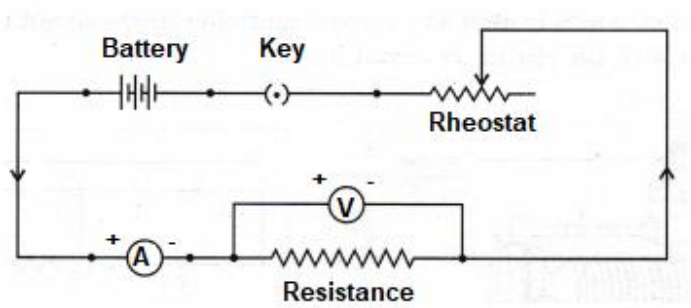
PHYSICS
LAB MANUAL
CLASS –XII
2020-2021

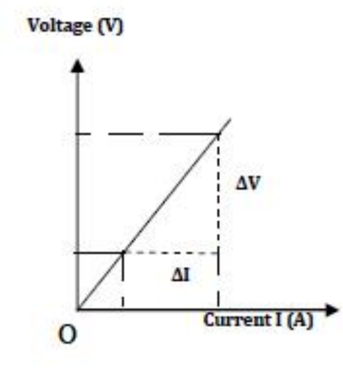
INDEX

S.NO	DATE	NAME OF THE EXPERIMENT	SIGNATURE OF THE TEACHER

EXPERIMENT NO. 01 **<u>OHM'S LAW</u>**

(TO BE WRITTEN ON THE LEFT SIDE OF THE RECORD:)





Slope= ΔV/ ΔI= resistance R

S.NO	VOLTMETER READING V(VOLTS)	AMMETER READING I (AMPERES)	RESISTANCE V/I R (OHMS)
Wire(1)			
Wire(2)			

EXPERIMENT NO. 01 **OHM'S LAW**

DATE:

AIM: To determine resistivity of two wires by plotting a graph for potential difference versus current.

APPARATUS: Two pieces of high resistance wire about 1m long, a dc voltmeter, a dc ammeter, a rheostat, plug key, battery eliminator, connecting wires, sand paper and a metre scale.

STATEMENT &FORMULA: Ohm's law states that at constant temperature, the current flowing through a conductor varies directly as potential difference between its ends.

$$R=\frac{V}{I}$$

where V is potential difference and I is the current, passing through the conductor of length L in cms

$$\text{Resistivity } \rho=RA/l$$

where 'R' is the resistance, 'A' is the area of cross section of the wire ($A=\pi r^2$), 'l'is the length of the wire.

PROCEDURE: 1.The connections were made as shown in the circuit diagram. Voltmeter is connected in parallel with the given wire, ammeter is connected in series. 2. Insert the plug key. Slide the contact point of the rheostat to one of its extreme positions such that ammeter will show least current in the circuit. Note the values of current and voltage using ammeter and voltmeter respectively.

3. Slowly slide the rheostat contact to the other extreme end in steps and record the values of voltmeter and corresponding current I from ammeter

4. Remove the resistance wire from the circuit arrangement and stretch it along the meter scale. Measure the length of the wire.

5. Measure the diameter of the resistance wire with a screw gauge

6.Plot V versus I graph for the wire.

7. Repeat the procedure for the second wire.

RESULT: 1. The resistance of the given wire (1) from graph R= ---- ohms

2. The specific resistance of the material of wire (1) =-------- Ω m

3. The resistance of the given wire (2) from graph R= ---- ohms

4. The specific resistance of the material of wire (2) =-------- Ω m

PRECAUTIONS: 1. Check the connections of the terminals of voltmeter and ammeter so that their positive terminal must be connected towards the positive potential of the battery. 2. All connection must be rigid. Any loose connection introduces additional resistance 3. Insert the plug key while making observations, otherwise the current flowing in the circuit cause unnecessary heating effect

SOURCES OF ERROR: (1) The connecting wires may not have negligible resistance.(2) The ends of the wires may not be clean

EXPERIMENT NO. 01 **<u>OHM'S LAW</u>**

(TO BE WRITTEN ON THE LEFT SIDE OF THE RECORD)

Least count : --- mm Zero error = ---- Zero correction=---------

S.No	PSR (mm)	CSD	CSR = CSD x LC(mm)	ZC(mm)	Diameter PSR + CSR +/-ZC
Wire(1)					
Wire(2)					

The resistance of wire (1) from graph is= -----Ω

The resistance of wire (2) from graph is= -----Ω

The length of the wire (1) = --- cm

The length of the wire (2) = --- cm

Specific resistance of the material of the wire $\rho = \frac{x\pi r^2}{L}$

EXPERIMENT NO 2. **METRE BRIDGE-I**

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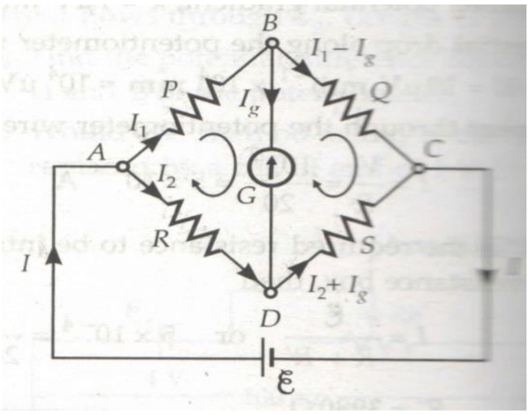
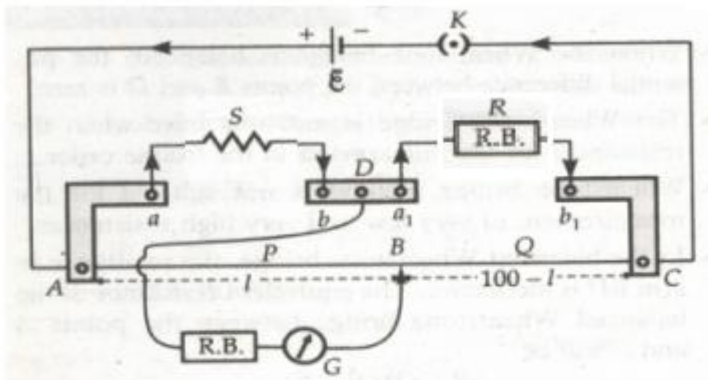




S.NO	RESISTANCE (Ω)		BALANCING LENGTH L(cm)		X=R l/(100-l) (Ω)
	LEFT SIDE	RIGHT SIDE	LEFT SIDE	RIGHT SIDE	

Average resistance of the given wire X = ----- Ω

EXPERIMENT NO 2. **METRE BRIDGE-I**

DATE:

AIM: To find the resistance of a given wire using a metre bridge

APPARATUS: Metre bridge, given specimen wire, galvanometer, Leclanche cell, plug key resistance box, screw gauge, connecting wires, jockey and sand paper

FORMULA: 1.The unknown resistance of the specimen wire = $x = R\frac{l}{100-l}\,\Omega$

Where R = resistance in the resistance box, l = balancing length towards the unknown resistance

PROCEDURE: 1.The connections were made as shown in the circuit diagram.

2. check the direction of deflection of the galvanometer by pressing the jockey at one end of the metre bridge, and then at the other end. If the galvanometer shows opposite deflections, the circuit connections are correct
3. Adjust the value of R from the resistance box in such a way that the balance point is obtained nearly at the middle of the metre bridge wire. Note the balancing length.
4. Repeat the experiment with different values of R

RESULT: 1. Resistance of the given wire R= ---- Ω

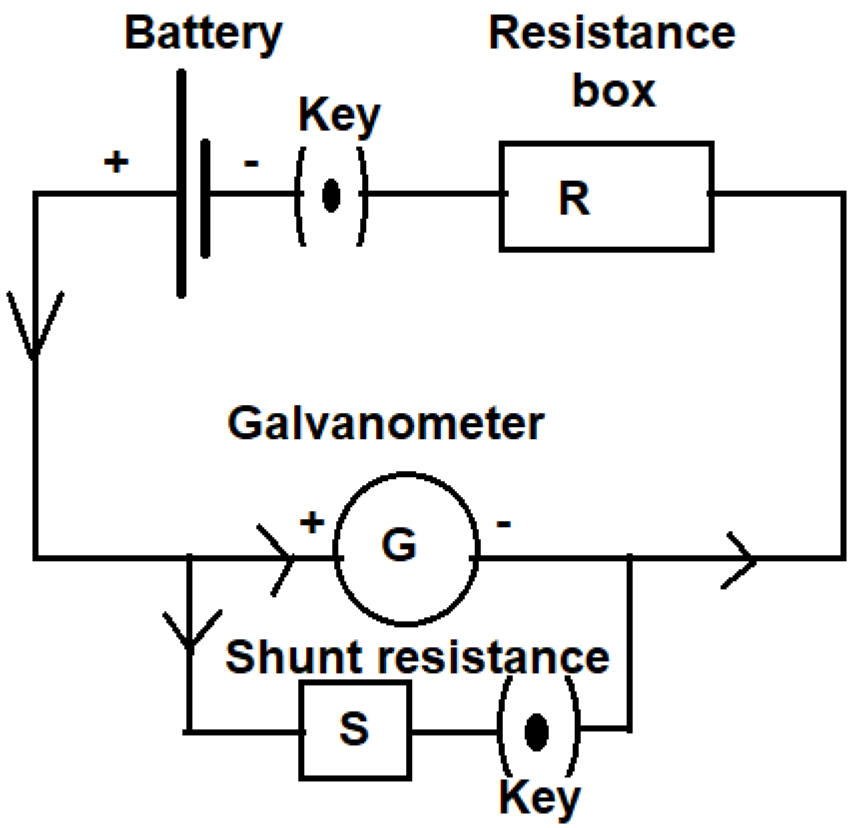
PRECAUTIONS:

1. All connection must be rigid. Any loose connections introduce additional resistance
2. Use a high resistance if the deflection of the galvanometer is large.
3. The jockey should be pressed gently on the wire

SOURCES OF ERROR: 1. The entire length of the metre bridge wire may not be of uniform area of cross section 2. The screw gauge may have faults like back lash error and wrong pitch

EXPERIMENT NO.3 **GALVANOMETER**

(TO BE WRITTEN ON THE LEFT SIDE OF THE RECORD:)



S.No	Resistance R(Ω)	Deflection θ (div)	Shunt S(Ω)	Half deflection θ/2(div)	$G=\frac{R\times S}{R-S}$ (Ω)	$k=\frac{E}{(R+G)\theta}$ amp/division

EXPERIMENT NO.3 **GALVANOMETER**

DATE:

AIM: To (i) determine resistance of the galvanometer by half deflection method
(ii) find the figure of merit of galvanometer.

APPARATUS: A Weston type galvanometer, a high resistance box, a low resistance box, a battery eliminator, a voltmeter connecting wires and a sand paper

FORMULA: (i) the resistance of the galvanometer $G = \frac{R \times S}{R - S}\,\Omega$ where R is the resistance in the resistance box, S is the resistance of the shunt

(ii) figure of merit = $k = \frac{E}{(R+G)\theta}$ ampere/division

where E is the potential difference across the source, R is the resistance in the resistance box, G = resistance of the galvanometer, θ is the deflection in the galvanometer.

PROCEDURE:

1.Make the connections as shown in the circuit diagram 2. Insert key k1 and adjust the value of high resistance R so that a sufficiently large deflection is obtained in the galvanometer. Note down the deflection in the galvanometer

3. Close the key k2 and keep the resistance R fixed. Adjust the resistance S so that the deflection in the galvanometer becomes half. And note down the readings of R and S.. 4. Repeat the procedure for different values of R.

RESULT:

1. The resistance of the galvanometer G= ---- 0hm
2. The figure of merit of the galvanometer k = -----amp/division

PRECAUTIONS: 1. All the connections should be tight.

2.The value of resistance R should be so adjusted so that the deflection of the galvanometer should be large but should be within the scale

SOURCES OF ERROR:

1. The plugs of resistance boxes may not be clean
2. The ends of the wires may not be clean.
3. The division of the galvanometer may not be of equal size

EXPERIMENT NO. 4 **POTENTIOMETER**

(COMPARISON OF EMF'S OF CELLS)

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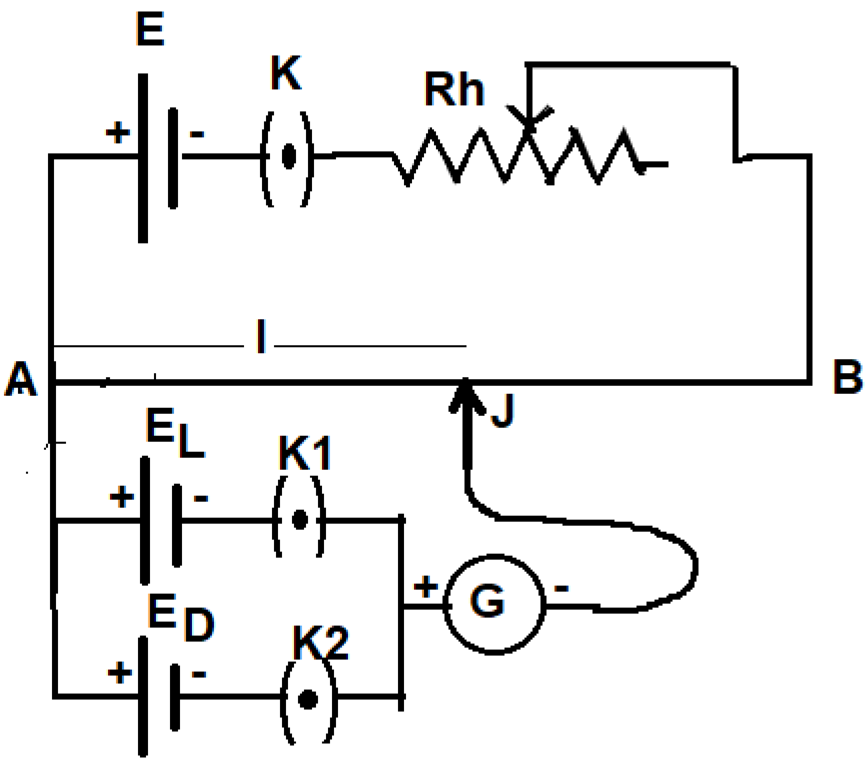


s.no	Balancing length l_1 (cm) (LECLANCHE CELL)	Balancing length l_2 (cm) (DANIEL CELL)	$\frac{E_L}{E_D} = \frac{l_1}{l_2}$

EXPERIMENT NO. 4 **POTENTIOMETER**

DATE: **(COMPARISON OF EMF'S OF CELLS)**

AIM:

To compare the emf's of two given primary cells (Leclanche and Daniel) using potentiometer.

APPARATUS: A secondary cell, Leclanche cell, Daniel cell, rheostat, galvanometer, potentiometer, jockey and two-way key and a key.

FORMULA:

the ratio of emf's of the two given cells = $\boxed{\frac{E_L}{E_D} = \frac{l_1}{l_2}}$.

Where E_L, E_D are the emf's of the Leclanche and Daniel cell and l_1 and l_2 are their corresponding balancing lengths.

PROCEDURE:

1.Make the connections as shown in the circuit diagram 2. keep the contact point of the rheostat at the middle. 3. close the key k and k_1. Touch the jockey on the first wire and then on the 10^{th} wire. If the deflections in the galvanometer are opposite, the circuit connections are correct. 4. Now find the position of null deflection. Insert the key in the high resistance box and locate the exact position of the null deflection and note down the balancing length.

5. Repeat the similar procedure for Daniel cell for the same position of rheostat and note down the balancing length. 6. Repeat the procedure for different positions of the rheostat, i.e for different currents. The ratio of $\frac{E_L}{E_D}$ is found to be constant.

RESULT:

The ratio of emf's of the two given cells $= \frac{E_L}{E_D} = \frac{l_1}{l_2}$ = ------

PRECAUTIONS:

1.All the connections should be tight.

2.The emf of the secondary cell should be greater than emf of either of the cells

3. The jockey should be pressed gently and momentarily on the wire.

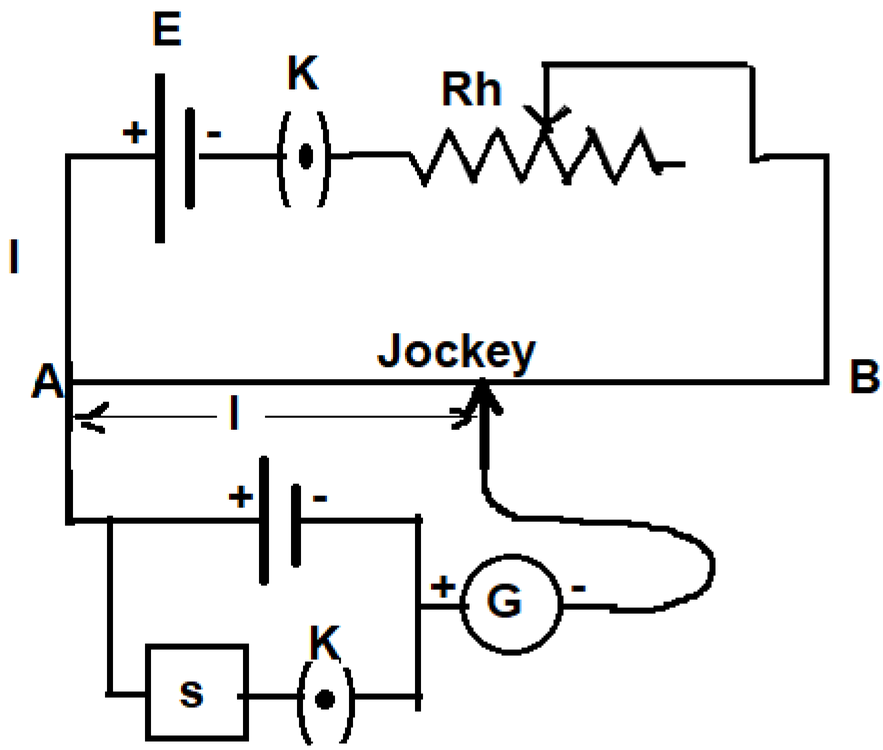
SOURCES OF ERROR:

1. The error in detecting the null deflection in galvanometer will affect the result
2. The potentiometer wire may not have uniform area of cross section
3. The heating of potentiometer wire may cause some error

EXPERIMENT NO. 5 **POTENTIOMETER**

INTERNAL RESISTANCE OF A CELL

(TO BE WRITTEN ON THE LEFT SIDE OF THE RECORD:)



S.No	Shunt resistance S(Ω)	Balancing length l_1(cm) (WITHOUT SHUNT)	Balancing length l_2(cm) (WITH SHUNT)	$r = \frac{(l_1 - l_2)S}{l_2}$

EXPERIMENT NO. 5 **POTENTIOMETER**

DATE: **INTERNAL RESISTANCE OF A CELL**

AIM:

To find the internal resistance of a primary cell (Leclanche) using potentiometer

APPARATUS:

A secondary cell, Leclanche cell, rheostat, galvanometer, potentiometer, two keys, shunt resistance, jockey.

FORMULA:

The internal resistance of primary cell $r = \frac{(l_1 - l_2)S}{l_2}\ \Omega$ Where l_1 and l_2 are the corresponding balancing lengths without shunt resistance and with shunt resistance respectively and S is the shunt resistance

PROCEDURE:

1.Make the connections as shown in the circuit diagram 2. keep the contact point of the rheostat at the middle. 3. close the key k. Touch the jockey on the first wire and then on the 10^{th} wire. If the deflections in the galvanometer are opposite, the circuit connections are correct. 4. Now find the position of null deflection. Insert the key in the high resistance box and locate the exact position of the null deflection and note down the balancing length.l_1.

5. Close the key k_1 and insert some resistance in the shunt. Repeat the same procedure to find the balancing length l_2. . Repeat the procedure for the different resistances of the shunt and note down the readings

RESULT:

The internal resistance of the Leclanche cell = ---- Ω

PRECAUTIONS:

1.All the connections should be tight.

2.The emf of the secondary cell should be greater than emf of either of the cells

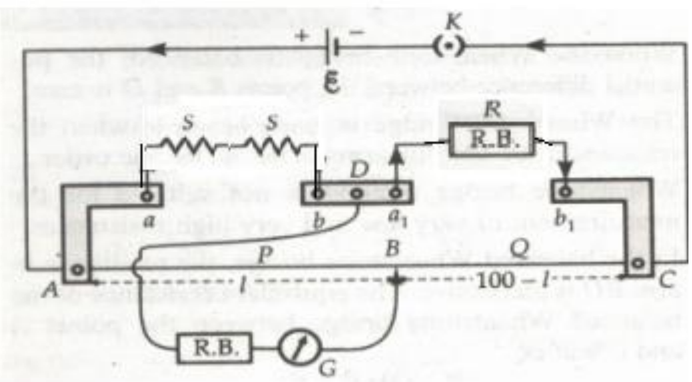
3. The jockey should be pressed gently and momentarily on the wire.

SOURCES OF ERROR:

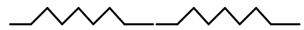
1. The error in detecting the null deflection in galvanometer will affect the result
2. The potentiometer wire may not have uniform area of cross section
3. The heating of potentiometer wire may cause some error

EXPERIMENT NO. 6 **METRE BRIDGE –II**

(TO BE WRITTEN ON THE LEFT SIDE OF RECORD)



resistors in series



RESISTANCE	S.NO	Resistance (Ω)		Balancing length left gap l cm	Balancing length right gap (100-l) cm	RESISTANCE R*(l/100-l) Ω	MEAN RESISTANCE Ω
		Left gap	Right gap				
R1	1 2 3						
R2	1 2 3						
R IN SERIES	1 2 3						

R_1	R_2	R_s	$R1+R_2$

EXPERIMENT NO. 6 **METRE BRIDGE –II**

DATE:

AIM:

To verify the laws of combination of resistances in series using metre bridge.

APPARATUS:

A metre bridge, a galvanometer, a leclanche cell, a resistance box, a jockey, two resistance coils, sand paper and some connecting wires.

FORMULA:

(I) Resistance of a given wire $x = \frac{R \times l}{100 - l} \Omega$ where R is the unknown resistance, L is the length on the side of unknown resistance.

(ii) The effective resistance of the resistors connected in series $RS = R_1 + R_2 \, \Omega$

PROCEDURE:

Take the two given resistance wires or coils and mark them as R_1 and R_2. Make the connections as shown in the circuit diagram. A key is inserted in the circuit so that the current may be passed when required. Connect the unknown resistance coil in the left gap and known resistance in the right gap. Now introduce suitable resistance in the resistance box and find the balance point on the metre bridge wire with the help of jockey where galvanometer shows no deflection. Measure the length of the wire l on the left side gap. Take a minimum of three readings by changing the value of known resistance and record them in the observation table. Now find the values of R_2 using the same procedure. Then connect the coils in series to each other and the combination is connected in the left gap. Then take a set of three readings each and record them in the observation table. Find the average value of each set of readings and verify the laws using the above formulae.

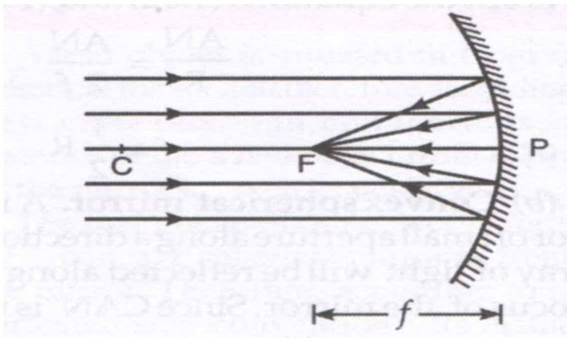
RESULT: The resistance of the first coil R_1= -----Ω

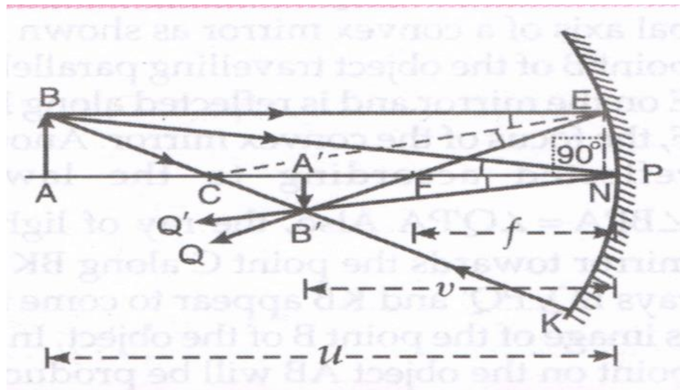
The resistance of the second coil R_2= --------Ω

The effective resistance of the coils connected in series combination R_s =------Ω

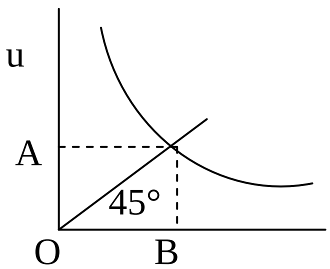
EXPERIMENT NO 7 **<u>CONCAVE MIRROR</u>**

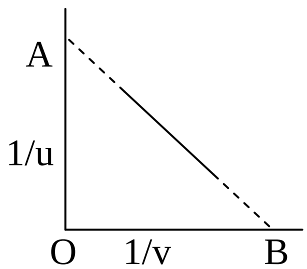
(TO BE WRITTEN ON THE LEFT SIDE OF THE RECORD:)





Model graphs





1.Focal length of the concave mirror by distant object method = --- cm

2. u-v method

S.NO	Object distance u (cm)	Image distance v (cm)	Focal length $f = \frac{u \times v}{u + v}$ (cm)

Average focal length of the concave mirror using u-v method = --------cm

EXPERIMENT NO 7 **CONCAVE MIRROR**

DATE:

AIM:

To find the focal length of the concave mirror by (i) distant object method, (ii) u –v method, (iii) u-v graph method, (iv) 1/u-1/v graph method

APPARATUS:

A source of light, concave mirror, a v-stand, white screen and a metre scale

FORMULA: (i)focal length of the concave mirror by u-v method $f = \frac{u \times v}{u + v}$ cm

Where u and v are the distances of the object and image respectively from the mirror.

(ii) focal length from u-v graph f= $\frac{OA + OB}{4}$ cm (where OA, OB are the intercepts on x and y axes when the graph is bisected at 45°)

(iii) focal length from 1/u-1/v graph f= $\frac{2}{OA + OB}$ cm where OA, OB are the intercepts on x and y axes respectively

PROCEDURE:

1.Mount the mirror on the holder. Find the rough focal length of the given concave mirror by focusing a sharp clear and inverted image of the distant object. 2. Keep the position of the source along the principal axis of the concave mirror at a distance more than two times the focal length and adjust the position of the screen, in the same side as that of the object, Obtain a real, inverted image of the object.3. Note the distances of the object and distance of the image from the mirror. 4. Repeat the procedure for different positions of the object.

RESULT: Focal length of the concave mirror by

(i) distant object method= ---cm

(ii) u-v method = --- cm

(iii) u-v graph method = ---- cm

(iv) 1/u-1/v graph method = ---cm

PRECAUTIONS:

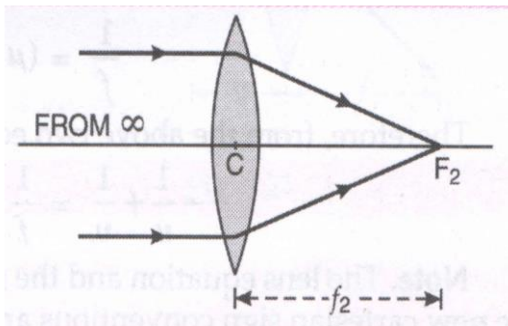
1. The object, the centre of the mirror and the screen should at the same height from the table.2. The image on the screen should be sharp

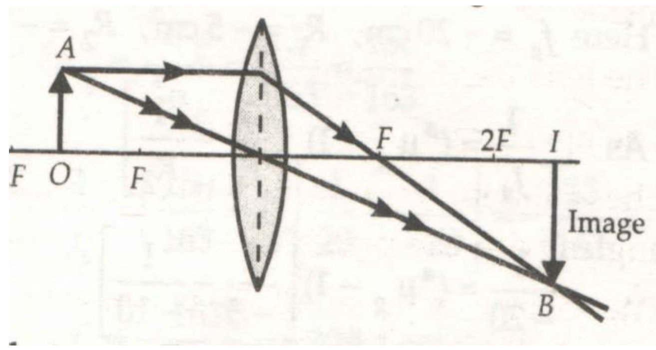
SOURCES OF ERROR:1.The markings on the scale may not be accurate

2. The parallax error in locating position of image may not be perfect

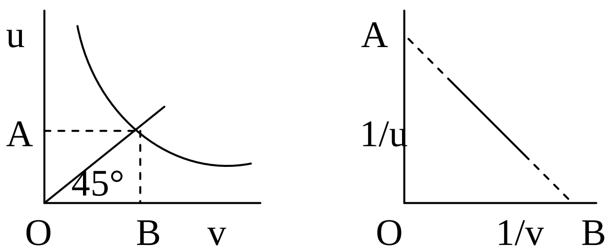
EXPERIMENT NO. 8 **<u>CONVEX LENS</u>**

(TO BE WRITTEN ON THE LEFT SIDE OF THE RECORD:)





Model graphs



1.Focal length of the convex lens by distant object method = --- cm

2. u-v method

S.NO	Object distance u (cm)	Image distance v cm)	Focal length $f = \frac{u \times v}{u + v}$ (cm)

The average focal length of the convex lens using u-v method = …………cm

EXPERIMENT NO. 8 **CONVEX LENS**

DATE:

AIM:

To find the focal length of the convex lens by (i) distant object method, (ii) u –v method, (iii) u-v graph method, (iv) 1/u-1/v graph method

APPARATUS:

A source of light, convex lens, a v-stand, white screen and a meter scale

FORMULA: (i)focal length of the convex lens by u-v method $f = \frac{u \times v}{u + v}$ cm

Where u and v are the distances of the object and image respectively from the convex lens.

(ii) focal length from u-v graph $f = \frac{OA + OB}{4}$ cm (where OA, OB are the intercepts on x and y axes when the graph is bisected at 45°)

(iii) focal length from 1/u-1/v graph $f = \frac{2}{OA + OB}$ cm where OA, OB are the intercepts on x and y axes respectively

PROCEDURE: 1. Mount the lens on the holder. Find the rough focal length of the given convex lens by focusing a sharp clear and inverted image of the distant object. 2. Keep the position of the source along the principal axis of the convex lens at a distance more than two times the focal length and adjust the position of the screen, other side as that of the object to obtain a real, inverted image of the object.3. Note the distance of the object and distance of the image from the lens.

4. Repeat the procedure for different positions of the object.

RESULT: Focal length of the convex lens by

(i) distant object method= ---cm

(ii) u-v method = --- cm

(iii) u-v graph method = ---- cm

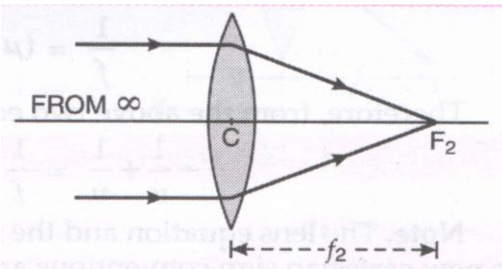
(iv) 1/u-1/u graph method = ---cm

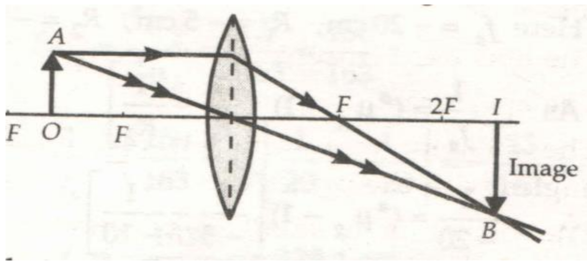
PRECAUTIONS: 1 The object, the centre of the lens and the screen should at the same height from the table.2. The image on the screen should be sharp

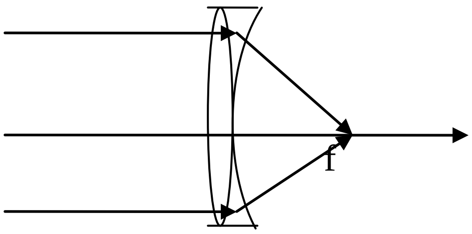
SOURCES OF ERROR: 1The markings on the scale may not be accurate 2. the parallax error in locating position of image may not be perfect

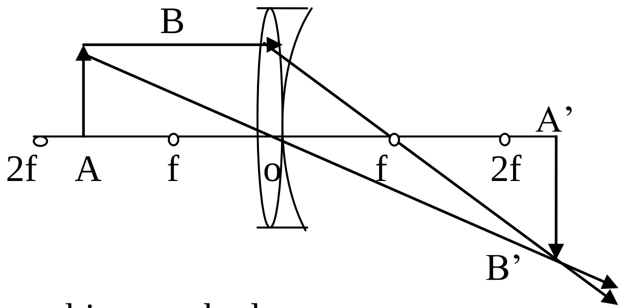
EXPERIMENT NO. 9 **CONCAVE LENS**

(TO BE WRITTEN ON THE LEFT SIDE OF THE RECORD:)









Focal length of the convex lens by distant object method = ---cm

2. u-v method for single convex lens

S.NO	Object distance u (cm)	Image distance v (cm)	Focal length f= $\frac{u \times v}{u + v}$ (cm)

The average focal length of the convex lens by u-v method f = --- cm

S.NO	Object distance u (cm)	Image distance v (cm)	Focal length f= u v/(u+v) (cm)
		–	

EXPERIMENT NO. 9 **CONCAVE LENS**

DATE:

AIM:

To find the focal length of the concave lens, using convex lens by lens combination method keeping the lenses in contact

APPARATUS:

A source of light, convex lens, a concave lens, a v-stand, white screen and a metrescale

FORMULA:

(i)focal length of the concave lens by u-v method $f = \frac{u \times v}{u + v}$ cm

Where u and v are the distances of the object and image respectively from the convex lens.

(ii) focal length of combined lens by u-v method $F = \frac{u \times v}{u + v}$ cm where u and v are the distances of the object and image respectively from the combined lens.

(iii)focal length of the concave lens $f_{concave} = \frac{f \times F}{f - F}$ cm

PROCEDURE:

1.Mount the lens on the holder. Find the rough focal length of the given convex lens by focusing a sharp clear and inverted image of the distant object. 2. Keep the position of the source along the principal axis of the convex lens at a distance more than two times the focal length and adjust the position of the screen, other side as that of the object, Obtain a real, inverted image of the object.3. Note the distance of the object and distance of the image from the lens. 4. Repeat the procedure for different positions of the object. 5. Repeat the same procedure for the combined lens and note down the readings of u and v 5. Using the average value of f and F, focal length of the concave lens is calculated using the above formula.

RESULT:

(i)Focal length of the convex lens by= --- cm

(ii)Focal length of the combined lens u-v method = --- cm

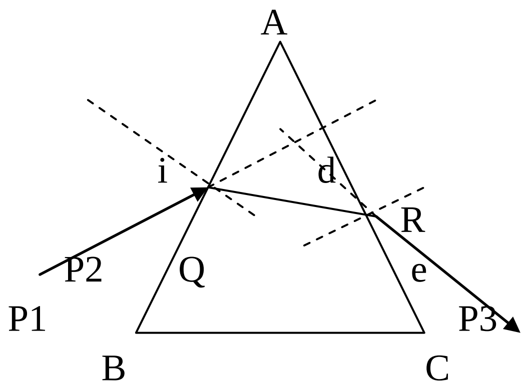
(iii) Focal length of the concave lens = --- cm

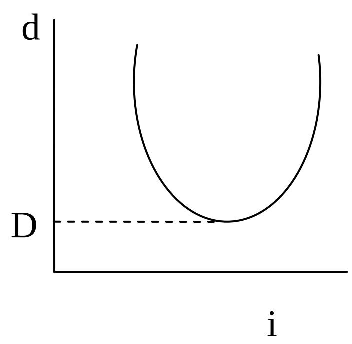
PRECAUTIONS: 1 The object, the centre of the lens and the screen should at the same height from the table.2. The image on the screen should be sharp

SOURCES OF ERROR: 1.The markings on the scale may not be accurate 2. The parallax error in locating position of image may not be perfect

EXPERIMENT NO. 10 **GLASS PRISM**

(TO BE WRITTEN ON THE LEFT SIDE OF THE RECORD:)





S.NO.	ANGLE OF INCIDENCE (°)	ANGLE OF DEVIATION(°)

EXPERIMENT NO. 10 **GLASS PRISM**

DATE:

AIM:

To determine the angle of minimum deviation for a given glass prism by plotting a graph between the angle of incidence and the angle of deviation.

APPARATUS:

A glass prism, drawing board, pins, white paper, sharp pencil, metre scale and protractor

PROCEDURE:

1.Fix a white sheet of paper on the drawing board with the help of fixing pins.

2.Draw the outline of the prism. Mark A. B and C near the vertices of the triangle.

3. Take a point Q on the boundary and draw normal NN’ at that point to the side AB. Draw a line PQ at an angle 35º with the normal. 4. Fix two pins on the line PQ vertically to the plane of the paper such that the distance between the pins is about 10cm. The line joining P1 and P2 acts as incident ray. 5. Position the prism on the boundary again. 6. Observe the two pins in a straight line from the side BC and keep two more pins such that all the four pins appear to be in a straight line.

7. Remove the prism. Mark the positions of all pins. Line joining the P3 and P4 acts as emergent ray. 8. The angle between the extended incident ray and emergent ray gives the angle of deviation.9. Repeat the procedure for the angle of incidence 40º, 45.º 50º, and 55º and measure the angles of deviation.

RESULT:

1. The angle of minimum deviation from i versus d graph is = ---

PRECAUTIONS:

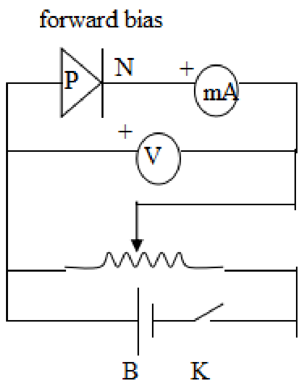
1 All the pins should be vertical. 2. The surface of the glass prism should be clean 3. While plotting i versus d graph a smooth free hand curve should be drawn to ensure that a maximum number of points lie on the curve.

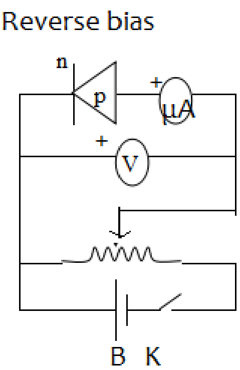
SOURCES OF ERROR:

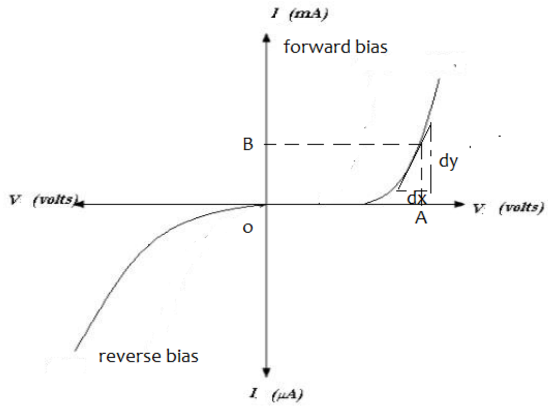
1. The protractor may not be properly marked 2. parallax error may bring wrong marking.

EXPERIMENT NO. 11 **DIODE**

(TO BE WRITTEN ON THE LEFT SIDE OF THE RECORD)







s.no.	FORWARD BIASING		REVERSE BIASING	
	Voltmeter reading (v)	Ammeter reading (mA)	Voltmeter reading (v)	Ammeter reading (μA)

EXPERIMENT NO. 11 **DIODE**

DATE:

AIM: To draw the I-V characteristic curve for a p-n junction diode in forward bias and reverse bias.

APPARATUS: A p-n junction diode, a battery of 6 volts, a resistance box, a rheostat, voltmeter, a milli ammeter and a micro ammeter, a one-way key and few connecting wires.

FORMULA: (i) Static resistance $R_{dc} = V/I = OA/OB\ \Omega$

(ii) dynamic resostamce $R_{ac} = \Delta V/\Delta I = \Delta x/\Delta y$

PROCEDURE: 1. Draw a neat and labeled circuit diagram for forward biasing of the diode.. Make connections and ensure that the milliammeter is joined in series and the voltmeter is connected in parallel across the p-n junction.

2. Adjust the position of potential divider by bringing it near the negative end. 3. Note the readings of voltmeter and ammeter. 4. Repeat the procedure for different positions of the potential divider by moving it towards the positive end in steps.

5. plot the V versus I and find the dynamic and static resistance of the diode. 6. Draw a neat labeled diagram for reverse biasing of the diode. Make the connections as in the circuit diagram. Repeat the same procedure as above and note down the readings of microammeter and voltmeter in the tabular column. 7. Draw the graph between V and I .

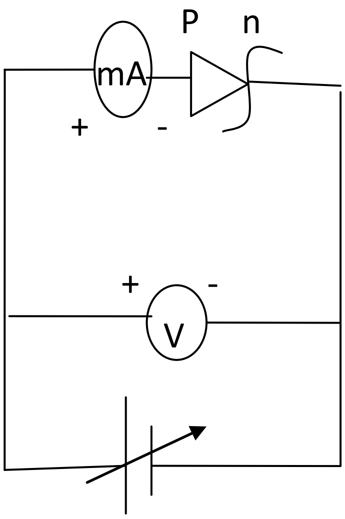
Result: The V-I characteristics of a p-n junction diode in forward and reverse bias are plotted

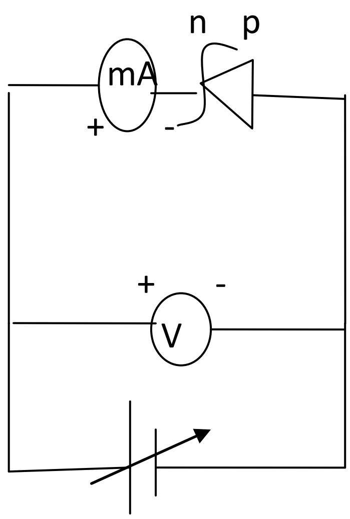
PRECAUTIONS;1 All connections should be neat, clean and tight.2 The forward bias voltage beyond breakdown should not be applied. 3. zero error must be recorded and necessary correction must be applied.

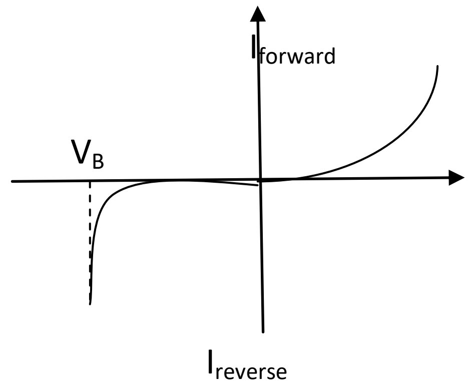
SOURCES OF ERROR: 1. The markings on the milli ammeter and voltmeter may not be accurate.2. the p-n junction diode supplied may be faulty.

EXPERIMENT NO. 12 **ZENER DIODE**

(TO BE WRITTEN ON THE LEFT HAND SIDE OF RECORD)







s.no	Forward bias		Reverse Bias	
	Voltmeter reading volts	Ammeter reading mA	Voltmeter reading volts	Ammeter reading mA

EXPERIMENT NO. 12 **ZENER DIODE**

DATE:

AIM:

To draw the characteristics of a zener diode and to determine its reverse breakdown voltage:

APPARATUS:

A zener diode, a rheostat, dc power supply, with potential divider, milli ammeter, a voltmeter and connecting wires.

PROCEDURE:

Draw a neat circuit diagram as shown. Using connecting wires, join various parts of the apparatus. Ensure the zener is forward biased as shown in the circuit diagram. Connect the ammeter in series and voltmeter in parallel with the diode as shown. Vary the voltage applied across the diode and note down voltmeter reading and ammeter reading and tabulate them. Now connect the diode to the reverse bias as shown in the circuit diagram. Slowly increase the reverse voltage across the diode and note down the readings in the voltmeter and the ammeter. You will notice a sudden increase in the reverse current at a particular voltage and note it down. This voltage represent the reverse breakdown voltage. Record all the readings in the given table.

RESULT:

The forward and reverse characteristics of the diode are drawn.

The reverse breakdown voltage=-----------