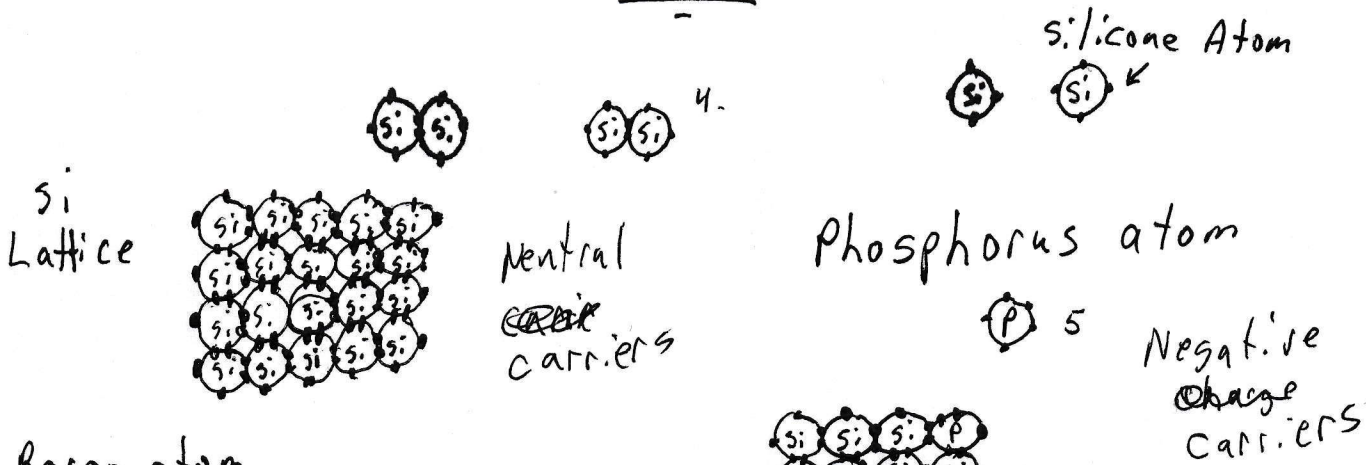
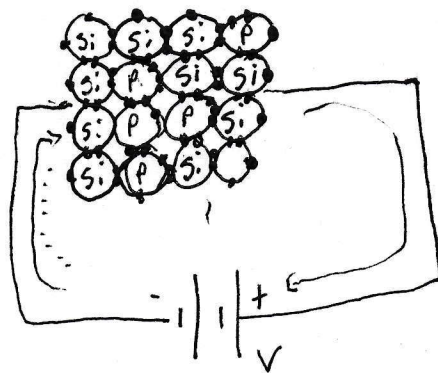


Semiconductors

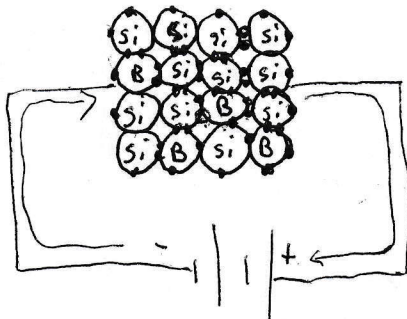
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Boron atom
Doping: Impurity
N
P



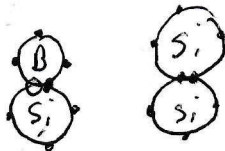
Boron atom



Positive charge carriers

Phosphorus atom

5 electrons

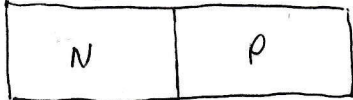


Boron 3 electrons +
Silicon 4 electrons

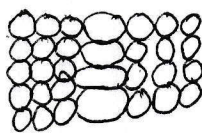
Charge Carriers

N-Type → Phosphorus - electron abundance
P-Type → Boron - Holes or Vacancies

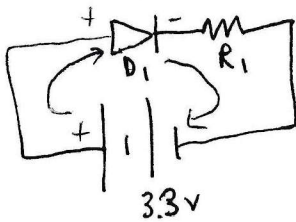
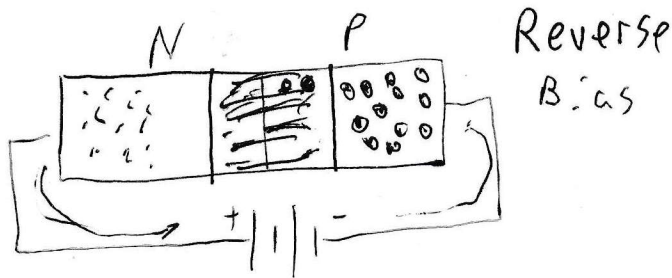
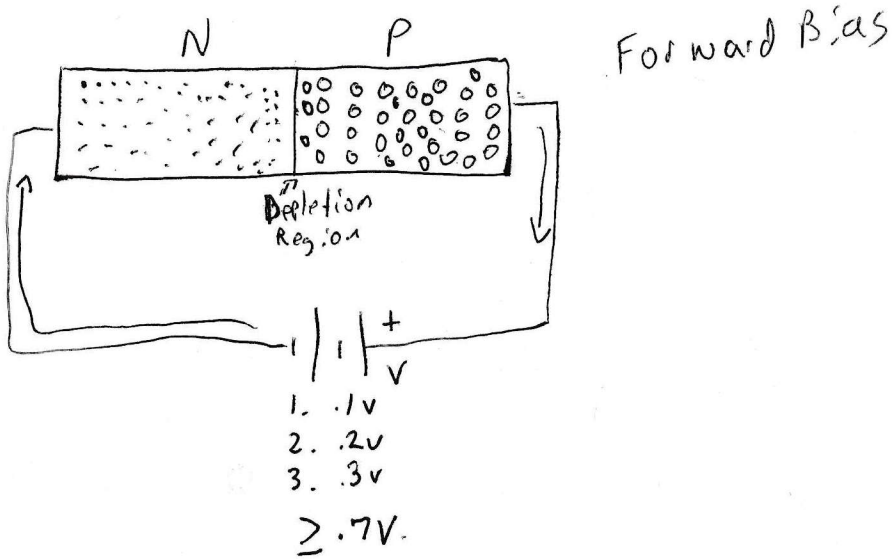
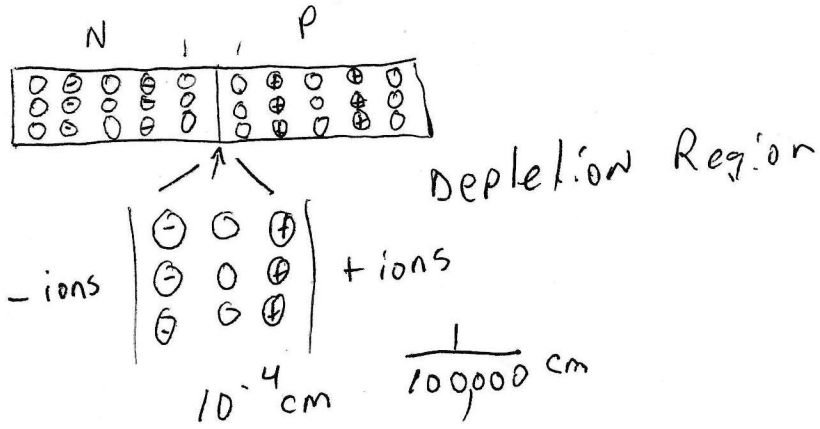
carriers: electrons carriers: ~~Protons~~ Holes



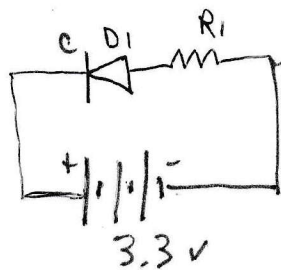
PN-Junction



Semi Conductors



Forward Biased



Cathode = N
Anode = P

Semiconductors

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