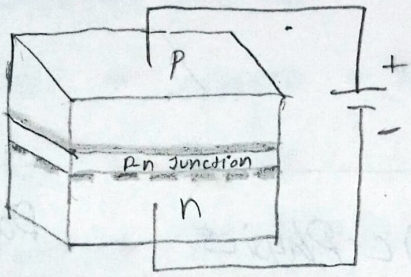
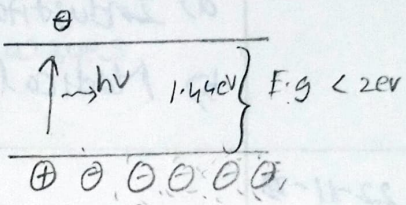
0-11-23

Day 48

* Semiconductor LASER (homo)



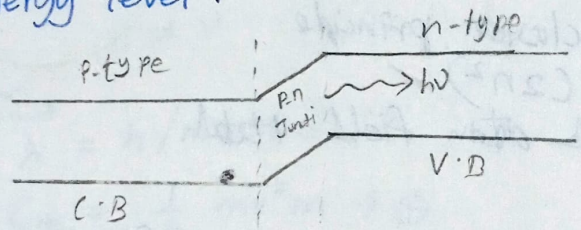


Active medium : GaAs

Pumping source : Direct current → $\bar{e}$ → hν

optical resonator : P-n Junction

Energy level :



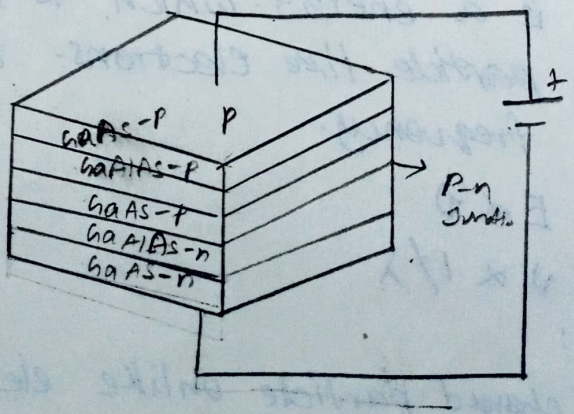
$$P = \frac{E}{t} = \frac{hc}{t\lambda} \qquad \therefore c = \nu\lambda$$

$$\nu = c/\lambda$$

$$Eg = hc/\lambda \Rightarrow \lambda = \frac{hc}{Eg} = \frac{6.621 \times 10^{-34} \times 3 \times 10^{8}}{1.44 \times 1.6 \times 10^{-19}}$$

$$= 8626\,\text{Å}$$

* Semiconductor LASER (Hetero)



Applications :

a) Industrial

b) Medical