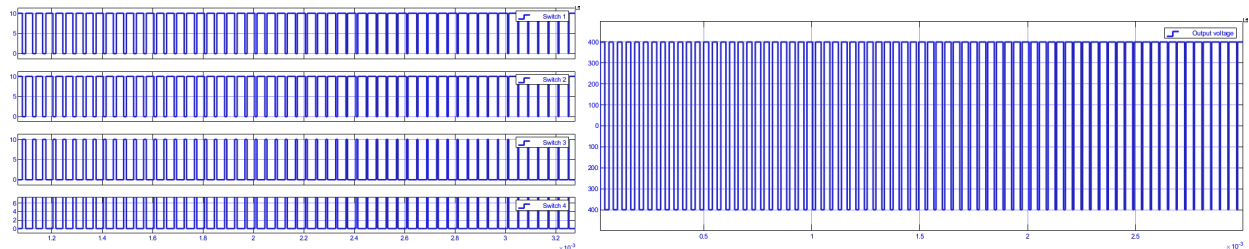


Single Phase Inverter:

I. a.



Switch Currents

(Peak of modulating signal = 0.98)

Output Voltage

b.

(i)

Total Harmonic Distortion = 104.10%

Magnitude of fundamental component = 391.5 V

(ii)

5th = 0.117 V(0.03%)

7th = 0.195 V(0.05%)

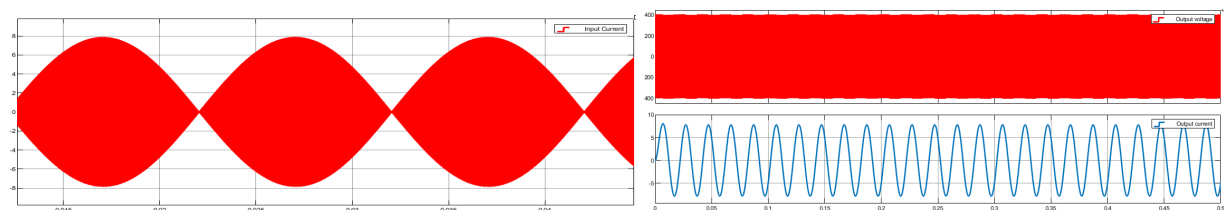
c.

For displacement factor = 0.8 lagging ie inductive

$L=0.095$

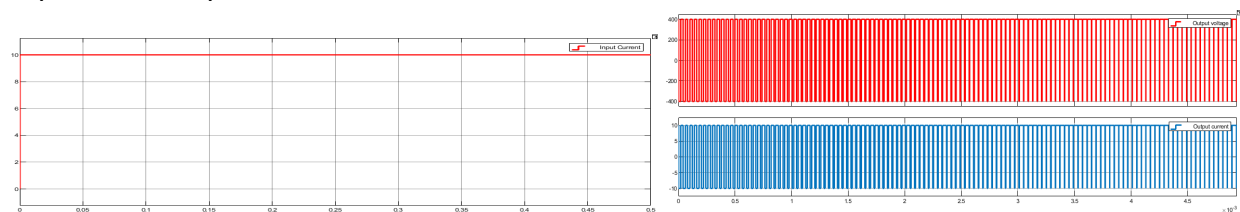
Displacement factor=1

Impedance =resistive

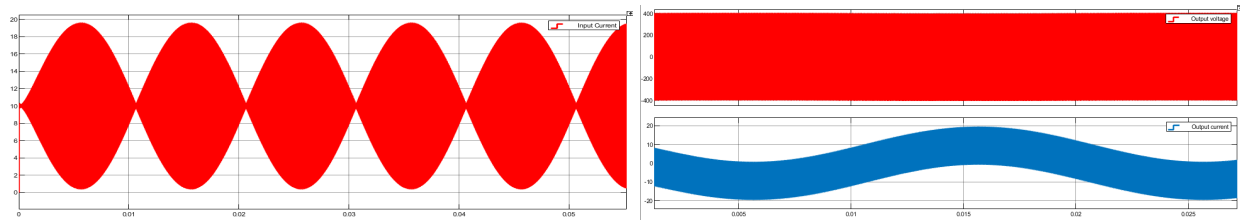


Displacement factor=0.2

Impedance =capacitive

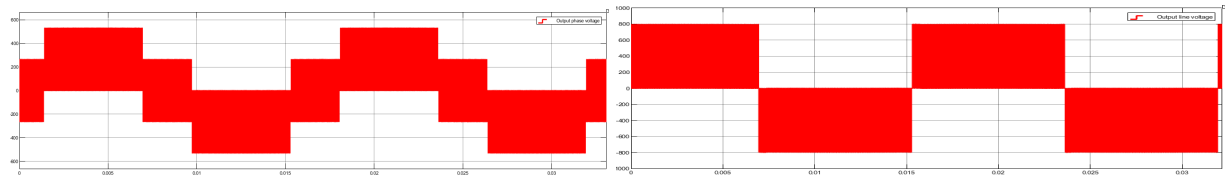


C=16.24uF

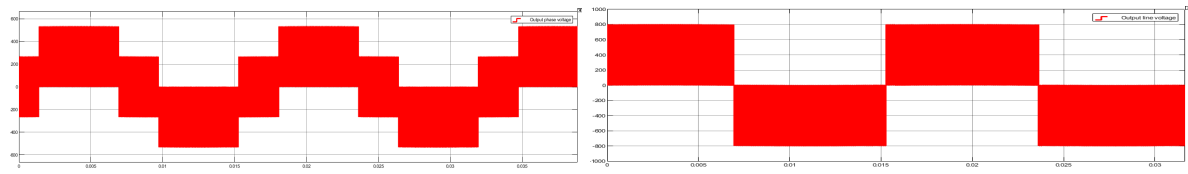


Three Phase Inverter:

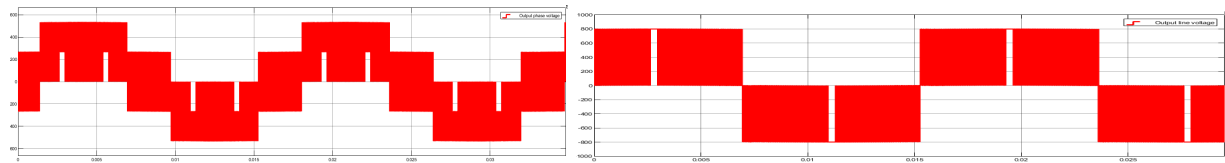
a. (i) $m_a=0.4$



(ii) $m_a=0.8$



(iii) $m_a=1.2$



ma	0.4	0.8	1.2
Fundamental Component RMS (Line voltage)	84.86V	391.6V	540.8V
THD(Line Voltage)	197.53%	91.62%	58.19%
Fundamental Component RMS (Phase voltage)	147V	226.1V	312.2V
THD(Phase Voltage)	197.53%	91.61%	58.18%

- b.** Fundamental Component RMS (Line voltage)=317.2V
 THD(Line Voltage)=113.74%
 Fundamental Component RMS (Phase voltage)=183.1V
 THD(Phase Voltage)=113.74%

c.

ma	0.1	0.5	1.0
fm	6Hz	30Hz	60Hz
Fundamental Component RMS (Line voltage)	317.2V	244.9V	489.5V
THD(Line Voltage)	113.74%	139.34%	68.84%
Fundamental Component RMS (Phase voltage)	183.1V	141.4V	282.6V
THD(Phase Voltage)	113.74%	139.34%	68.84%