scratch of the needed length.
- Please be careful when filling the glass tube/rod and breaking it.
- To achieve optimal balance, keep your face away from the glass tube/rod and hold it away with a piece of cloth.

Bending a Glass Tube

Q1: What type of flame would you use for general heating purposes?

Answer:

For general heating, a non-luminous oxidising flame is utilised since it produces the most heat due to the full burning of hydrocarbons.

Q2: Why is a broad flame used for bending a glass tube?

Answer:

If a narrow flame is used, folds are created at the bend.

Q3: What are the precautions to be taken during the experiment?

Answer:

- At the point of bending, heat the tube for at least 4-5 cm.
- Keep your face much further and hold the glass tube away.
- Never force the glass tube to bend. This may cause the tube to break.

Q4: Why does glass not possess a sharp melting point?

Answer:

Glass is an amorphous solid. The constituent particles are not arranged in a regular pattern. As a result, it lacks a sharp melting point.

Q5: Why should the tube be rotated while heating?

Answer:

While heating, the tube is rotated to achieve consistent heating on all sides.

Drawing Out a Glass Jet

Q1: Mention the various steps which are involved in drawing a glass tube into a jet.

Answer:

- Selecting the ideal tube
- Heating the centre of the glass tube
- Breaking
- Filing
- Cooling

Q2: What type of glass is preferred for drawing out a jet?

Answer:

Soda-lime glass is used in drawing out a jet.

Q3: Why is the glass tube of a small diameter chosen for drawing out a jet?

Answer:

Because a larger diameter tube would have to be stretched too far, a small diameter glass tube was chosen.

Q4: Why should the diameter of the borer be less than the diameter of the tube to be inserted in the hole?

Answer:

This is done to ensure that the tube fits tightly in the hole.

Q5: What is the role of glycerine in the process of boring?

Answer:

The borer is lubricated with glycerine. This provides a smooth hole on boring.

Boring a Cork

Q1: What are the steps involved in this process?

Answer:

- Marking the cork
- Bore half the cork on one side
- Bore the remaining half on another side
- Insert the tube in the hole drilled

Q2: Why should the diameter of the borer be less than the diameter of the glass tube that has to be inserted in the hole drilled?

Answer:

To hold the inserted tube firmly, the diameter of the borer should be less.

Q3: What is the role of glycerine in the process of boring?

Answer:

Glycerine makes the cork flexible and smooth, making it easy to bore.

Q4: What is the use of the borer in this process?

Answer:

Borer is used in drilling the hole of the required diameter.

Q5: Why is softening the cork important during boring?

Answer:

The cork must be softened because it hardens with time and exposure to air. Place the cork underwater to soften it. It will quickly become flexible.

Viva Questions

1. What is Crystallisation?

Answer:

Crystallisation is a process used to purify substances by separating solid particles from a solution. During this process, the particles arrange themselves into a structured lattice form, minimizing the system's energy.

2. What is water of Crystallisation?

Answer:

Water of crystallisation refers to the water molecules that become part of a crystalline structure during crystallisation. These molecules bond with the compound in a fixed ratio, helping the crystals form a specific shape and colour.

3. What are the steps of Crystallisation?

Answer:

The steps of crystallisation are:

- Heat a saturated solution of the substance to dissolve the solute.
- As the solvent evaporates, the solute will start to form.
- Once the solution cools, crystals of the solute will begin to form and accumulate.
- Filter out any remaining impurities, and the crystals are dried.
- The rate of cooling determines the size of the crystals; slower cooling yields larger crystals.

4. What are the methods used for purification?

Answer:

Some methods for purification include:

- Crystallisation
- Extraction
- Recrystallisation
- Filtration
- Chromatography
- Evaporation
- Distillation

5. What is the colour of benzoic acid crystals?

Answer:

Benzoic acid forms white, opaque crystals. The crystals are monoclinic, meaning they have three unequal axes.

6. What is the lattice and shape of a monoclinic crystal?

Answer:

Monoclinic crystals come in two forms: pinacoidal and prismatic. Their lattice consists of two unit cells: a primitive and a base-centred cell. The primitive cell has fractional lattice points at the corners, and the base-centred cell has a fractional lattice at the centre of the basal plane.

7. What is mother liquor?

Answer:

Mother liquor is the leftover solution after crystals have been removed during crystallisation. It is a saturated solution from which the desired component has crystallised out.

8. How to obtain crystals of alum?

Answer:

To obtain alum crystals, dissolve alum in warm water and keep adding more until no more can dissolve. Filter the solution, then let it cool. The rate of cooling determines the size of the alum crystals.

9. What is a saturated solution?

Answer:

A saturated solution is one where no more solute can dissolve in the solvent. Adding more solute will not result in dissolution. A saturated solution is created when enough solute is added to a solvent at a certain temperature, and no more can dissolve.

10. What is the application of Crystallisation?

Answer:

Crystallisation is used for:

- Purifying substances.
- Extracting pure alum from an impure solution.
- Purifying seawater.
- Manufacturing pharmaceutical products like co-crystals.

11. What is Kipp's waste?

Answer:

Kipp's waste is the mixture left after producing hydrogen sulphide (H_2S) gas, typically formed by the reaction between FeS and H_2SO_4. It consists mainly of $FeSO_4$ and unreacted diluted H_2SO_4.

12. How to form crystals of benzoic acid?

Answer:

To form crystals of benzoic acid, dissolve it in hot water until the solution becomes saturated. After filtering, allow the solution to cool, and the opaque white crystals will form.

13. What is seeding?

Answer:

Seeding is the process where a small crystal of the same substance is added to a supersaturated solution to initiate crystal formation. This speeds up the crystallisation process.

14. What is green vitriol?

Answer:

Green vitriol, or copperas, is the hydrated form of ferrous sulphate ($FeSO_4 \cdot 7H_2O$). It is used for treating iron deficiency and appears as blue-green crystals.

15. What happens when blue vitriol crystals are heated?

Answer:

When blue vitriol ($CuSO_4 \cdot 5H_2O$) is heated, it loses its water of crystallisation and becomes anhydrous copper sulphate ($CuSO_4$), as shown by the equation:
$CuSO_4 \cdot 5H_2O \rightarrow CuSO_4 + 5H_2O$.

16. What is sublimation?

Answer:

Sublimation is the process in which a solid directly transitions into a gas, bypassing the liquid phase. For example, when benzoic acid is heated, it undergoes sublimation.

17. What precautions should be taken during Crystallisation?

Answer:

The following precautions should be observed during crystallisation:

- Wash crystals to remove impurities.
- Stir the solution continuously to ensure proper dissolution of the solute.
- Allow the solution to cool naturally, avoiding artificial cooling methods.

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Marks Distribution for CBSE Class 11 Chemistry Viva Questions

The marks distribution for CBSE Class 11 Chemistry Viva Questions generally follows a structure that evaluates students on their understanding and practical knowledge. Although the exact distribution can vary, a breakdown might look like this:

1. **Experiment-based Questions** - 2-3 marks
   Questions related to the specific experiment conducted by the student. This tests their understanding of the experimental procedure, observations, and the conclusions drawn.
2. **Theoretical Knowledge** - 2-3 marks
   Questions testing the student's theoretical knowledge of the concepts behind the experiment or the chemistry involved. This could include concepts from physical, organic, or inorganic chemistry.
3. **Application of Concepts** - 1-2 marks
   Questions that require students to apply their theoretical knowledge to real-life situations or other related chemical processes.
4. **Precautions and Errors** - 1 mark
   Questions that focus on understanding the precautions to be taken during the experiment and the possible sources of error in the practical.

5. **Demonstration or Clarification** - 1 mark
   Sometimes, students may be asked to demonstrate or clarify the steps of the experiment, showing their hands-on understanding.

CBSE Class 11 Chemistry Viva Questions Preparation Tips

Preparing for the CBSE Class 11 Chemistry Viva is an important part of the practical exam, as it evaluates both your theoretical knowledge and your practical understanding. Here are some effective preparation tips to secure good marks in the viva:

1. **Understand the Basics of Experiments**

- **Know the purpose** of the experiments you conduct in the lab, and be able to explain why certain chemicals and procedures are used.
- **Review all the practicals** that are part of your syllabus. You should be able to discuss each experiment, including its purpose, steps, and expected results.
- **Understand the principles** behind the experiment. For example, if you're performing titrations, understand why you're using a particular indicator and the concept of equivalence points.

2. **Master Key Terms and Definitions**

- Be prepared to define terms and concepts such as neutralization, oxidation-reduction reactions, stoichiometry, and others that are commonly tested in the viva.
- You should be able to explain terms related to **chemical bonding**, **molarity**, **pH**, **concentration**, and **precipitation** reactions.

3. **Focus on the Safety and Precautions**

- **Know the precautions** you need to take for every experiment. Be ready to explain why each precaution is important.
- For instance, if you're working with acids or bases, you should be able to explain why you should wear gloves or how to safely handle the chemicals.

4. **Familiarize Yourself with Common Errors and How to Minimize Them**

- Understand the types of **errors** that might occur during the experiment (e.g., systematic and random errors).
- Be prepared to explain how these errors can affect the results and what steps can be taken to minimize them.

5. **Work on Your Observations**

- Be able to describe the **observations** you make during an experiment in detail. For example, what color changes you see in a titration, how the solution looks during a filtration process, etc.
- You might be asked about **unexpected results** or how changes in experimental conditions might affect the outcomes.

6. **Know the Theory Behind the Experiment**

- Be ready to discuss the **chemical reactions** involved in your experiment. For example, if you're doing a reaction between an acid and a base, you should be able to explain the **neutralization reaction**.
- Understand the **reaction mechanisms** and how they are applied in your experiment.

7. **Review Related Concepts from the Syllabus**

- Your viva may include questions that are **theoretically related** to the practical you are performing. For instance, if you're working on **acid-base titration**, questions could also be asked about **pH, pKa, and buffer solutions**.
- Study the theoretical chapters in your book that correspond to the experiments. Be able to answer questions from the relevant chapters like **chemical bonding**, **solutions**, and **thermodynamics**.

8. **Be Confident and Clear in Your Explanation**

- When explaining, **speak clearly and confidently**. Avoid unnecessary jargon, and focus on delivering precise answers.
- Practice explaining the experiments aloud so that you become comfortable discussing them.

9. **Learn Common Formulas and Units**

- Be prepared to write and explain formulas used during your experiments. Know the **units of measurement** for quantities like concentration, volume, mass, etc.

10. **Practice with a Peer or Teacher**

- Practicing **viva mock tests** with friends or teachers can help. You can simulate the exam environment by asking each other questions.
- It will also help you understand the **type of questions** you might be asked and how to respond quickly and correctly.

11. **Be Prepared for Application-Based Questions**

- Be ready for questions that test your ability to **apply knowledge** to new situations. For example, you might be asked, "How would you determine the concentration of a solution if the experiment is not available to you?"

- Think about how you could **use the knowledge** gained in your experiment in real-life scenarios.

12. **Stay Calm and Don’t Panic**

- If you don’t know the answer to a question, it’s better to admit it politely and try to explain the related concepts you are familiar with.
- Remaining **calm and composed** is key in viva. Answer confidently and try to stay on topic.