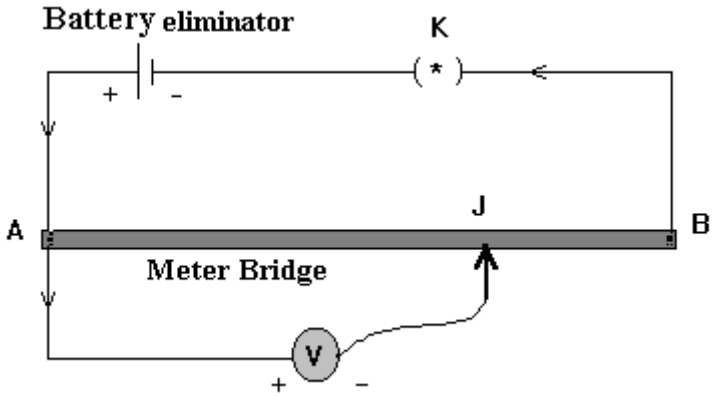
PRACTICAL: 10

Potential difference per unit length of given wire Meter Bridge

AIM: To fine potential difference per unit of a given wire by meter bridge.

APPARATUS: Battery eliminator, one-way key, jockey, meter bridge, voltmeter, connecting wire.



PROCEDURE:

1. Connect the circuit as shown in figure.
2. Keep the jockey or the potentiometer wire at the length (say 10 cm). Note the corresponding voltage reading.
3. Repeat the same for different values of length (say 20, 30, 40, 50cm….).
4. Put these values in observation table.
5. Draw the graph of voltage Vs length. Note the slope. The graph should be straight line and it pass from zero.

OBSERVATIONS:

i) Range of Meter Bridge =_____ cm

ii) Range of Voltmeter =_____ V

iii) Least count of voltmeter = _____ V

iv) E.M.F of cell = _____V

OBSERVATION TABLE:

Sr. No.	Length of wire ***l*** **cm**	Voltage **V volt**	Potential Difference **P.D. = Voltage/Length**	**Average P.D.**
1				
2				
3				
4				
5				
6				
7				
8				
9				
10				

GRAPH: Voltage (**V**) *Vs* Length of wire(***l***).

RESULT:

- **Potential difference per unit length of given wire is _____ V/cm.**

Precautions:

i. The signs of the terminals should be clearly shown in the circuit diagram.
ii. Clean the ends of the connecting wires with sand paper before making the connections.
iii. Remove the key, when the readings are not being taken.
iv. Take care that the cell is not short circuited.
v. The range of voltmeter should be more than the emf of the cell.
vi. The connections should be tight.
vii. Do not allow the current to pass for a very long time.
viii. Do not slide the jockey on the wire.

VIVA-VOCE:

i. What is current? Give its unit.
ii. Define potential difference and give its unit.
iii. Define ohms law.
iv. Does resistance of wire vary with temperature?
v. State relation between potential difference and length of wire.
vi. What is a meter bridge?
vii. What the length of meter bridge?
viii. Why the metal strips fixed on meter bridge are made thick?