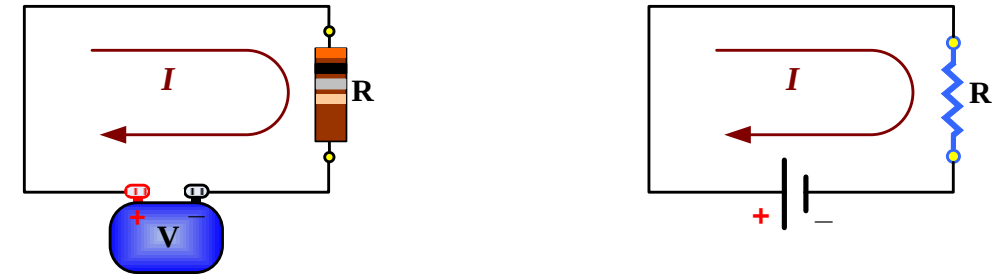
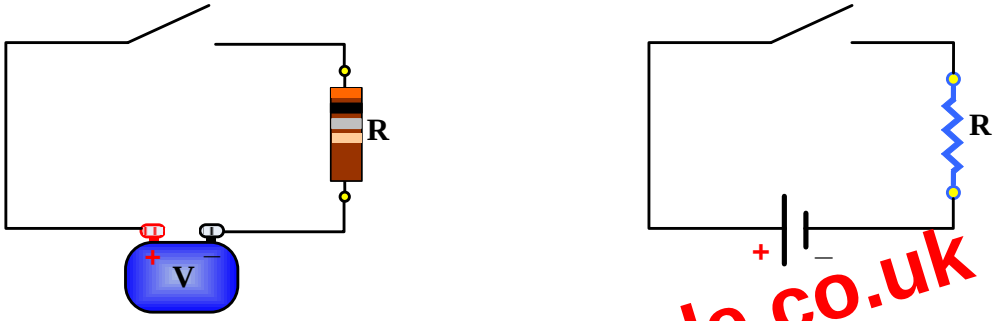
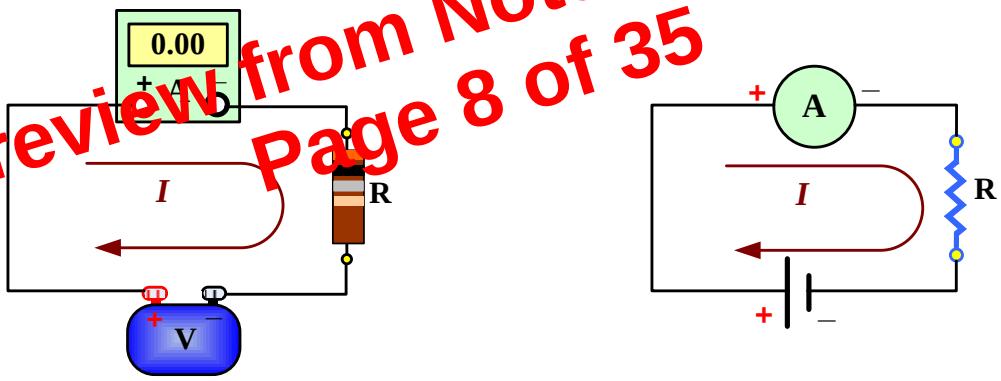
Figure(1) illustrates how to connect ammeter in the circuit and measure the current.




**(a) Circuit in which the current is to be measured.**




**(b) Open the circuit between the resistor and the positive terminal of battery.**




**(c) Install the ammeter in the current pass with polarity as shown (negative to negative, positive to positive)**

***Figure 1: Example of an ammeter connection***

**TITLE:** *Ohm's law*

**OBJECTIVE:-** Verification of Ohm's Law

Ohm's law is the most important mathematical relationship between voltage, current and resistance in electricity.

$$V = I X R$$

It is important to know how to read the resistors' colour code and hence its ohmic value. In the following figure it shows a table of the meaning of each colour. For example, for the resistor in the figure(1),the value of the resistor is 200kΩ,since the band 1 is red i.e. equivalent to 2 in the table ,band 2 is black equivalent to zero in the table and the band 3 is yellow indicating of a multiplier of 10,000.see at the bottom of the figure.

The fourth band is the tolerance band i.e the percentage of error. It usually comes in two colors ,the silver indicates ±5% and the gold indicates ±10%.so for example, the value resistor will lie between 210kΩ and 190kΩ.



## *Procedure*

1. Select a number of different resistors
2. Use the table below to determine their values
3. Use ohmmeter to measure the same resistors you figured out
4. Compare your calculated values with the readings you obtained

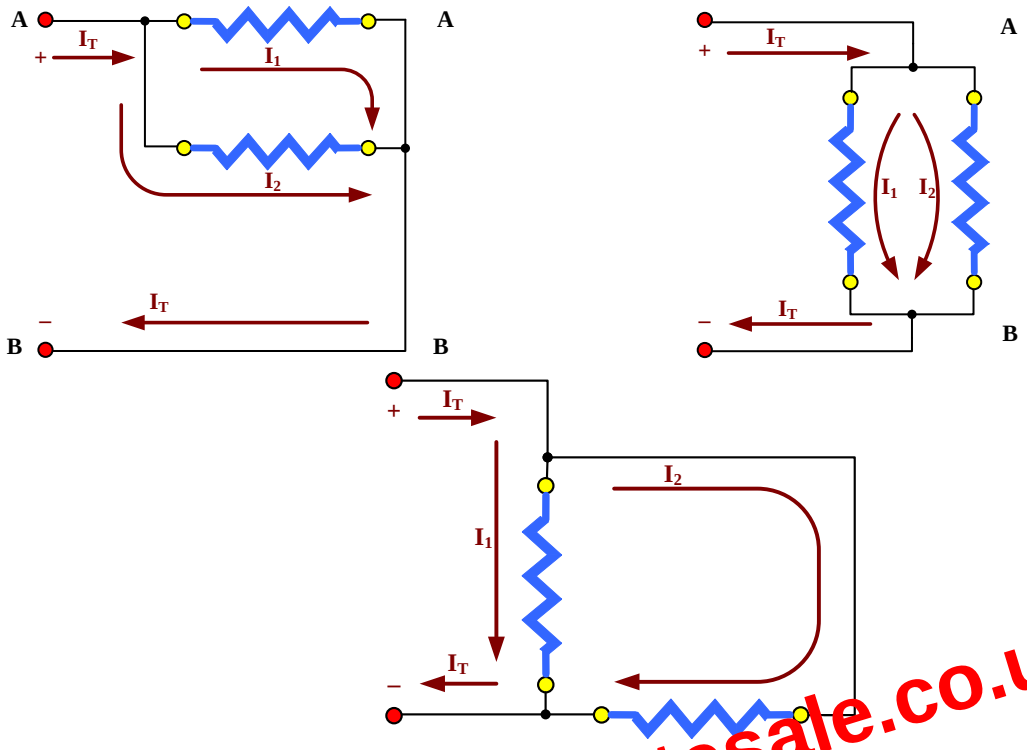



*Figure1: Differe*

of a capacitor?

Q3) State 1 application for capacitors?

Q4) complete the following:

- If the ohmmeter reading move toward zero and then slowly returns to infinity means ……
- the ohmmeter move towards zero and remain at zero means ……
- If the reading doesn't change and remains at infinity means ……

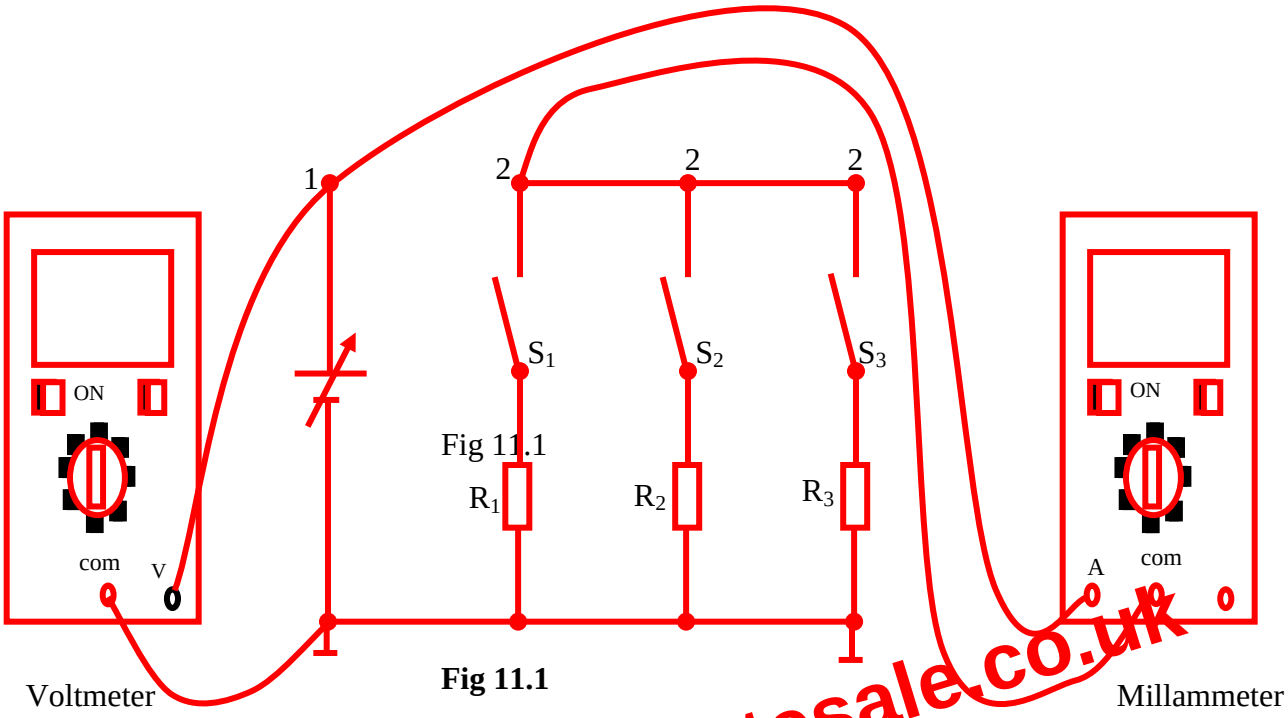



Fig 11.1

**Fig 11.1**



***Table 11.1: Obtained Results***

| $VR_1$ [V] | $I_1$ [mA] | $VR_2$ [V] | $I_2$ [mA] | $VR_3$ [V] | $I_3$ [mA] | $I_1$ [mA] | $I_2$ [mA] | $I_3$ [mA] | $\sum I = 0$ |
|---|---|---|---|---|---|---|---|---|---|
| **Measured Value** | | | | | | **Calculated value** | | | |
| | | | | | | | | | |