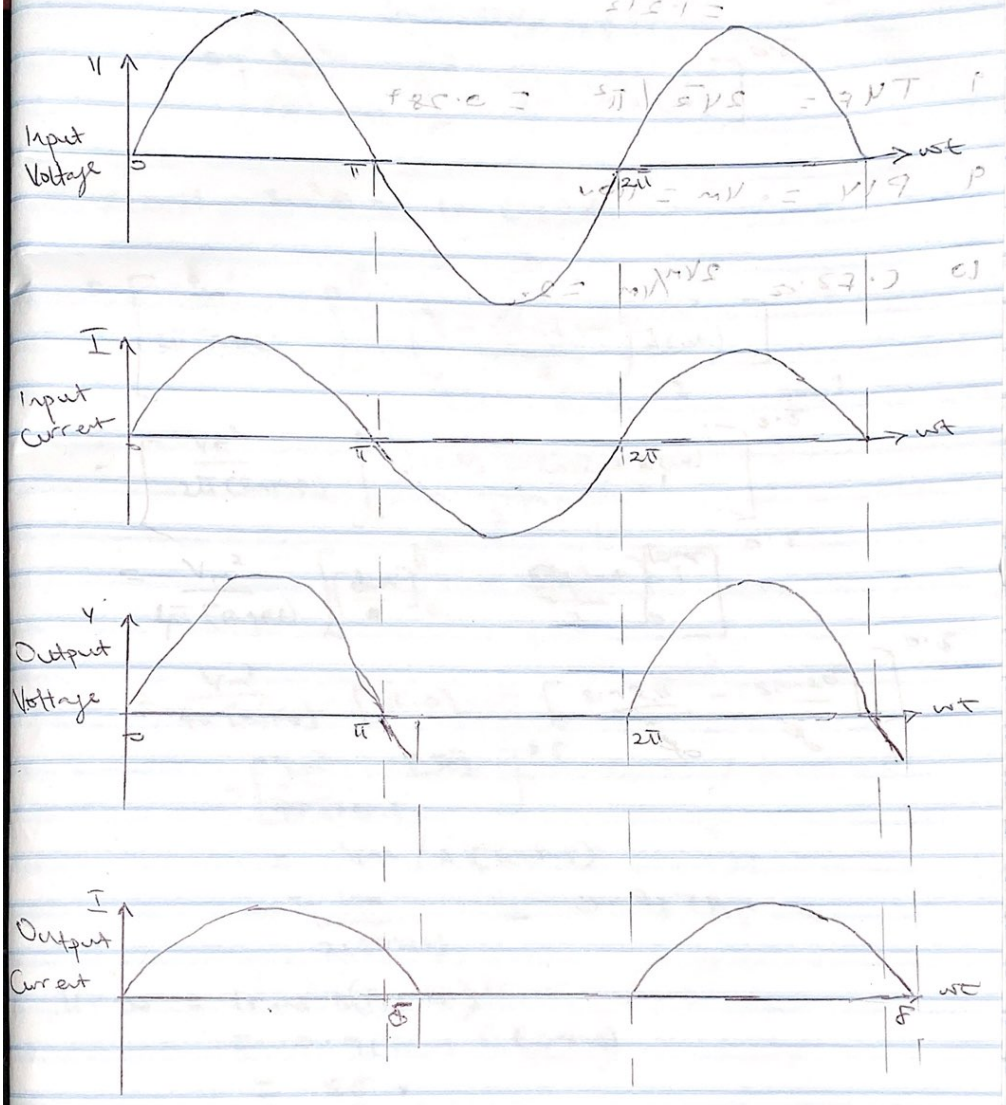
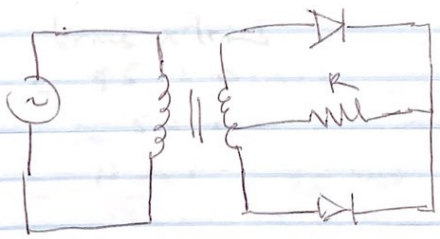
1.) Circuit waveform for single phase half wave R-L network.



2) Solution to example 2, single phase full wave ~~bridge~~ Diode rectifier.



$V_m = 100V$

$R = 5V$

Single phase

Advantages of full wave Bridge Rectifier

1. The output is double to that of the center-tapped full wave rectifier for the same secondary voltage
2. The center tap transformer is eliminated.
3. The peak inverse voltage across each diode is one-half of the center tap circuit of the diode
4. It has higher efficiency

Disadvantages

1. It requires four diodes.
2. The circuit is not suitable when a small voltage is required to be rectified. It is because the two diodes are connected in series and offer double voltage drop due to their internal resistance
3. The values of the diodes used should be precise else there will be an error in rectification.
4. It has ripples in it's output

Advantages of Single phase full wave rectifier with Centre tapped transformer

1. The ripple factor is much less than that of half wave rectifier.
2. The rectification efficiency is twice than that of half wave rectifier.
3. Low power loss because both half cycles (positive and negative) are allowed at the same time so no signal is wasted in a full wave rectifier
4. The DC output voltage & DC load current values are twice than those of half wave rectifier.

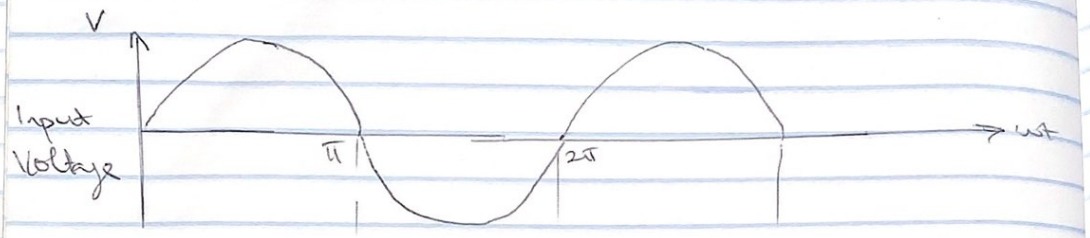
Disadvantages

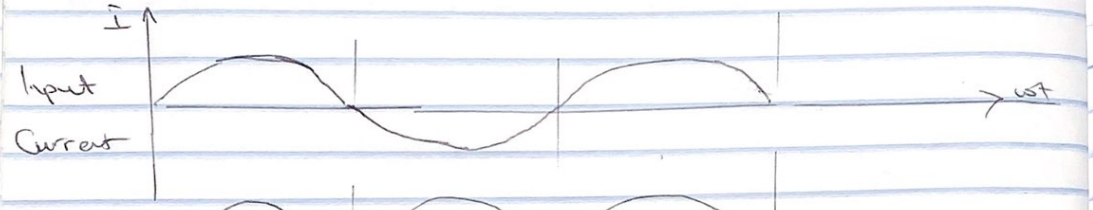
1. High cost, It is expensive and occupies a

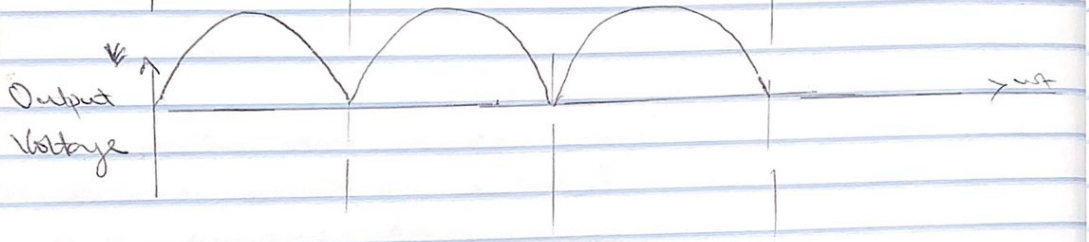
Large space

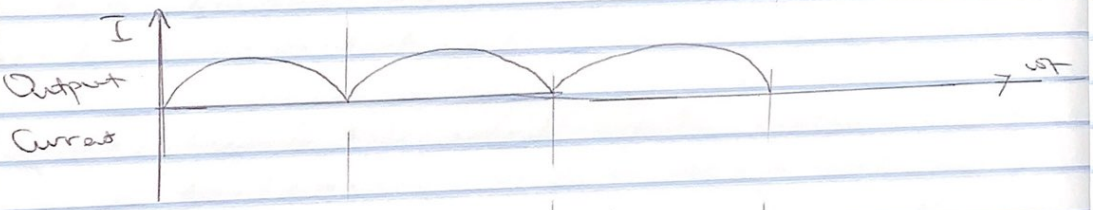
2. The peak inverse voltage of a diode used twice that of the diode used in the half wave rectifier, so the diodes used must have a high PIV.

3. The output voltage is half of the secondary voltage, as each diode utilizes only one half of the transformer secondary voltage


V
Input
Voltage
π
2π
ωt


I
Input
Current
ωt


Output
Voltage
ωt


I
Output
Current
ωt

1. I_{dc} =