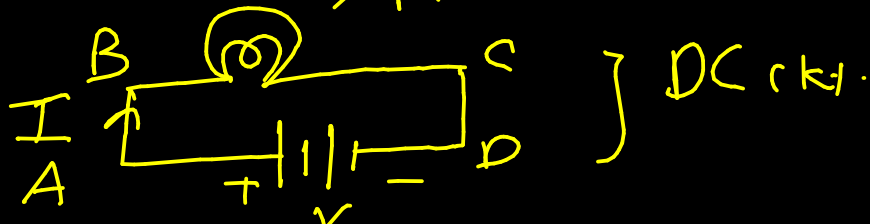


# EEEE - LECT 1

## Module 1 :- DC circuit

### DC circuit →

- ① Source, → battery or generator
- ② Conductor →
- ③ Load → Resistive load

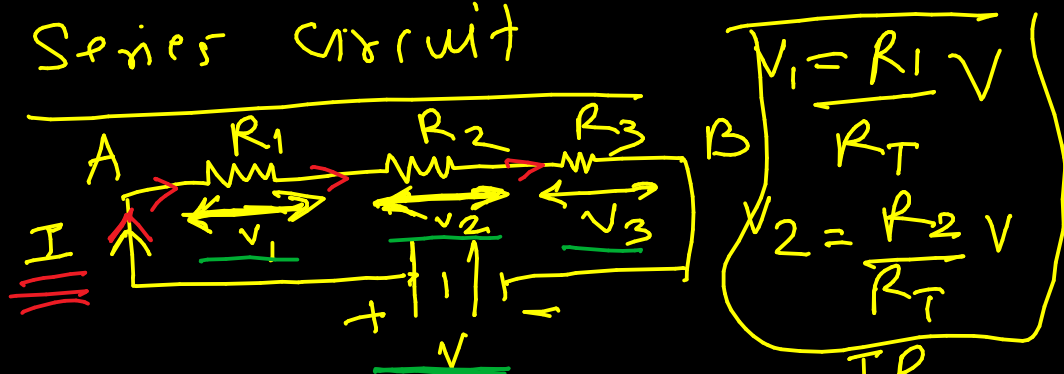


### DC → classified

- ① Series DC circuit
- ② Parallel circuit
- ③ Series parallel circuit

### Voltage divider rule, → Current division rule

#### Series circuit



Voltage drop across  $R_1$ ,  $V_1 = IR_1$

—————  $R_2$ ,  $V_2 = IR_2$

—————  $R_3$ ,  $V_3 = IR_3$

$$\begin{aligned}
 V &= V_1 + V_2 + V_3 \\
 &= IR_1 + IR_2 + IR_3 \\
 &= I(R_1 + R_2 + R_3) \\
 \frac{V}{I} &= R_1 + R_2 + R_3
 \end{aligned}$$

Note: —

- ① Current flowing through each resistance is same
- ② The applied voltage equals the sum of different voltages.
- ③ Every resistor of the circuit has its own voltage drop

### Voltage divider rule

$$V_1 = \underline{I} R_1$$

$$I = \underline{\underline{\frac{V}{R_T}}}$$

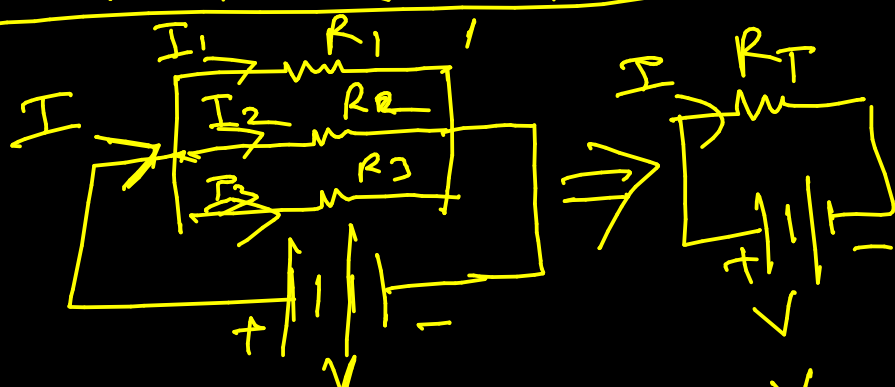
$$V_1 = \frac{V R_1}{R_T}$$

$$V_2 = \underline{I} R_2$$

$$V_2 = \frac{V R_2}{R_T}$$

$$V_3 = \frac{V R_3}{R_T}$$

#### Parallel circuit



Current through  $R_1 = I_1 = \frac{V}{R_1}$

—————  $R_2 = I_2 = \frac{V}{R_2}$

—————  $R_3 = I_3 = \frac{V}{R_3}$