OBSERVATION:

$E_g = eV_o = h\nu = hc/\lambda$

$h = eV_o\lambda/c$ Js

LED	Wavelength (λ) nm	Turn on Voltage (V_o) Volt	Energy $E = eV_o$	$h = E\lambda/C$ Js
Blue	450	2.41	3.86082×10^{-19}	5.790×10^{-34}
Green	525	2.14	3.42828×10^{-19}	5.999×10^{-34}
Orange	610	1.62	2.5952×10^{-19}	5.27×10^{-34}
Red	660	1.63	2.61126×10^{-19}	5.74×10^{-34}

OBSERVATION:

$E_g = eV_o \rightarrow h\nu = \frac{hc}{\lambda}$

$h = \frac{eV_o\lambda}{c}$ Js

CALCULATION:

$e = 1.602 \times 10^{-19}$ Energy (eV_o)

Blue = $1.602 \times 10^{-19} \times 2.41 = 3.86082 \times 10^{-19}$

Green = $1.602 \times 10^{-19} \times 2.14 = 3.42828 \times 10^{-19}$

Orange = $1.602 \times 10^{-19} \times 1.62 = 2.5952 \times 10^{-19}$

Red = $1.602 \times 10^{-19} \times 1.63 = 2.61126 \times 10^{-19}$

Blue = $C/\lambda = \frac{3 \times 10^8}{450 \times 10^{-9}}$

Blue = 6.67×10^{15} Hz

Green = 5.714×10^{15} Hz

Orange = 4.91×10^{15} Hz

Red = 4.54×10^{15} Hz

Ex: No: 5
14.11.22

Determination of Planck's Constant