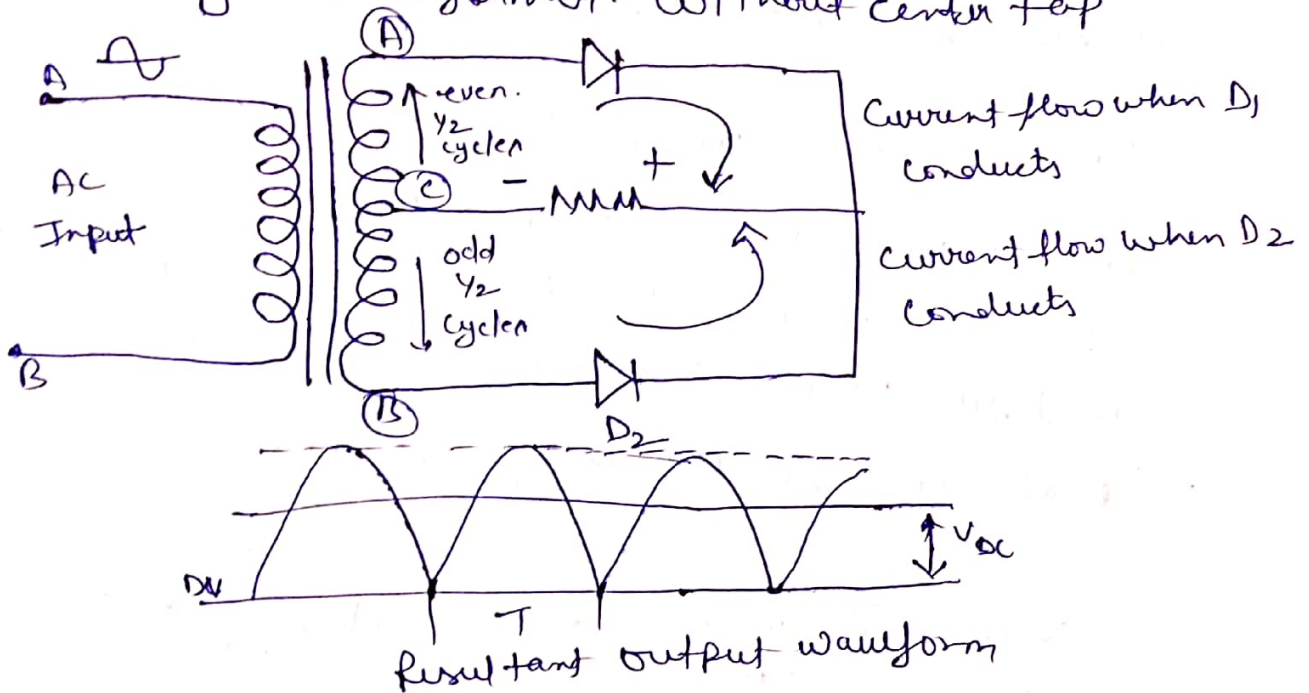


Ques → Explain full wave power converter?

Sol: Full wave rectification converts both polarities of the input waveform to pulsating DC (Direct current) and yields a higher average output voltage. Two diodes and a center-tapped transformer or four diodes in a bridge configuration and any ac source including a transformer. Without center tap



The full wave rectifier circuit consists of two power diodes connected to a single load resistance ( $R_L$ ) with each diode taking its turn to supply current to the load when point A of transformer is positive with respect to point C. Diode  $D_1$  conducts in the forward direction as indicated by the arrow when point B is ~~is~~ positive (in the negative half of the cycle with respect to point C diode  $D_2$  conducts in the forward direction).

And the current flowing through it  $R$  is in the same direction for both half cycles. As the output voltage across the resistor  $R$  is the phasor sum of the two waveforms combined this type of full wave rectifier circuit is also known as a bi phase current.

As the space between each half wave developed by each diode is now being filled in by the other diodes the average dc output voltage across the load resistor is now double that of a single half wave rectifier circuit and is about  $0.637 V_{max}$  of the peak voltage assuming no losses.

$$V_{dc} = \frac{2V_{max}}{\pi} = 0.637 V_{max} = 0.9 V_{rms}$$