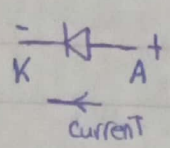
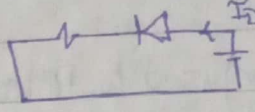
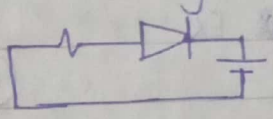
*(Diodes) 

(Electronic element permit current only to flow in one direction only)

→ Connecting diodes

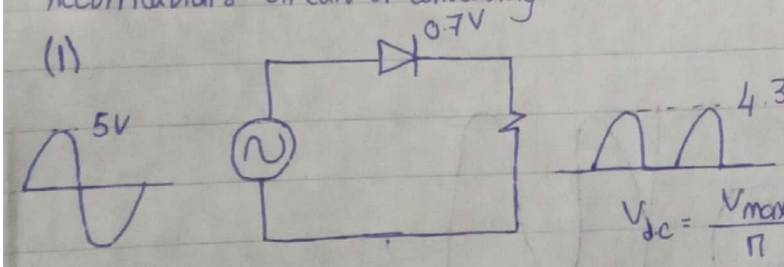
(1) Forward Bias: Connecting positive pole of the diode with (+ve) of battery and the (-ve) pole of diode with (-ve) of battery 

* Act as closed switch —•—•—

(2) Reverse Bias: Connecting positive pole of diode with (-ve) pole of battery and (+ve) pole of battery with (-ve) pole of diode. 

* Act as opened switch —•/•—

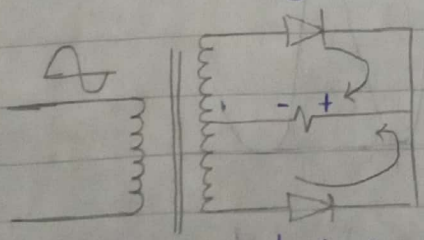
Rectification: circuit of converting AC current to DC current.

(1) 

(HALF wave Rectification)

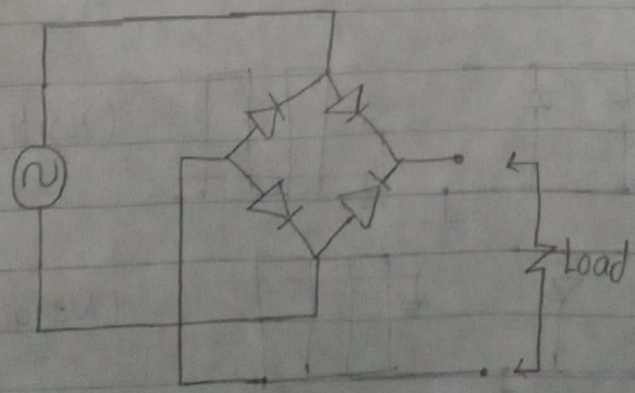
$V_{dc} = \frac{V_{max}}{\pi} = 0.318\, V_{max}$

*To increase the efficiency of output, capitor is used

(2) 
(Full wave Rectification using 2 diodes)

$V_{dc} = \frac{2V_{max}}{\pi} = 0.637\, V_{max}$

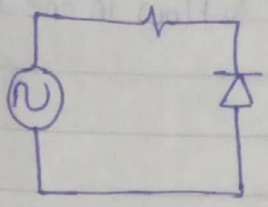
* its efficiency can be increased by using capcitor
* disadvantage: it needs a "center tapped" (CT)

(3) 

(Full wave Rectification using bridge)

* Capcitor increases efficiency.

* Can be replaced by "Bridge Rectifier"

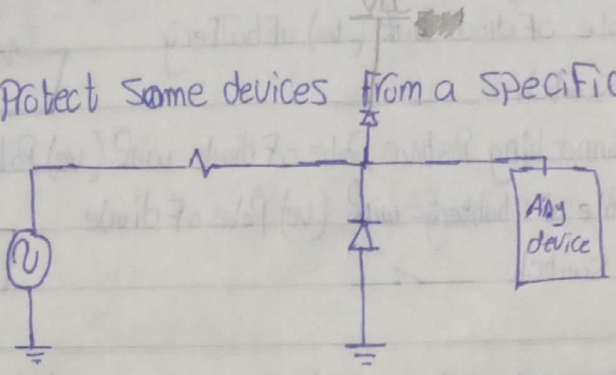


Forward Bias V=0.7V.
Reverse " V= source.

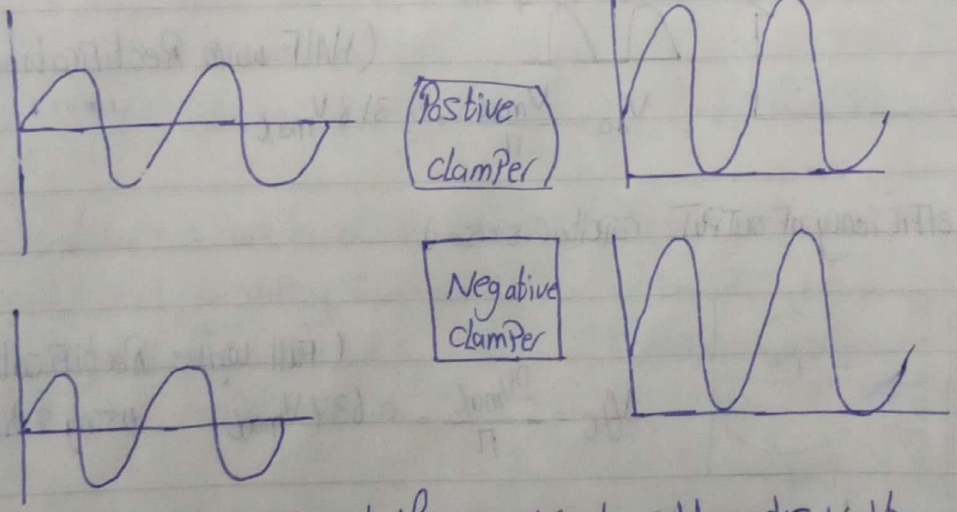
the diode is on when volt on anode is more than cathode by 0.7 volt.

* (clipper circuit) used to protect some devices from a specific volt. (High volt)

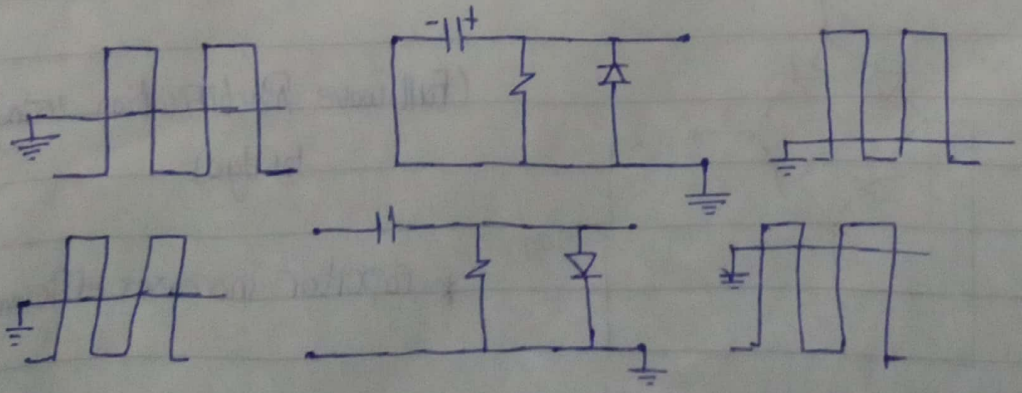
Ex



* clamper circuit



* Function: it is a circuit that works to add a dc voltage on AC current.
* Also it is called "DC Restoration".

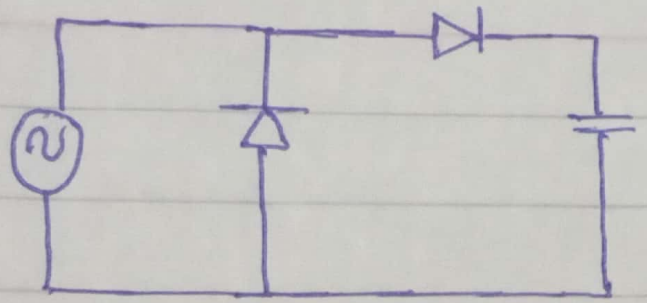


(Positive clamper)

(Negative clamper)

* we can shift the signal more by using battery before diode

Voltage multiplier



Multiplier = clamper + Rectifier.

→ used to multiple the input voltage but the input must be (AC voltage).