



**FEDERAL BOARD OF INTERMEDIATE AND SECONDARY EDUCATION**  
**H-8/4, ISLAMABAD**



**PHYSICS HSSC**  
(National Curriculum 2006)  
**PRACTICAL EXAMINATION**

| S # | List of Practicals   |
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| 1.  | Measure length and diameter of a solid cylinder and hence estimate its volume quoting proper number of significant figures using Vernier calipers.   |
| 2.  | Measure the diameters of a few ball bearings of different sizes using Screw Gauge and estimate their volumes. Mention the uncertainty in each result.  |
| 3.  | Determine the radius of curvature of convex lens and a concave lens using a spherometer.   |
| 4.  | Determine the weight of a body by vector addition of forces.   |
| 5.  | Verify the two conditions of equilibrium using a suspended metre rod.  |
| 6.  | Investigate the value of 'g' by free fall method using electronic timer.   |
| 7.  | Investigate the downward force, along an inclined plane, acting on a roller due to gravity and study its relationship with the angle of inclination by plotting graph between force and $\sin\theta$ . |
| 8.  | Determine the moment of inertia of a fly wheel.  |
| 9.  | Investigate the fall of spherical steel balls through a viscous medium and determine.<br>(i) terminal velocity<br>(ii) coefficient of viscosity of the fluid   |
| 10. | Verify that the time period of the simple pendulum is directly proportional to the square root of its length and hence find the value of 'g' from the graph.   |
| 11. | Determine the acceleration due to gravity by oscillating mass-spring system.   |
| 12. | Determination of frequency of A.C by Melde's apparatus / electric sonometer.   |
| 13. | Investigation of the laws of vibration of stretched strings by sonometer or electromagnetic method.  |
| 14. | Determine the wavelength of sound in air using stationary waves and to calculate the speed of sound using resonance tube.  |
| 15. | Measure the mechanical equivalent of heat by electric method.  |
| 16. | Determine the specific heat of a solid by electrical method.   |
| 17. | Determine time constant by charging and discharging a capacitor through a resistor.  |
| 18. | Determine resistance of wire by slide Wire Bridge.   |
| 19. | Determine resistance of voltmeter by drawing graph between R and I/V.  |
| 20. | Determine resistance of voltmeter by discharging a capacitor through it.   |
| 21. | Analyse the variation of resistance of thermistor with temperature.  |
| 22. | Determine internal resistance of a cell using potentiometer.   |
| 23. | Determine emf of a cell using potentiometer.   |
| 24. | Determine the emf and internal resistance of a cell by plotting V against I graph.   |
| 25. | Investigate the relationship between current passing through a tungsten filament lamp and  |

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|     | the potential applied across it.  |
| 26. | Convert a galvanometer into voltmeter of range 0 – 3 V.   |
| 27. | Determine the relation between current and capacitance when different capacitors are used in AC circuit using different series and parallel combinations of capacitors. |
| 28. | Determine the impedance of a RL circuit at 50Hz and hence find inductance.  |
| 29. | Determine the impedance of a RC circuit at 50Hz and hence find capacitance.   |
| 30. | Draw characteristics of semiconductor diode and calculate forward and reverse current resistances.  |
| 31. | Study of the variation of electric current with intensity of light using a photocell.   |

**Questions to be asked in place of Practical Notebook and Viva Voce.** (Total Marks 08)

**Write answers of any Four of the following questions on your answer sheet.**

| Q.NO | Questions  | Marks |
|------|--|-------|
| 1.   | What is meant by least count? Calculate the least count of Vernier calliper having 20 divs of Vernier scale. | (2)   |
| 2.   | What is sonometer? By using sonometer differentiate between law of length and law of tension.                | (2)   |
| 3.   | Define time constant for capacitor. How the time constant can be changed?                                    | (2)   |
| 4.   | What is PN junction? How does it work as a rectifier?  | (2)   |
| 5.   | Why is a rheostat used in a circuit? On what factors resistance of conductor depends?                        | (2)   |

**Note:** The above questions will be asked from students as replacement of the marks of Practical Notebook and Viva Voce. The rest of the conduct/format of practical examination will continue as per practice in vogue.