Exp 4 :- DC circuits

- $R = \frac{\text{Voltage}}{\text{Current}} = \frac{V}{I}$ = فرق الكمون = Potential difference / شدة التيار = Current flowing

Resistance of a metalic conductor

Materials:
- ohmic : V depends linearly on I
- non-ohmic : V does not depend linearly on I

Equivalent Resistance of 2 Resistors

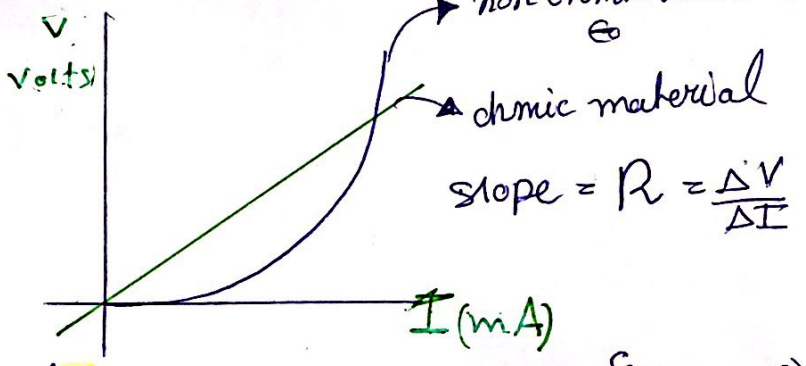
I is the same for R_1 & R_2

$R_{serie} = R_1 + R_2$

$\frac{1}{R_{parallel}} = \frac{1}{R_1} + \frac{1}{R_2}$

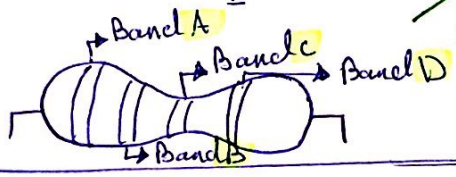
V is the same for R_1 & R_2

$\Rightarrow \frac{\Delta R}{R} = \frac{\Delta V}{V} + \frac{\Delta I}{I}$



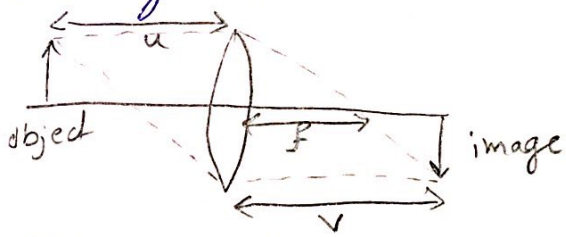
slope $= R = \frac{\Delta V}{\Delta I}$

Color code



$R\ [\text{Theoritically}] = AB \times 10^{C} \pm (D \times *R)$

Exp 5 :- Focal length of a Convex lens



Focal length :
- The distance between the lens and the point of convergence of the light rays coming from the infinity

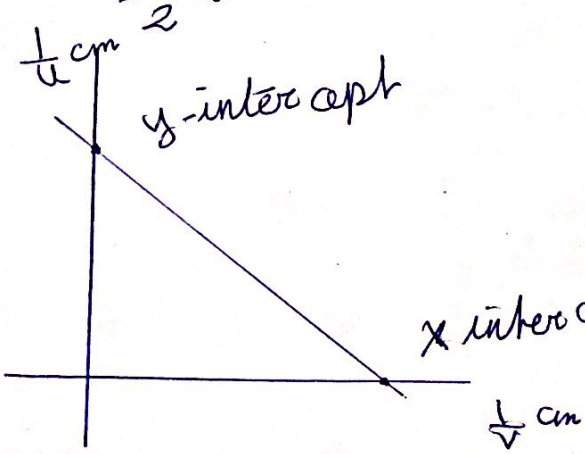
Focal length $\frac{1}{f} = \frac{1}{u} + \frac{1}{v}$ ($\frac{1}{u}$: y-intercept, $\frac{1}{v}$: x-intercept)

$\Rightarrow f = \frac{f_x + f_y}{2}$

$\frac{\Delta f}{f^2} = \frac{\Delta u}{u^2} + \frac{\Delta v}{v^2}$

$f_x = f_y$ (Theoritically)

$\frac{1}{\text{x intercept}} = \frac{1}{\text{y-Intercept}}$



Alaa Hairwi