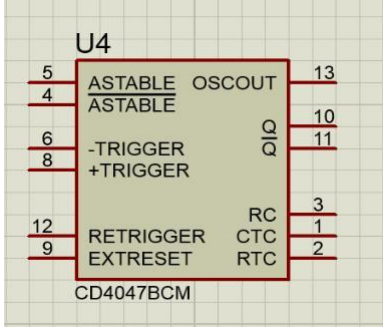
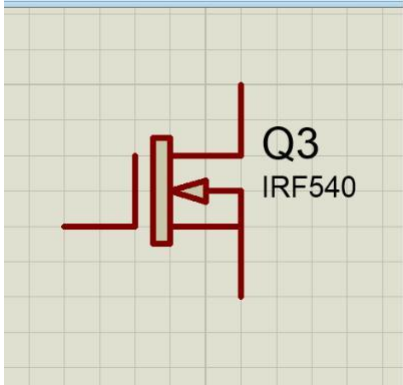
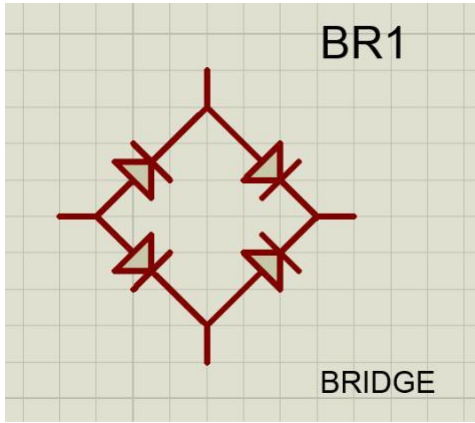
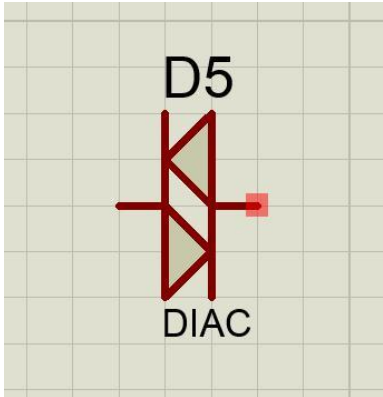
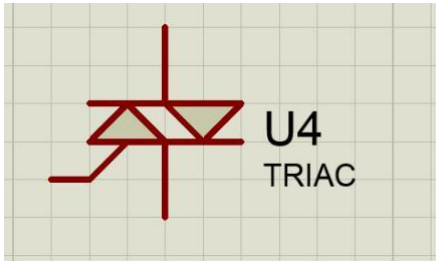
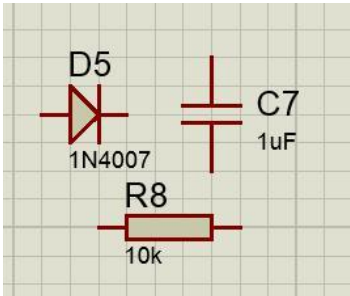


4.1 Simulation :

- The Simulation of Project is performed on PROTEUS 8 Software
- Some of the devices that are used to perform simulation are shown below

DEVICES	SYMBOL
IC CD4047	 The symbol for the IC CD4047BCM is shown on a grid. It is a rectangular component with 14 pins. The pins are labeled as follows: Pin 5 (top left) is labeled '5', Pin 4 (top left) is labeled '4', Pin 6 (top left) is labeled '6', Pin 8 (top left) is labeled '8', Pin 12 (bottom left) is labeled '12', Pin 9 (bottom left) is labeled '9', Pin 13 (top right) is labeled '13', Pin 10 (top right) is labeled '10', Pin 11 (top right) is labeled '11', Pin 3 (bottom right) is labeled '3', Pin 1 (bottom right) is labeled '1', Pin 2 (bottom right) is labeled '2'. The internal labels are: 'U4' at the top, 'ASTABLE OSCOUT' on the left, 'ASTABLE' on the left, 'Q' on the right, 'Q' on the right, '-TRIGGER' on the left, '+TRIGGER' on the left, 'RC' on the right, 'CTC' on the right, 'RETRIGGER' on the left, 'EXTRESET' on the left, 'RTC' on the right, and 'CD4047BCM' at the bottom.
MOSFET IRF540	 The symbol for the MOSFET IRF540 is shown on a grid. It is a rectangular component with three pins. The pins are labeled as follows: Pin 1 (top left) is labeled '1', Pin 2 (top left) is labeled '2', Pin 3 (bottom left) is labeled '3'. The internal labels are: 'Q3' at the top, 'IRF540' at the bottom, and 'MOSFET' on the left.

<p>Bridge Converter</p>	 <p>BR1</p> <p>BRIDGE</p>
<p>DIAC</p>	 <p>D5</p> <p>DIAC</p>
<p>TRIAC</p>	 <p>U4</p> <p>TRIAC</p>
<p>Capacitor Resistor Diode [1N4007]</p>	 <p>D5 1N4007</p> <p>C7 1uF</p> <p>R8 10k</p>

CIRCUIT SCHEMATIC

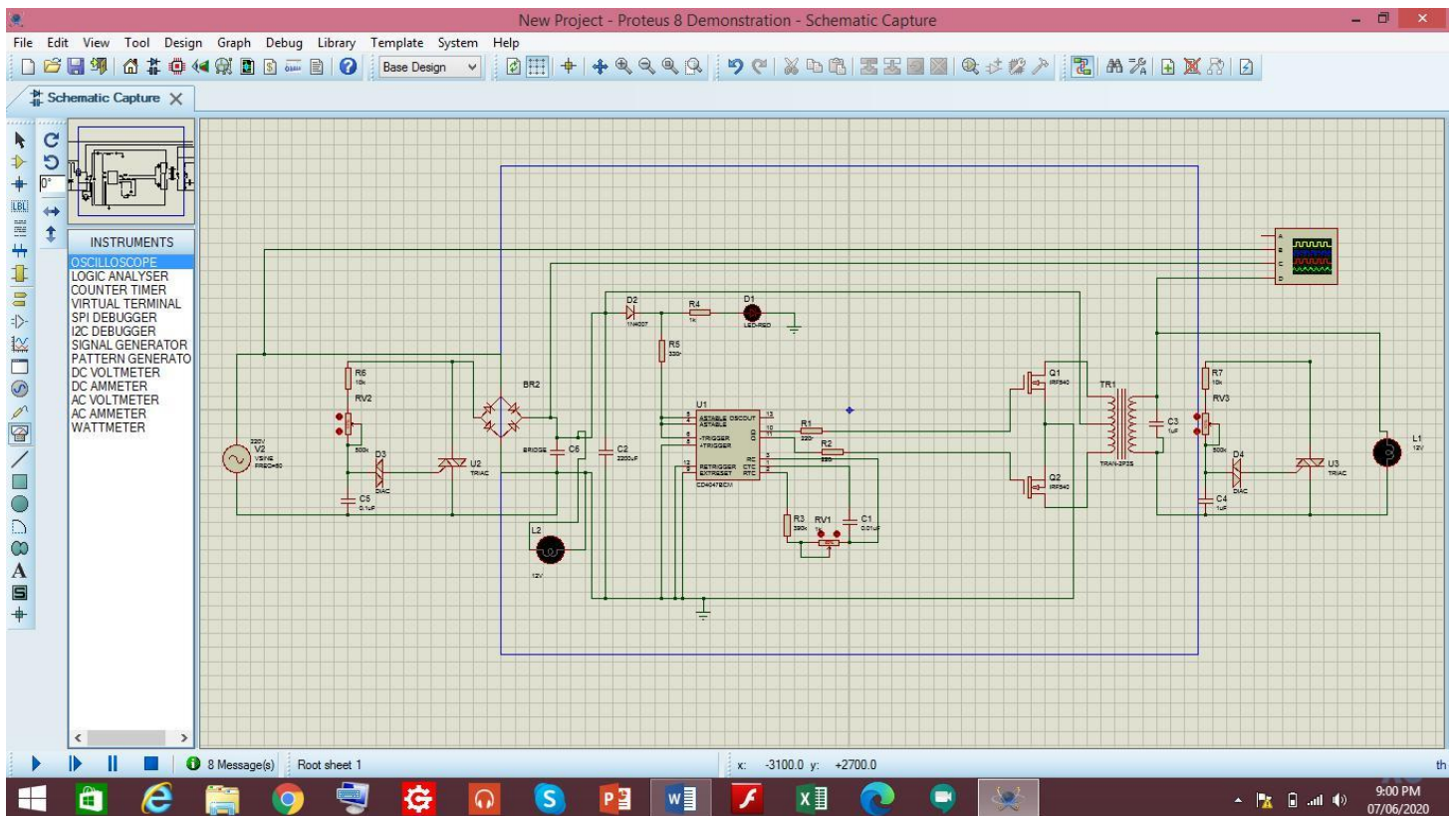


Fig4.1 : Complete view

Zoom Views

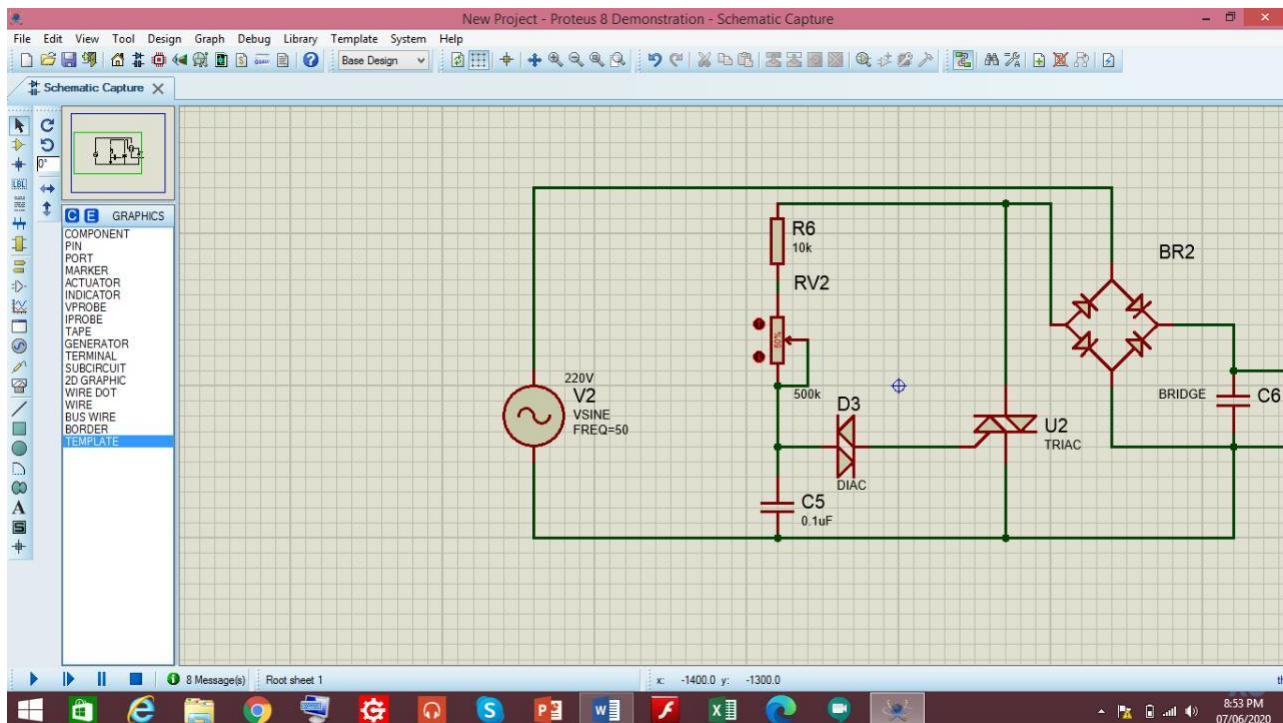
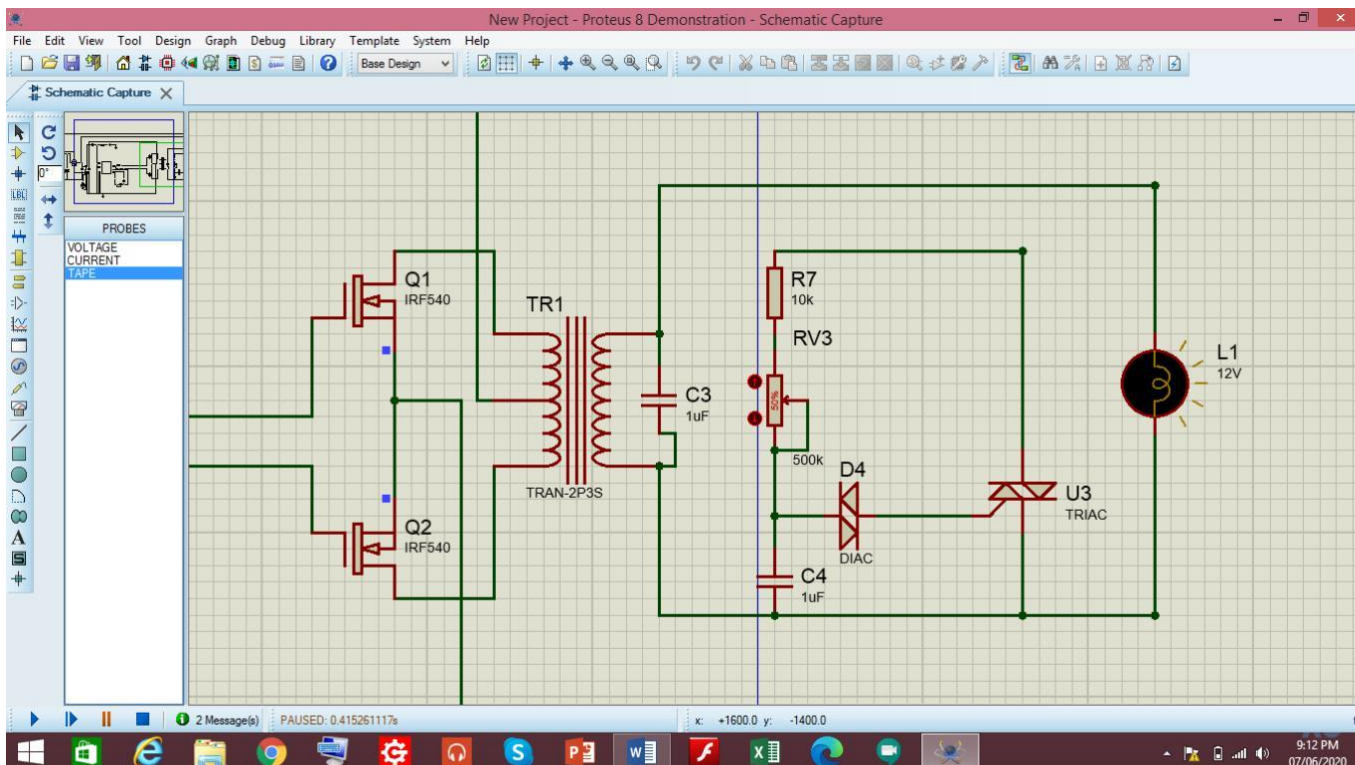
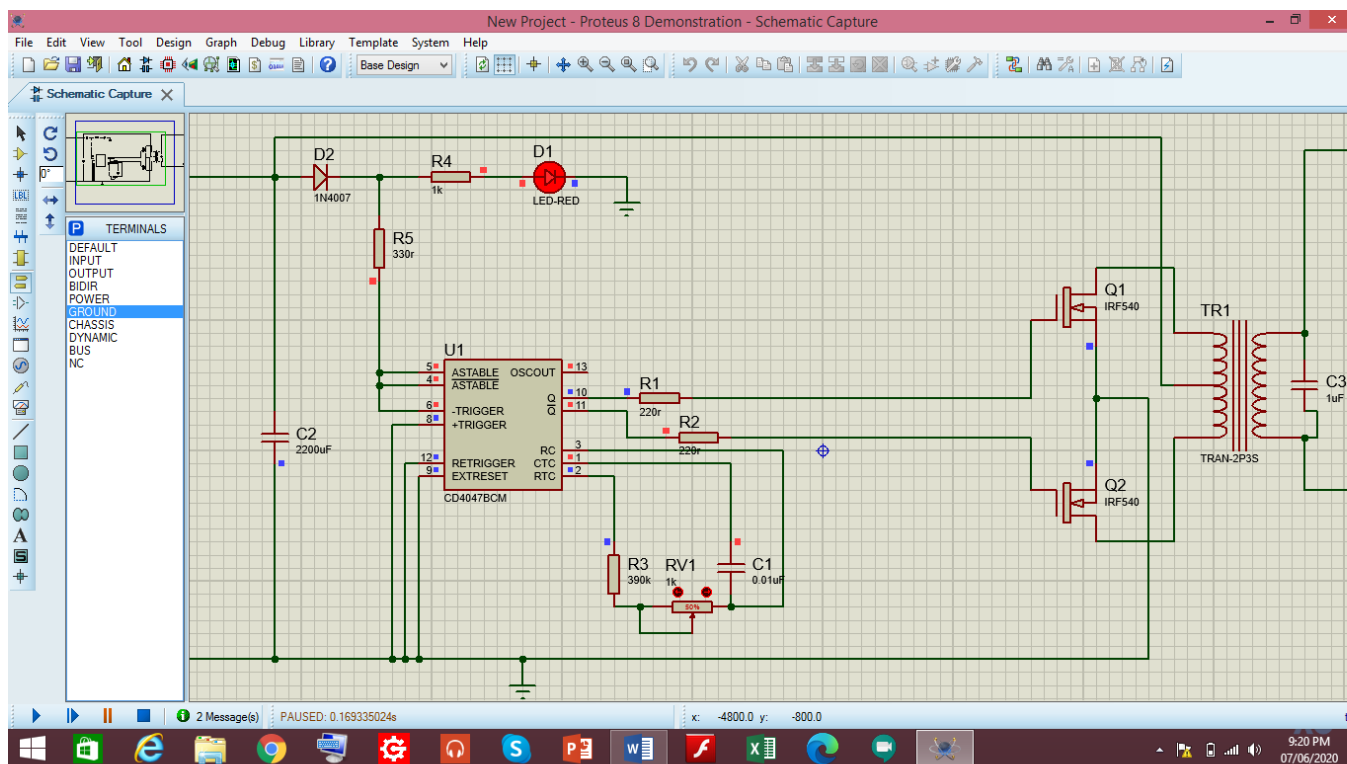


Fig4.2 : Input side



- **WAVEFORMS**

DC output :

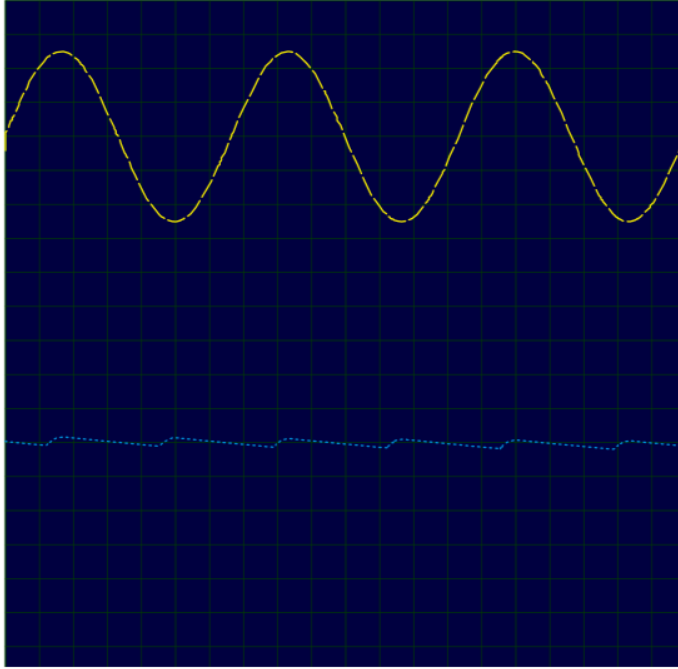


Fig4.5 : DC stage waveforms [Yellow - Input | Blue – DC Output]

AC Output :

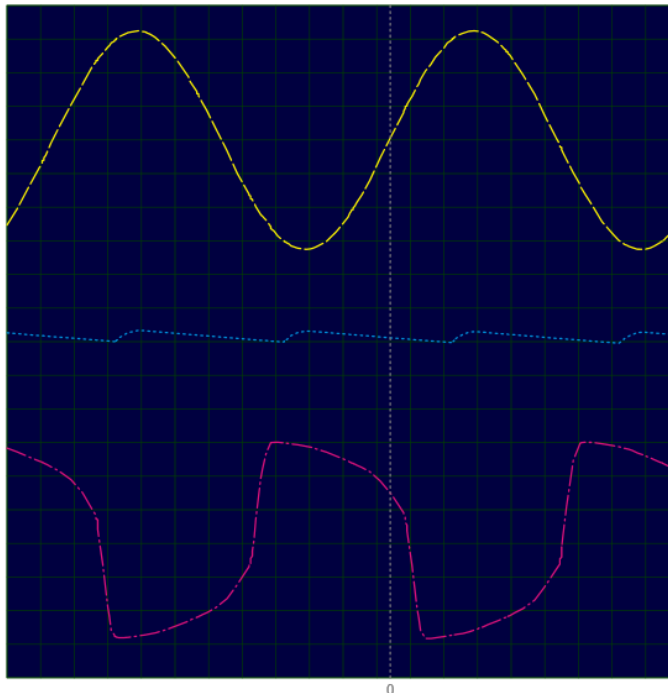


Fig 4.6 : AC stage waveforms [Yellow – Input | Blue – DC output | Pink – AC Output]

DC Output Variation [By controlling]

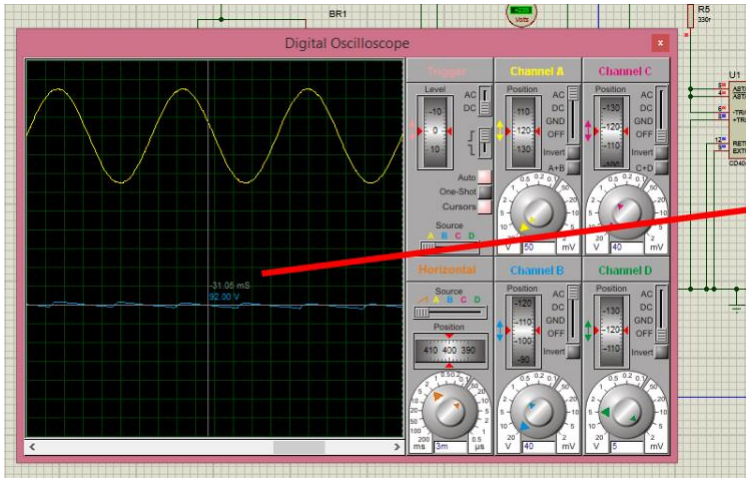


Fig4.7 : Waveforms of DC output variation (part 1)

It shows output DC waveform at the first stage (ie rectification) when source is of 230V and potentiometer is adjusted to 57% of it's Max value of resistance (500k)

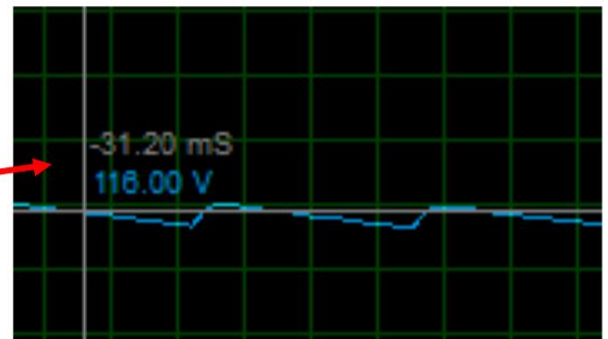
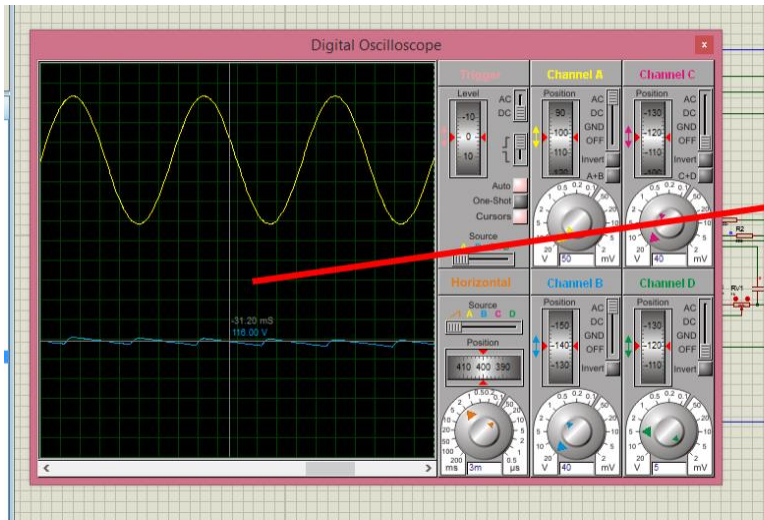


Fig4.8 : Waveforms of DC output variation(part2)

It shows output DC waveform at the first stage (ie rectification) when source is 230V and potentiometer is adjusted to 46% of it's Max value of resistance which is 500k.

AC Output Variation

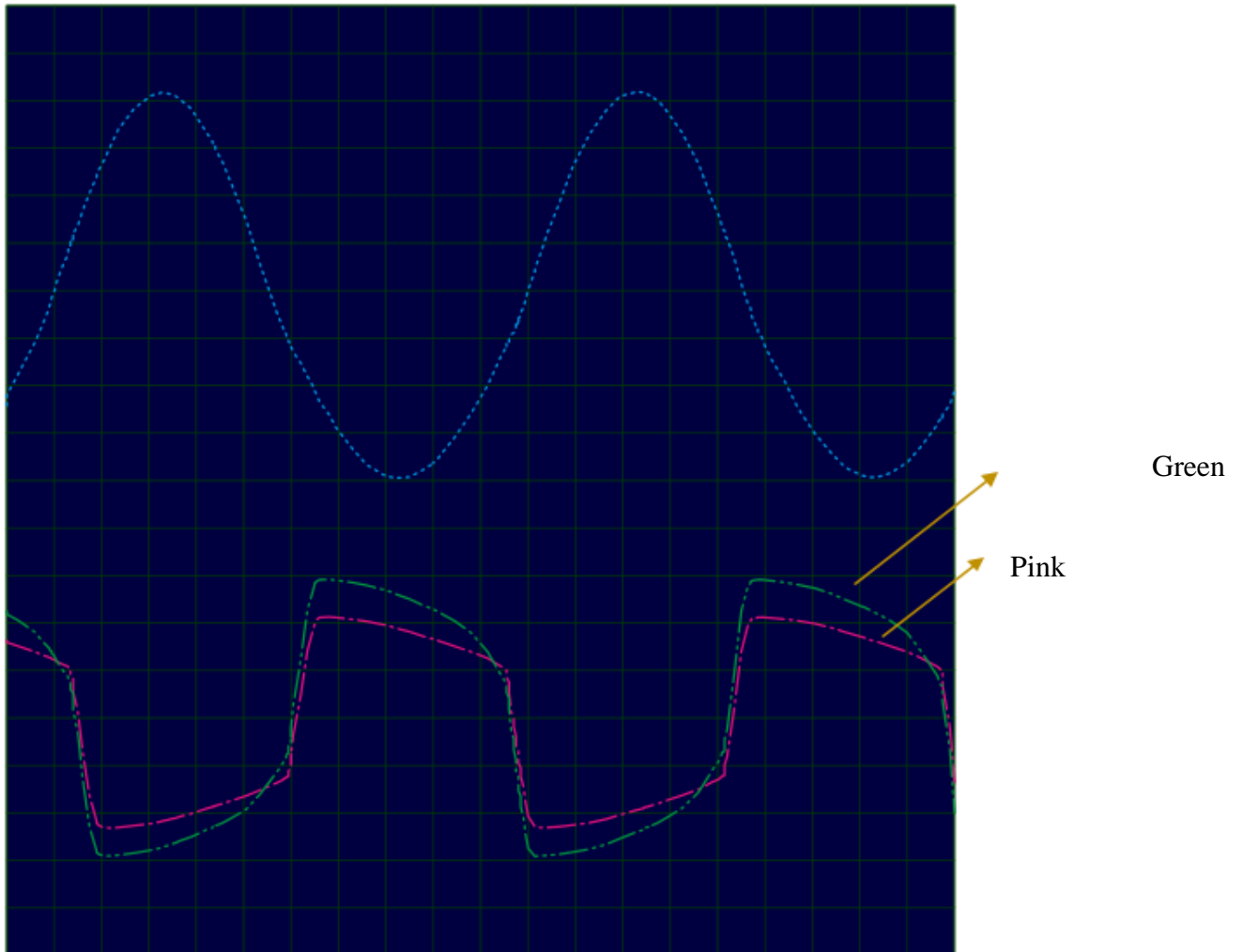


Fig 4.9 : Waveforms of AC output variation

The uppermost blue colored wave form is input source's waveform having peak of 325.20 volts Keeping the value of potentiometer in the rectifier stage at 0% of it's maximum value ,The green colour and pink coloured waveform are imposed on each other to show the magnitude variation for different value of potentiometer resistance of inverter stage..Green colour waveform is formed when inverter stage potentiometer is adjusted to 25%. Pink colour waveform is observed when it is set to 46% .