CBSE Class 12 Physics Viva Questions 2025: As the CBSE Class 12 Physics Practical exams for 2025 approach students must prepare for the viva voce, where they will be asked questions related to their experiments and the theoretical concepts behind them. The examiners focus on testing the students understanding of key physics principles, experimental setups, and their ability to explain results effectively.

Some common viva questions may include asking about the purpose of an experiment, the formulae used, the method of conducting the experiment, and the significance of the results obtained. Students should be ready to discuss the instruments used, the reasoning behind selecting certain methods, and any precautions taken during the experiments. A thorough understanding of the syllabus and practice with previous year's questions can help students confidently tackle the viva and perform well in their practical exams.

CBSE Class 12 Physics Viva

The CBSE Class 12 Physics Viva is an important part of the practical examination, where students are assessed on their theoretical knowledge, understanding of experimental setups, and ability to explain their findings.

During the viva, students are expected to answer questions related to the experiments conducted, the principles involved, and the formulas used. The examiner may ask about the objective of the experiment, the significance of the observations, any precautions taken, and how the results align with theoretical concepts.

To prepare effectively for the viva, students should:

Understand the Theory: Be well-versed with the fundamental concepts and laws of physics that underpin the experiments.

Know the Experiment Setup: Be familiar with the apparatus, procedure, and the purpose of each experiment.

Explain Results Clearly: Be able to articulate the results and how they relate to the theory.

Practice Common Questions: Prepare for commonly asked viva questions, such as:

- What is the aim of this experiment?
- Which formula is used in this experiment?
- What are the precautions to be taken during this experiment?
- How do you calculate the uncertainty in measurements?

CBSE Class 12 Physics Viva PDF

The CBSE Class 12 Physics Viva PDF is available below providing a complete set of important viva questions and answers. This guide helps you prepare effectively by covering important theoretical concepts, practical experiments, and key applications of Physics. Make sure to go through this PDF to revise and clarify your understanding before your viva exam.

CBSE Class 12 Physics Viva PDF

CBSE Class 12 Physics Viva Questions with Answers

Here are some common CBSE Class 12 Physics Viva Questions along with their answers to help students prepare for their practical exams. These questions cover a variety of experiments conducted in the lab, such as verifying Ohm's Law, measuring resistance, studying refraction through a prism, and understanding the behavior of light and electrical circuits.

Students should focus on key concepts and experiment-related principles to confidently answer questions during their viva examination. Familiarizing themselves with these questions can ensure a strong grasp of both theoretical knowledge and practical skills.

Q1. What is Coulomb's Law?

Answer: Coulomb's Law describes the force between two charged objects. The force depends on the magnitude of the charges and the distance between them. It can be either attractive or repulsive depending on whether the charges are opposite or alike.

Q2. Define focal length and radius of curvature.

Answer: The focal length is the distance between the lens or mirror and its focus, where light rays meet after reflection or refraction. The radius of curvature is the distance from the center of a curved mirror or lens to its surface, representing the radius of the sphere from which the lens or mirror is part.

Q3. What is the formula of Ohm's law?

Answer: V=IR, where V stands for voltage, I for current, and R is resistance.

Q4. What is Ohm's Law?

Ans: Ohm's law states that the current flowing through a conductor is directly proportional to the voltage across it, provided the temperature remains constant. In simple terms, if the voltage increases, the current increases, and if the voltage decreases, the current decreases.

Q5. Unit of current.

Answer: Ampere (A).

Q6. Give the SI unit of resistance.

Answer: Ohm (Ω)

Q7. SI unit of potential difference.

Answer: Volt (V).

Q8. Define electrical conductivity.

Answer: Electrical conductivity refers to a material's ability to allow electric current to pass through it. Materials with high conductivity, like metals, allow electricity to flow easily, while materials with low conductivity, like rubber, resist the flow.

Q9. What is a p-n junction diode?

Answer: A p-n junction diode is a semiconductor device formed by joining p-type and n-type materials. It allows current to flow in only one direction (forward bias) and blocks current in the opposite direction (reverse bias).

Q10. Define the photoelectric effect.

Answer: The photoelectric effect occurs when light hits a metal surface and causes the emission of electrons. This happens when the energy of the light is enough to overcome the work function of the metal.

Q11. Define a rheostat.

Answer: A rheostat is a variable resistor used to control the current flowing through a circuit.

Q12. What material is used in a rheostat’s wire.

Answer: The wire in a rheostat is usually made of constantan or manganin.

Q 13. What is the difference between potential difference and emf?

Answer: The potential difference is the energy required to move a charge between two points in a circuit. The emf (electromotive force) is the potential difference when no current is flowing from a power source, like a battery.

Q14. Why are connecting wires thick and covered with cotton?

Answer: Thick wires have low resistance and ensure efficient current flow. The cotton covering prevents short-circuiting by insulating the wires.

Q 15. Define metre bridge?

Answer: A metre bridge is a device used to measure an unknown resistance based on the principle of the Wheatstone bridge. It consists of a long wire mounted on a wooden frame.

Q16. What is superconductivity?

Answer: Superconductivity is a property of certain materials where they have zero electrical resistance when cooled to very low temperatures.

Q17. What is a potentiometer?

Answer: A potentiometer is an instrument used to measure small potential differences accurately and compare the emf of different cells.

Q18. What is the principle of a potentiometer?

Answer: The principle of a potentiometer states that the potential difference across a uniform wire carrying a steady current is directly proportional to the length of the wire.

Q19. How is a galvanometer converted into (a) a voltmeter and (b) an ammeter?

Answer:

- (a) To convert a galvanometer into a voltmeter, a high resistance is connected in series with it.
- (b) To convert it into an ammeter, a low resistance is connected in parallel.

Q 20. How does temperature affect resistance?

Answer: As the temperature of a conductor increases, its resistance also increases because the movement of atoms in the conductor interferes with the flow of current.

Q 21. What is the reason behind the null point?

Answer: The null point is where the emf of the cell is balanced by the potential drop along a specific length of the potentiometer wire, resulting in no current flow through the galvanometer.

Q 22. What is meant by a cell's internal resistance?

Answer: The internal resistance of a cell refers to the resistance to current flow within the cell itself, caused by the electrolyte and the internal components of the cell.

Q 23. What is meant by a primary cell?

Answer: A primary cell is a type of cell that cannot be recharged. Once its chemical energy is depleted, it is discarded.

Q 24. What is meant by a secondary cell?

Answer: A secondary cell is a type of rechargeable cell that can be used multiple times, such as lead-acid or lithium-ion batteries.

Q 25. Why does a secondary cell give more electric current than a primary cell of the identical e.m.f.?

Answer: A secondary cell provides more current because it has a lower internal resistance compared to a primary cell, allowing more current to flow.

Q 26. Does resistance depend on the dimensions of the conductor?

Answer: Yes, resistance depends on the length and cross-sectional area of the conductor. Longer conductors have more resistance, and thicker conductors have less resistance.

Q 27. What is specific resistance?

Answer: Specific resistance, or resistivity, is a material's intrinsic property that indicates how strongly it resists the flow of electric current. It is measured in ohm-meters.

Q 28. What is the SI unit of resistivity?

Answer: ohm-metre (Ω·m).

Q 29. What is electrical conductivity?

Answer: Electrical conductivity is the ability of a material to allow electric current to pass through it. It is the reciprocal of resistivity.

Q 30. How is a galvanometer converted into (a) a voltmeter and (b) an ammeter?

Answer: (a) A galvanometer is converted into a voltmeter by connecting a high resistance in series.
(b) It is converted into an ammeter by connecting a low resistance in parallel.

Marks Distribution for CBSE Class 12 Physics Viva Questions

The CBSE Class 12 Physics Viva is a crucial part of the practical exam and is created to evaluate students' theoretical knowledge, understanding of practical concepts, and ability to explain experiments. The marks are distributed across different components of the viva, as outlined below:

Parameter	Total Marks Allotted
Two experiments (one from each section)	7 Marks + 7 Marks
Practical record (experiment and activities)	5 Marks

One activity from any section	5 Marks
Investigatory Project	3 Marks
Viva on experiments, activities, and project	5 Marks
Total	**30 Marks**

CBSE Class 12 Physics Viva Questions Preparation Tips

Preparing for the CBSE Class 12 Physics Viva is important to scoring well in your practical exams. The viva assesses not just your practical knowledge but also your ability to explain concepts clearly. Here are some helpful preparation tips to excel in your Physics viva:

1. **Understand the Theory Behind Experiments**

- Focus on the theoretical concepts behind each experiment, such as Ohm's Law, laws of motion, and the working of instruments like galvanometers and voltmeters.
- Be prepared to explain the scientific principles, formulae, and laws that apply to the experiments you perform.

2. **Revise Key Formulas**

- Review important formulas and equations related to each experiment, such as Ohm's Law (V = IR), laws of refraction, or Newton's Laws of Motion.
- Understand how these formulas are derived and how they apply to the experiments.

3. **Familiarize Yourself with the Apparatus**

- Know the name, function, and working of each apparatus used in the experiment.
- Be able to explain how the instruments (e.g., ammeter, voltmeter, galvanometer, etc.) are connected and their roles in the experiment.

4. **Practice Explaining Procedures Clearly**

- Practice explaining the procedure of each experiment step by step.
- Ensure your explanation is clear, concise, and free of unnecessary details.

5. **Understand Possible Errors**

- Be aware of the common errors in each experiment, such as parallax error in reading measurements or the error in measurement of resistance.
- Understand how to minimize and correct errors during experiments.

6. **Prepare for Conceptual Questions**

- Prepare for questions related to the theory behind the experiments, such as "What is the relation between current and voltage in Ohm's Law?" or "Why is a potentiometer preferred over a voltmeter?"
- Understand related concepts, such as the significance of resistance, the importance of using a rheostat, and why certain materials are chosen for specific experiments.

7. **Be Confident While Answering**

- Be confident while answering questions. Even if you don't know the exact answer, try to logically deduce the solution based on your knowledge.
- Stay calm and composed during the viva. Speak clearly and avoid rushing through your answers.

8. **Review the Investigatory Project**

- For the investigatory project, make sure you can explain your project's objective, methodology, and findings. Be prepared to answer any questions related to your project.
- Be clear on the scientific principles or theories behind the project.

9. **Go Through Previous Year Questions**

- Look at previous year's viva questions to get an idea of what kind of questions might be asked.
- Practice answering these questions with a focus on clarity and accuracy.

10. **Ask for Clarification**

- If you don't understand a question asked by the examiner, don't hesitate to ask for clarification.
- It is better to ask for clarity than to provide an incorrect answer.