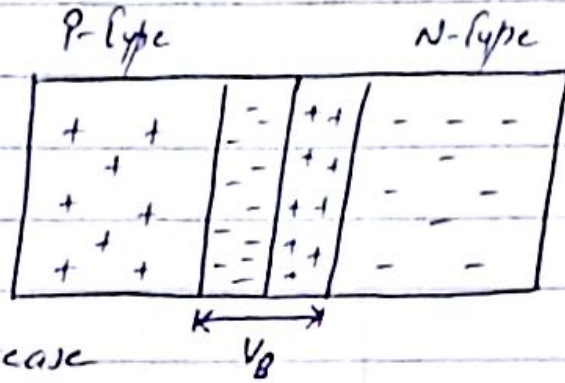


(Lecture 8)

P-N Junction diode

- Potential Barrier = V_B



- By increasing doping level, we can decrease the potential barrier.

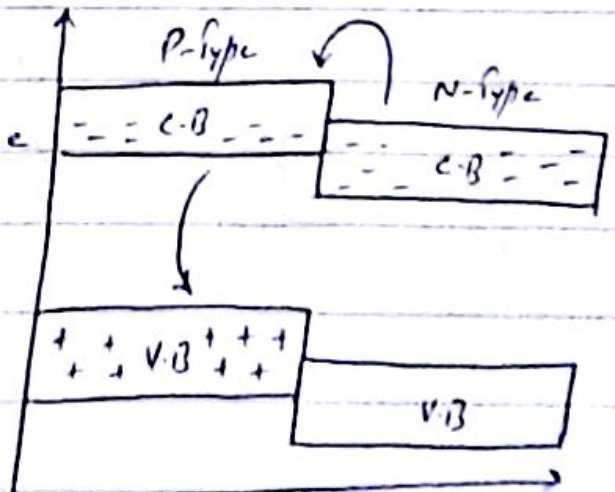
Potential Barriers for

- Silicon = $V_B = 0.7V$
- Germanium = $V_B = 0.3V$

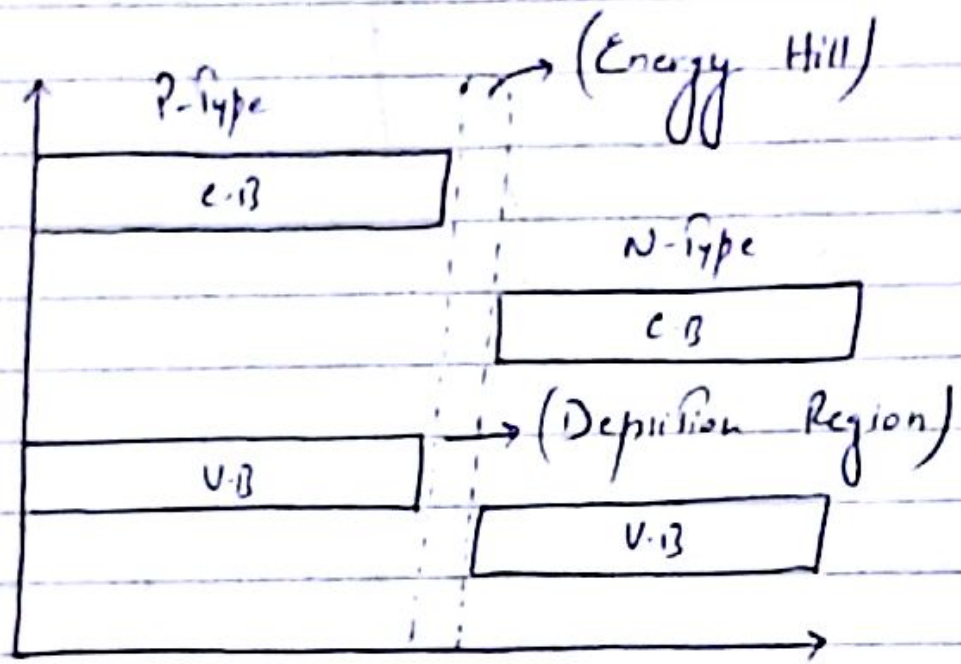
Important Question:

Explain the formation of P-N junction diode on the basis of energy band diagram?

- Diffusion of electrons will occur from N-type conduction band to p-type conduction band.



- Then the electrons in p-type conduction band will move towards V.B of p-type.
- It will called re-combination state.



- Due to the repulsion of e^- , the overlapping will disappear & depletion region will formed.
- The hill produced due to the depletion region b/w p-type or n-type materials is called "Energy Hill".

How to overcome depletion region?

Biasing:-

Provide external D.C potential to a diode in order, either to conduct or not is called Biasing.

We have two biasing conditions:

- i) Forward Biasing
- ii) Reverse Biasing