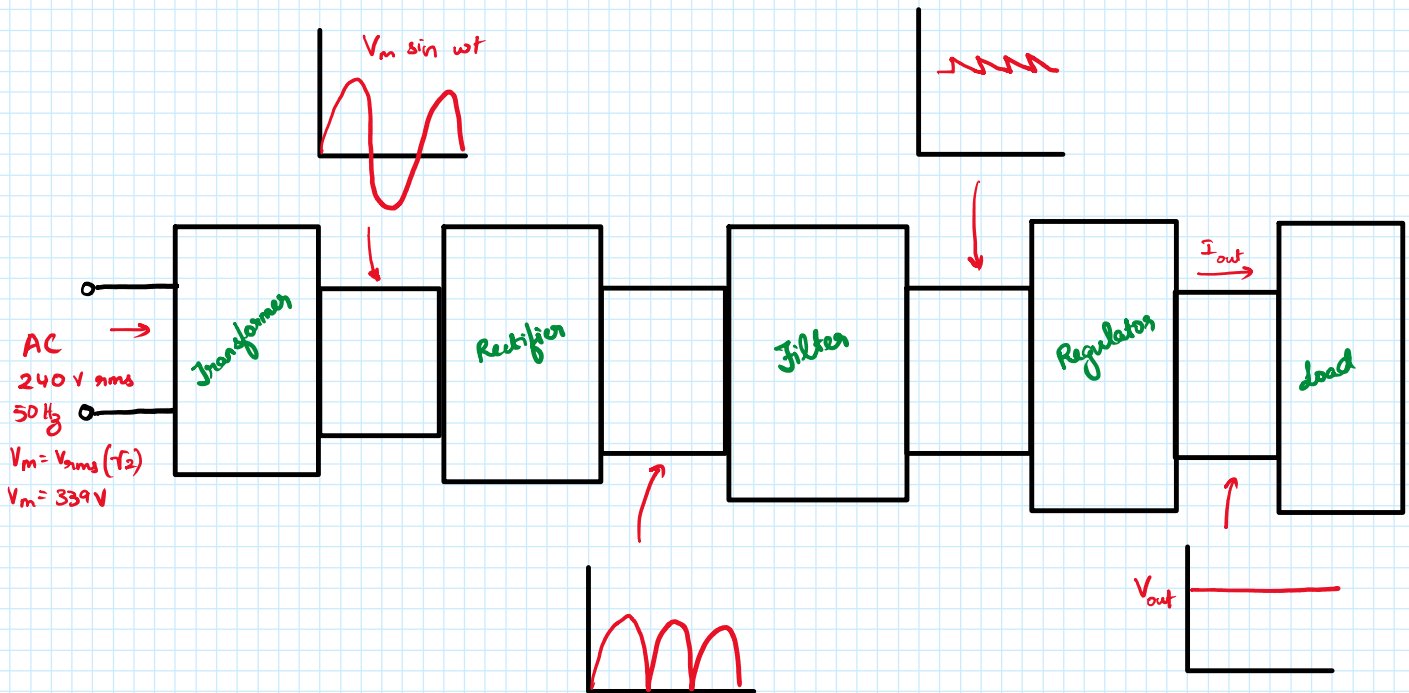


1. Regulated Power Supply, Rectifier

11 October 2023 10:57

REGULATED POWER SUPPLY



Transformer

- Takes an input of 240 V rms and 50 Hz
- It is either stepped up or stepped down to give it as input to the rectifier

Rectifier

- Converts AC into pulsating DC by allowing current to flow through the diode in series with a resistor in one direction only.

Filter

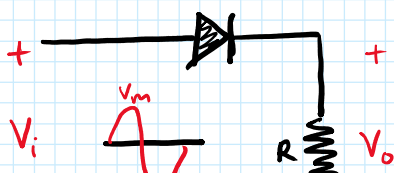
- Capacitor is connected in parallel or shunt which removes the AC ripple from DC signal obtained from rectifier.
- Results in shark tooth waveform

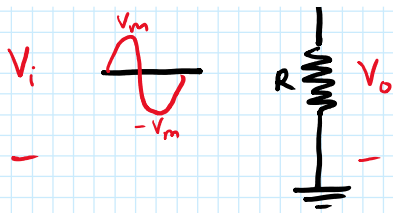
Zener regulator

- Converts DC voltage into a lower constant voltage

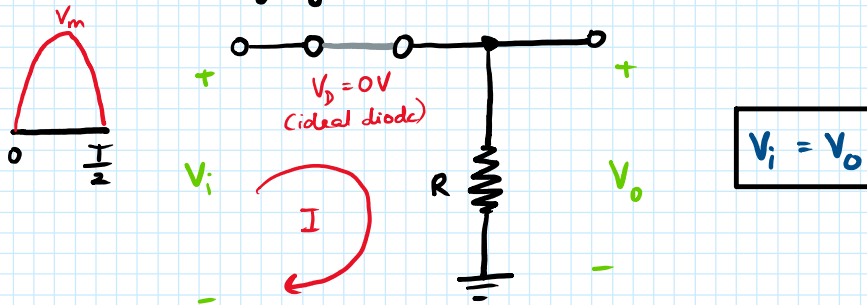
RECTIFIER

HALF WAVE RECTIFIER (ideal diode)

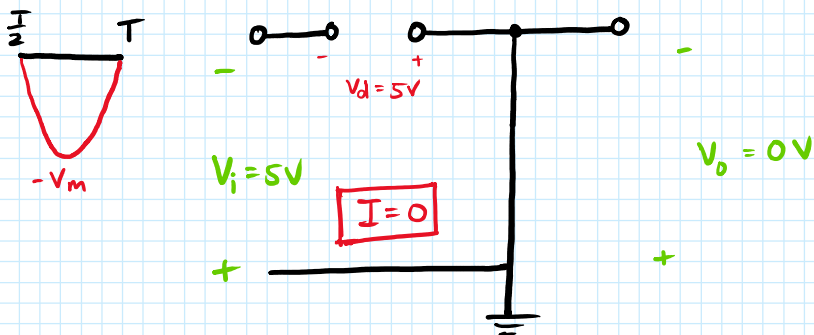




[A] Positive half cycle



[B] Negative half cycle



Complete waveform

