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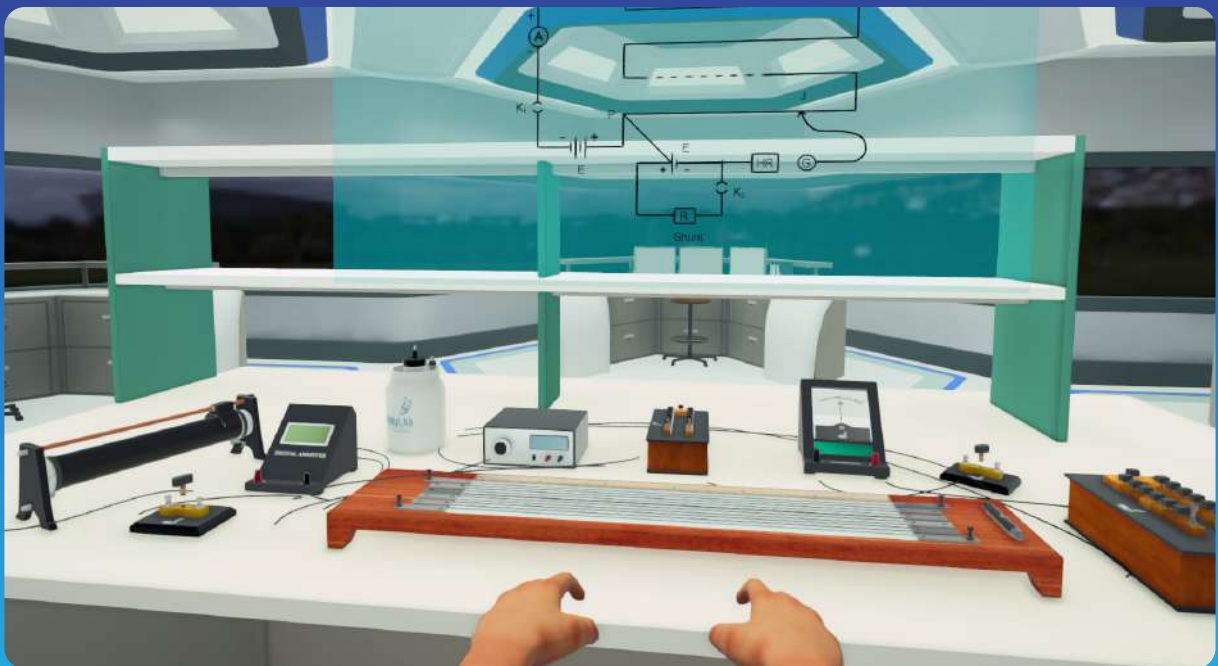
SIMULAB

True to Life Lab Experience

List of Experiments

Physics

 Activities are also included



Experiments

1. Determination of the density of a liquid (other than water) by using a spring balance and a measuring cylinder
2. Determination of density of a non-porous solid (insoluble and denser than water)
3. To plot distance – time ($s - t$) graph for an object moving with a uniform speed from a given set of s and t data
4. To plot the velocity – time ($v - t$) graph for an object moving with uniform accelerations from a given set of $v - t$ data.
5. To study the third law of motion using two spring balances
6. To study the variation in limiting friction with mass and the nature of surfaces in contact
7. To verify Archimedes' principle
8. To establish the relation between the loss in weight of a solid when fully immersed in (i) tap water; (ii) strongly salty water
9. To study the effect of amplitude on the time period of a simple pendulum
10. To study the variation in time period of a simple pendulum with its length
11. To study the effect of mass on the time period of a simple pendulum
12. To determine the speed of a transverse pulse propagated through a stretched string
13. To determine the speed of a longitudinal pulse propagated through a stretched slinky
14. To study the reflection of sound

Activities

1. Demonstration of balanced & unbalanced force
2. Observation of Newton's laws of motion
3. Conservation of momentum
4. Observation of gravitation
5. Archimedes' principle
6. Sound needs a medium to travel
7. Experiment on reflection of sound
8. Study the structure of the human ear

Experiments

1. Motion along a straight line
2. Observation of graph (Distance-time and velocity -time)
3. Demonstration of balanced and unbalanced force
4. Observation of newtons laws of motion
5. Conservation of momentum
6. Observation of gravitation
7. Archimede's principle
8. Sound needs a medium to travel
9. Experiment on reflection of sound
10. Study the structure of the Human ear

Experiments

1. To verify the laws of reflection of light using a plane mirror.
2. To draw the images of an object, formed by a concave mirror, when the object is placed at various positions.
3. To determine the focal length of a concave mirror by obtaining image of a distant object.
4. To study the formation of an image of a lighted candle by a concave mirror, when placed slightly beyond the centre of curvature.
5. To study the formation of an image of a lighted candle by a concave mirror, when placed between the centre of curvature and the principal focus.
6. To study the formation of an image of a lighted candle by a concave mirror, when placed at the centre of curvature.
7. To trace the path of a ray of light passing obliquely through a rectangular glass slab for different angles of incidence and to measure the angle of incidence, angle of refraction, the angle of emergence and interpret the results.
8. To trace the path of a ray of light through a glass prism and to measure the angle of deviation.
9. To draw the images of an object formed by a convex lens, when placed at various positions.
10. To determine the focal length of a thin convex lens by obtaining image of a distant object.
11. Image formation by convex lens when candle placed beyond center of curvature.

Experiments

12. To study the formation of an image of a lighted candle by a convex lens when placed at a distance of $2f$ from the optical centre of the convex lens.
13. To study the formation of an image of a lighted candle by a convex lens when placed at a distance less than $2f$ but more than f from the optical centre of the convex lens.
14. To study the dependence of the potential difference across a resistor on the current through it and to determine its resistance and to verify the Ohm's law.
15. To study the factors that affect the resistance of a resistor.
16. To determine the equivalent resistance of two resistors connected in series combination.
17. To determine the equivalent resistance of two resistors connected in parallel combination.
18. To draw magnetic field lines of a bar magnet.
19. To draw the magnetic field lines of a current-carrying straight wire.
20. To study the magnetic field of an electromagnet.
21. To study the force on a current-carrying straight conductor in a magnetic field and to verify that the motion of the conductor is according to Fleming's left-hand rule.
22. To study the phenomenon of electromagnetic induction.

Activities

1. Study of different terms of spherical mirror and determination of focus
2. Image formation by convex mirror
3. Image formation by concave lens
4. Study of human eye by model
5. Defects of vision & correction by using charts
6. Scattering of light through colloidal solution
7. Study of different electrical apparatus in an electric circuit
8. Factors on which the resistance of the conductor depends
9. Heating effect of electric current through different experiments
10. Magnetic field due to current through a circular loop & solenoid magnetic field created by solenoid with core & without core
11. Model of motor
12. Magnetic effects of electric current
13. Dynamo model

Experiments

1. Laws of reflection in a plane mirror(verification)
2. Study of different terms of spherical mirror & determination of focus
3. Image formation by concave mirror
4. Image formation by convex mirror
5. Verification of laws of refraction by glass slab
6. Image formation by concave lens
7. Image formation by convex lens
8. Study of human eye by model
9. Defects of vision & correction by using charts
10. Refraction of light through a prism
11. Scattering of light through colloidal solution
12. Study of different electrical apparatus in an electric circuit
13. Verification of Ohm's law
14. Factors on which the resistance of conductor depends
15. Series combination of resistances & parallel combination of resistances
16. Heating effect of electric current through different experiments
17. Magnetic effects of electric current

Experiments

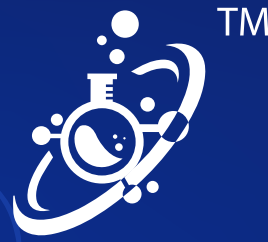
18. Magnetic field & field lines
19. Magnetic field due to current carrying conductor & straight conductor
20. Magnetic field due to current through a circular loop & solenoid magnetic field created by solenoid with core & without core
21. Model of motor
22. Force on current carrying conductor in a magnetic field
23. Electromagnetic induction
24. Dynamo model

Experiments

1. Simple pendulum
2. Sonometer - Law of tension & law of length
3. Helical spring - Method of oscillation
4. Resonance tube - Velocity of sound
5. Beam balance - Determination of mass
6. Parallelogram law of vector addition - Measurement of weight
7. Young's modulus - Searle's apparatus
8. Relation between angle of inclination and downward force
9. Relation between limiting and normal friction
10. Use of Vernier Callipers
11. Use of Screw Gauge
12. Use of Spherometer
13. Surface tension - Capillary rise method
14. Coefficient of Viscosity - Terminal velocity
15. Newton's law of cooling
16. Variation in Volume with pressure
17. Specific heat capacity of solid and liquid

Experiments

1. Ohm's law and resistance
2. Metre bridge - Resistance of a wire
3. Metre bridge - Law of combination of resistors
4. Potentiometer - Comparison of emf
5. Potentiometer - Internal Resistance of a Cell
6. Figure of Merit of a Galvanometer
7. Conversion of Galvanometer to Ammeter
8. Conversion of Galvanometer to Voltmeter
9. AC Sonometer
10. Concave Mirror-Focal Length by u-v Method
11. Convex Lens - Focal Length
12. Focal length of convex mirror using convex lens
13. Focal length of concave lens using convex lens
14. Spectrometer - Prism
15. Refractive Index of glass slab
16. Concave mirror - Refractive Index of water
17. Convex lens & plane mirror - Refractive Index of water
18. Diode Characteristics
19. Zener Diode
20. Transistor Characteristics



SIMULAB

True to Life Lab Experience



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