Every student will perform 10 experiments (5 from each section) & 8 activities (4 from each section) during the academic year. Two demonstration experiments must be performed by the teacher with participation of students. The students will maintain a record of these demonstration experiments. B. Evaluation Scheme for Practical Examination: One experiment from any one section 8 Marks Two activities (one from each section) (4 + 4) 8 Marks Practical record (experiments & activities) 6 Marks Record of demonstration experiments & Viva based on these experiments 3 Marks Viva on experiments & activities 5 Marks Total 30 Marks

Section A

Experiments
1. To determine resistance per cm of a given wire by plotting a graph of potential difference versus current.
2. To find resistance of a given wire using metre bridge and hence determine the specific resistance of its material.
3. To verify the laws of combination (series/parallel) of resistances using a metre bridge.
4. To compare the emf of two given primary cells using potentiometer.
5. To determine the internal resistance of given primary cells using potentiometer.
6. To determine resistance of a galvanometer by half-deflection method and to find its figure of merit.
7. To convert the given galvanometer (of known resistance and figure of merit) into an ammeter and voltmeter of desired range and to verify the same.
8. To find the frequency of the a.c. mains with a sonometer.

Activities
1. To measure the resistance
and impedance of an inductor with or without iron core. 2. To measure resistance, voltage (AC/DC), current (AC) and check continuity of a given circuit using multimeter. 3. To assemble a household circuit comprising three bulbs, three (on/off) switches, a fuse and a power source. 4. To assemble the components of a given electrical circuit. 5. To study the variation in potential drop with length of a wire for a steady current. 6. To draw the diagram of a given open circuit comprising at least a battery, resistor/rheostat, key, ammeter and voltmeter. Mark the components that are not connected in proper order and correct the circuit and also the circuit diagram. Section B Experiments 1. To find the value of v for different values of u in case of a concave mirror and to find the focal length. 2. To find the focal length of a convex lens by plotting graphs between u and v or between 1/u and 1/v. 3. To find the focal length of a convex mirror, using a convex lens. 4. To find the focal length of a concave lens, using a convex lens. 5. To determine angle of minimum deviation for a given prism by plotting a graph between angle of incidence and angle of deviation. 6. To determine refractive index of a glass slab using a travelling microscope. 7. To find refractive index of a liquid by using (i) concave mirror, (ii) convex lens and plane mirror. 8. To draw the I-V characteristic curve of a p-n junction in forward bias and reverse bias. 9. To draw the characteristic curve of a zener diode and to determine its reverse break down voltage. 10. To study the characteristics of a common-emitter npn or pnp transistor and to find out the values of current and voltage gains. Activity 1. To study effect of intensity of light (by varying distance of the source) on a L.D.R. 2. To identify a diode, a LED, a transistor and IC, a resistor and a capacitor from mixed collection of such items. 3. Use of multimeter to (i) identify base of transistor. (ii) distinguish between npn and pnp type transistors. (iii) see the unidirectional flow of current in case of a diode and a LED. (iv) check whether a given electronic component (e.g. diode, transistor or IC) is in working order. 4. To observe refraction and
lateral deviation of a beam of light incident obliquely on a glass slab. 5. To observe polarization of liquid using two Polaroids. 6. To observe diffraction of light due to a thin slit. 7. To study the nature and size of the image formed by (i) convex lens, (ii) concave mirror, on a screen by using a candle and a screen (for different distances of the candle from the lens/mirror). 8. To obtain a lens combination with the specified focal length by using two lenses from the given set of lenses. Suggested Investigatory Projects 1. To investigate whether the energy of a simple pendulum is conserved. 2. To determine the radius of gyration about the centre of mass of a metre scale as a bar pendulum. 3. To investigate changes in the velocity of a body under the action of a constant force and determine its acceleration. 4. To compare effectiveness of different materials as insulators of heat. 5. To determine the wavelengths of laser beam by diffraction. 6. To study various factors on which the internal resistance/emf of a cell depends. 7. To construct a time-switch and study dependence of its time constant on various factors. 8. To study infrared radiations emitted by different sources using photo-transistor. 9. To compare effectiveness of different materials as absorbers of sound. 10. To design an automatic traffic signal system using suitable combination of logic gates. 11. To study luminosity of various electric lamps of different powers and make. 12. To compare the Young’s modulus of elasticity of different specimens of rubber and also draw their elastic hysteresis curve. 13. To study collision of two balls in two dimensions. 14. To study frequency response of : (i) a resistor, an inductor and a capacitor, (ii) RL circuit, (iii) RC circuit, (iv) LCR series circuit.

Oswaal CBSE Laboratory Manual Class 12 Physics Book (For 2022 Exam)-Oswaal Editorial Board 2021-03-26

• It is strictly according to the latest CBSE guidelines

• It contains all NCERT Lab Manual Questions, fully solved
• It contains more than sufficient viva voce questions for practice

• It also includes brief description of each activity/experiment, which will help students in practicing and completing their lab work. "

Physics Laboratory Manual-David Loyd 2013-01-01 Ideal for use with any introductory physics text, Loyd's PHYSICS LABORATORY MANUAL is suitable for either calculus- or algebra/trigonometry-based physics courses. Designed to help students demonstrate a physical principle and learn techniques of careful measurement, Loyd's PHYSICS LABORATORY MANUAL also emphasizes conceptual understanding and includes a thorough discussion of physical theory to help students see the connection between the lab and the lecture. Available with InfoTrac Student Collections http://gocengage.com/infotrac.

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Physics Lab Manual-Moore
Practical/Laboratory Manual Physics Class XI based on NCERT guidelines by Dr. J. P. Goel & Er. Meera Goyal-Dr. J. P. Goel 2020-06-26 EXPERIMENTS 1.Measurement of Length 1.To measure the diameter of a small spherical/cylindrical body by using a vernier callipers, 2. To measure the dimensions of a given regular body of known mass, using vernier callipers and hence find its density, 3. To measure the internal diameter and depth of a given cylindrical vessel (say calorimeter/beaker) by using vernier callipers and hence find its internal volume (i.e., capacity) Viva-voce 2. Screw Gauge/Micrometer 4.To determine the diameter of a given wire using a screw gauge and find its volume, 5. To find the thickness of a given sheet with the help of screw gauge, 6.To measure the volume of an irregular lamina by using a screw gauge Viva-voce 3. Spherometer 7.To measure the radius of curvature of a given spherical surface (convex lens) by using a

of a given solid by the method of mixture 11. To determine the specific heat of a given liquid by method of mixture Viva-voce

SECTION : A ACTIVITIES 1. To make a paper scale of given least count e.g., 0.2 cm, 0.5 cm and use it to measure the length of a given object. 2. To determine the mass of a given body using a metre scale and by applying principle of moments. Viva-voce 3. To plot a graph for a given set of data using proper choice of scales and error bars. Viva-voce 4. To measure the force of limiting friction for rolling of a roller on horizontal plane. Viva-voce 5. To study the variation in the range of a jet of water with angle of projection. Viva-voce 6. To study the conservation of energy of a ball rolling down on inclined plane (using a double inclined plane). Viva-voce 7. To study dissipation of energy of a simple pendulum by plotting a graph between square of amplitude and time. Viva-voce

SECTION : B ACTIVITIES 1. To observe the change of the state and plot a cooling curve for molten wax. Viva-voce 2. To observe and explain the effect of heating on a bimetallic strip. Viva-voce 3. To note the change in level of liquid in a container on heating and interpret the observations. Viva-voce 4. To study the effect of detergent in surface tension by observing capillary rise. Viva-voce 5. To study the factors affecting the rate of loss of heat of a liquid. Viva-voce 6. To study the effect of load on depression of a suitably clamped meter scale loaded (i) at its end (ii) in the middle. Viva-voce 7. To observe the decrease in pressure with the increase in velocity of the fluid. Viva-voce

APPENDIX Some Important Tables of Physical Constants Log-Antilog and other Tables

University Physics Lab Manual Volume One-Lowell Wood 2017-07
Im-Physics Lab Manual-Loyd 2007
First Year Physics Lab Manual-University of Toronto. Department of Physics 1992
Comprehensive Practical Physics XI-J. N. Jaiswal 2012-08-01
Experiments in Physics-Daryl W. Preston 1985-01-18
Comprehensive lab procedures for introductory physics
Experiments in Physics is a lab manual for an introductory calculus-based physics class. This collection of 32 experiments includes laboratory procedures in the areas of mechanics, heat, electricity, magnetism, optics, and modern physics, with post-lab questions designed to help students analyze their results more deeply. Introductory material includes guidance on error analysis, significant figures, graphical analysis and more, providing students with a convenient reference throughout the duration of the course.

University Physics Lab Manual Volume Two-Lowell Wood 2017-07
Physics-Patrick Briggs 1997-09-01
QSL Physics Lab Manual-Frank Eshelman 2008-05-15 Laboratory experiments can be a challenge for teachers in small schools or home schools. This manual and the kit designed to accompany it are an effort to help solve this problem. The hands-on laboratory exercises have been designed with two principle goals in mind: 1) educational challenge and 2) convenience for the teacher. Every experiment clearly teaches a scientific principle. They cover a number of topics usually taught at the 11th or 12th grade level. The equipment has been chosen or, in some cases, developed by the authors, to produce successful results and give the student a real learning experience. This kit is only intended to cover the laboratory portion of a high school physics course. The rest of the course would be covered in a standard text.

LAB EXPERIMENTS:
Introduction A: Scientific Investigation
Introduction B: Scientific Analysis
1. A Recording Timer, The acceleration of gravity
2. Newton's Second Law
3. The Sum of vectors
4. Acceleration on an Inclined Plane
5. Potential and Kinetic Energy
6. Coefficient of Friction
7. Work and Power
8. Projective Motion
9. Impulse And Momentum
10. Conservation of Momentum
11. Conservation of Energy and Momentum
12. Mechanical Advantage of a Simple Machine
13. Hooke's Law

Physics, Laboratory Manual-Student Version-John D. Cutnell 2004-02-10 This Sixth Edition helps readers understand the interrelationships among basic physics concepts and how they fit together to describe our physical world. Throughout the book, the authors emphasize the relevance of physics to our everyday lives. Real-world physics applications, including many biomedical applications, show how physics principles come into play over and over again in our lives. Problem Solving Insights explain each calculation in detail, guiding readers through the quantitative process Includes a CD containing physics simulations

Physics Grade 12 Student Lab Manual 3rd Edition-259077 2010-03-01
General Physics Lab Manual-Pearson Custom Publishing 1999-08-01
Physics Lab Manual W/computer-Dinardo 1989-12-01
PHYSICS LAB MANUAL 130 SERIES-
Physics Lab Manual-Bill Wright 2010
General Physics Lab Manual Volume Two 13e-Lowell Wood 2017-07
Introduction to Physics Lab Manual-Bill Wright 2010-03-03
Reactor Physics Laboratory Manual-Oak Ridge School of Reactor Technology 1955
2005-02-25 The Student Laboratory Manual provides extensive laboratory exercises and experiments to reinforce concepts and stimulate interest in further studies.
Fundamentals of Physics Extended 8th Edition with Physics Lab Manual Set-David Halliday 2010-12-03
The Physics Lab Manual I Experiments to Accompany Physics 1501/1610 Laboratories-Clymer 2018-07-10
General Physics Lab Manual Volume One 14e-Lowell Wood 2017-07
The Physics Lab Manual II Experiments to Accompany Physics 1502/2611 Laboratories-Allison 2017-08-10

Acp Phys 213l/214l - General Physics Lab Manual @ Southern A-Brooks/Cole 2016-03-21

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