

Northern University Of Bangladesh

Experiment No-2: Study and demonstration of series and parallel circuit.

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Section : A

Course Name : Electrical Engineering & Circuit Analysis Lab Course

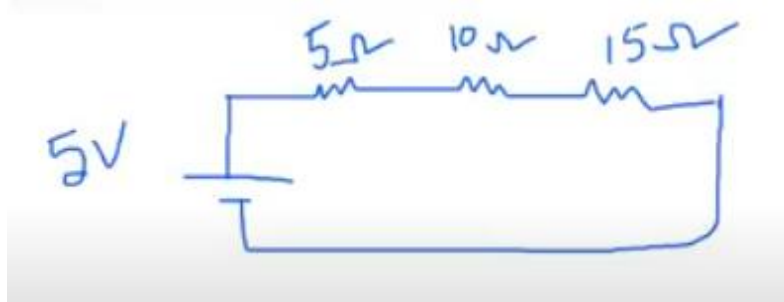
Code : CSE 1259

Result and Discussion:

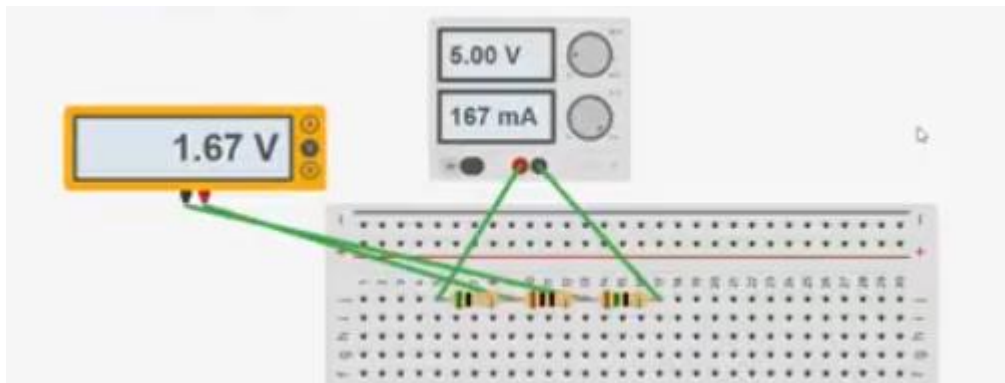
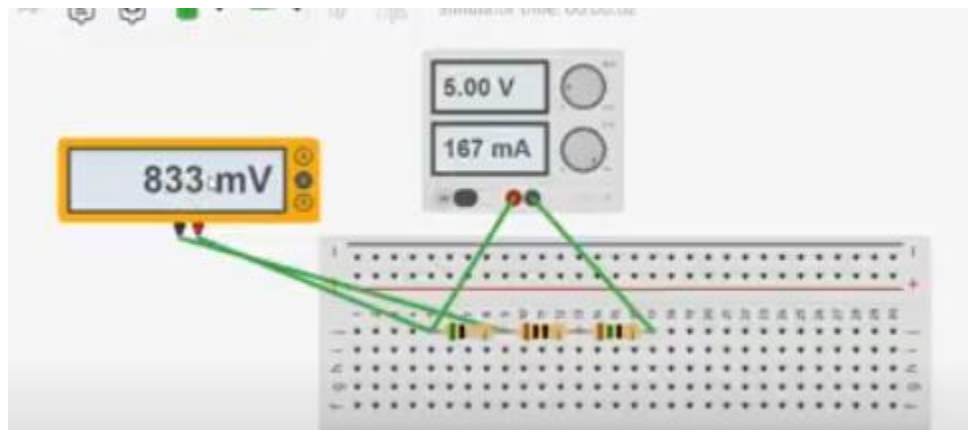
Series circuit: A series circuit is one in which all circuit elements are arranged in a single path.

1. in series circuit current are same and voltage are different. if we sum all dropped voltage then we will get total main given voltage.

Let consider this circuit



Here $R_{eq} = 30\Omega$ and $I = 5/30 = 0.167A$. Now for the 5Ω voltage drop is $0.83V$ for the 10Ω voltage drop is $1.67V$ & for the 15Ω voltage drop is $2.5V$. Now if we calculate the all voltage drop then $0.83 + 1.67 + 2.5 = 5V$ which is main voltage.



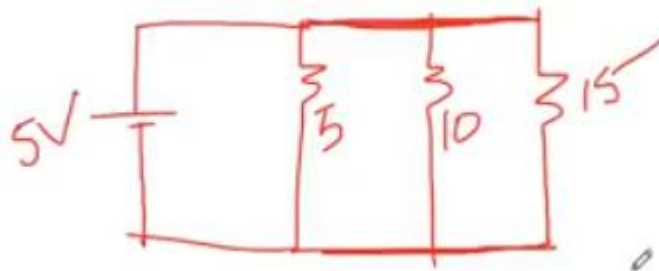


2. In series circuit the more resistance the more voltage drop .
3. In series circuit R_{eq} will be greater than the highest resistance. ($30 > 15$)

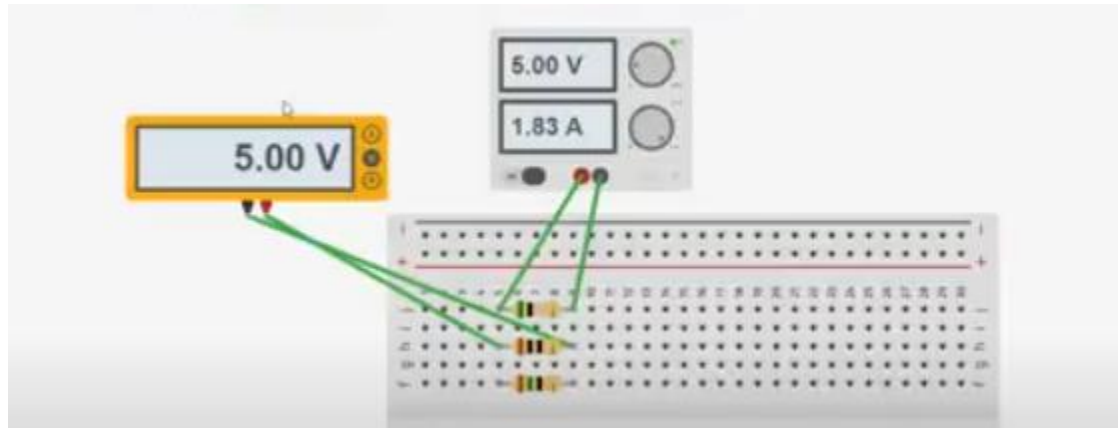
Parallel circuit: parallel circuit, an electrical path that branches so that the current divides and only part of it flows through any branch

1. In parallel circuit voltage are same and current are different. . If we sum all current of the resistors then we will get total main current.

Let's consider this circuit



Here $R_{eq} = 2.72\Omega$ and $I = 5/2.72 = 1.83A$. Now for the 5Ω current is $1A$ for the 10Ω current is $0.5A$ & for the 15Ω current is $0.33A$. Now if we calculate the current across the resistance then $1 + 0.5 + 0.33 = 1.83A$ which is current. Main current $1.83A$ will be divided into three individual current which are $1A$, $0.5A$ & $0.33A$



2. In parallel circuit the more resistance the less current & the less resistance the more current.
3. In parallel circuit R_{eq} will be less than the lowest resistance. ($2.75 < 5$)