**MIDDLE EAST TECHNICAL UNIVERSITY**

**ELECTRICAL AND ELECTRONICS ENGINEERING DEPARTMENT**



**EE463 STATIC POWER CONVERSION-I**

**PROJECT #1 REPORT**

**Due Date: 25.11.2018**

**Team Members**

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**Question1-)** In this part, we try different step sizes for single phase rectifier and we observed that they different from each other since computer is working discrete domain. Due to that, computer take data with respect to step size. When step size is small like 1.5 msec, we did not observe waveform clearly since computer take less data and some point is missed. When we increase step size, computer take more data at unit time and missed point decrease. Because of that, we observe waveform clearly. For computer, step is very important to interpret waveforms correctly.

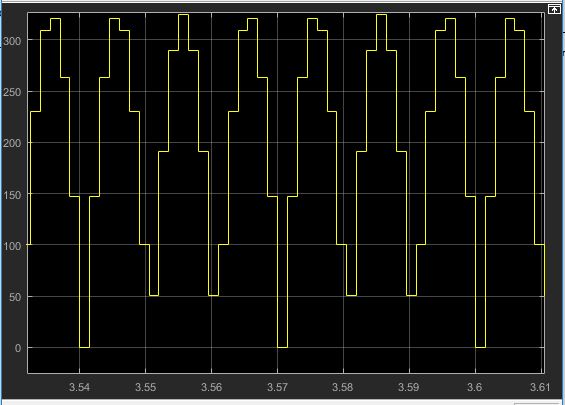


Figure 1: Output waveform at 1.5 msec

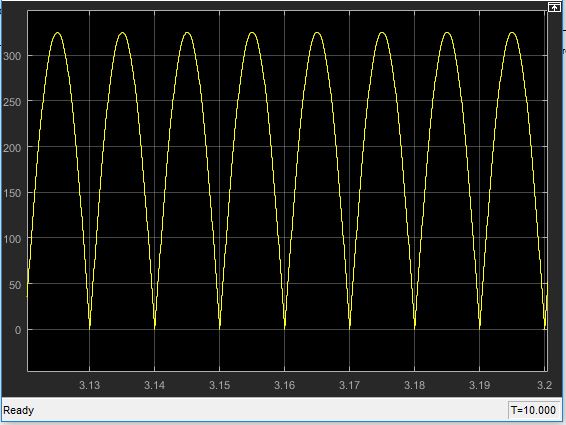


Figure 2: Output waveform at 10 usec

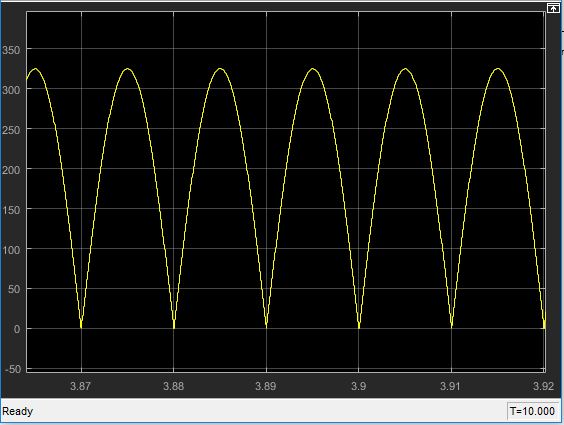


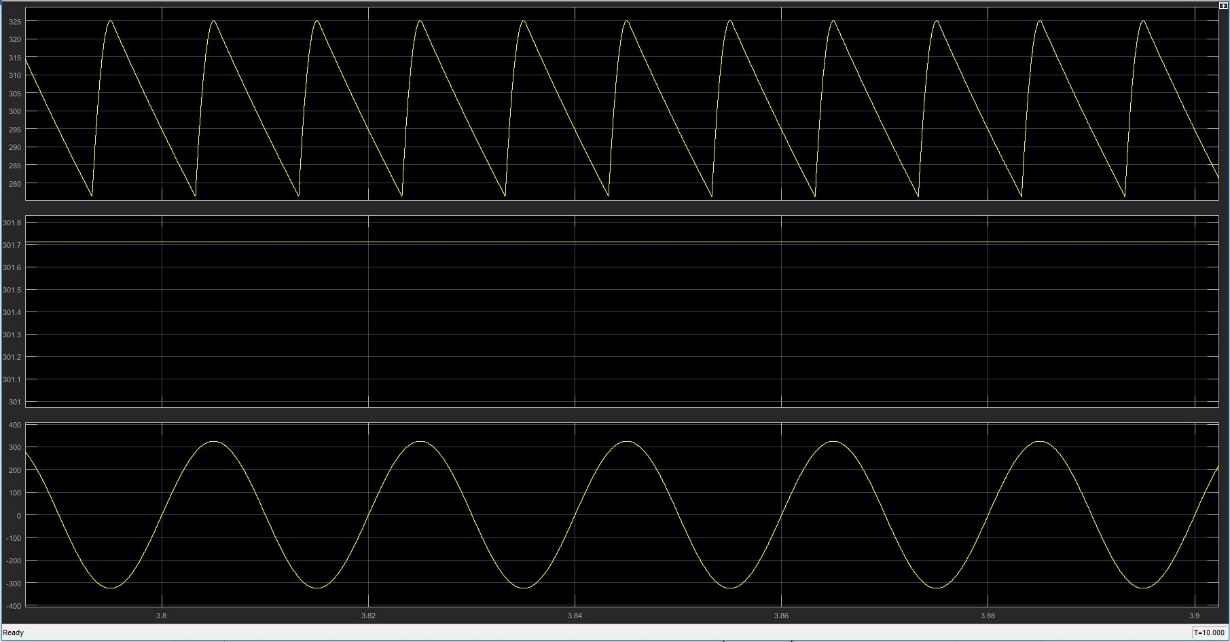
Figure 3: Output waveform at 1 usec

**Question2-)**

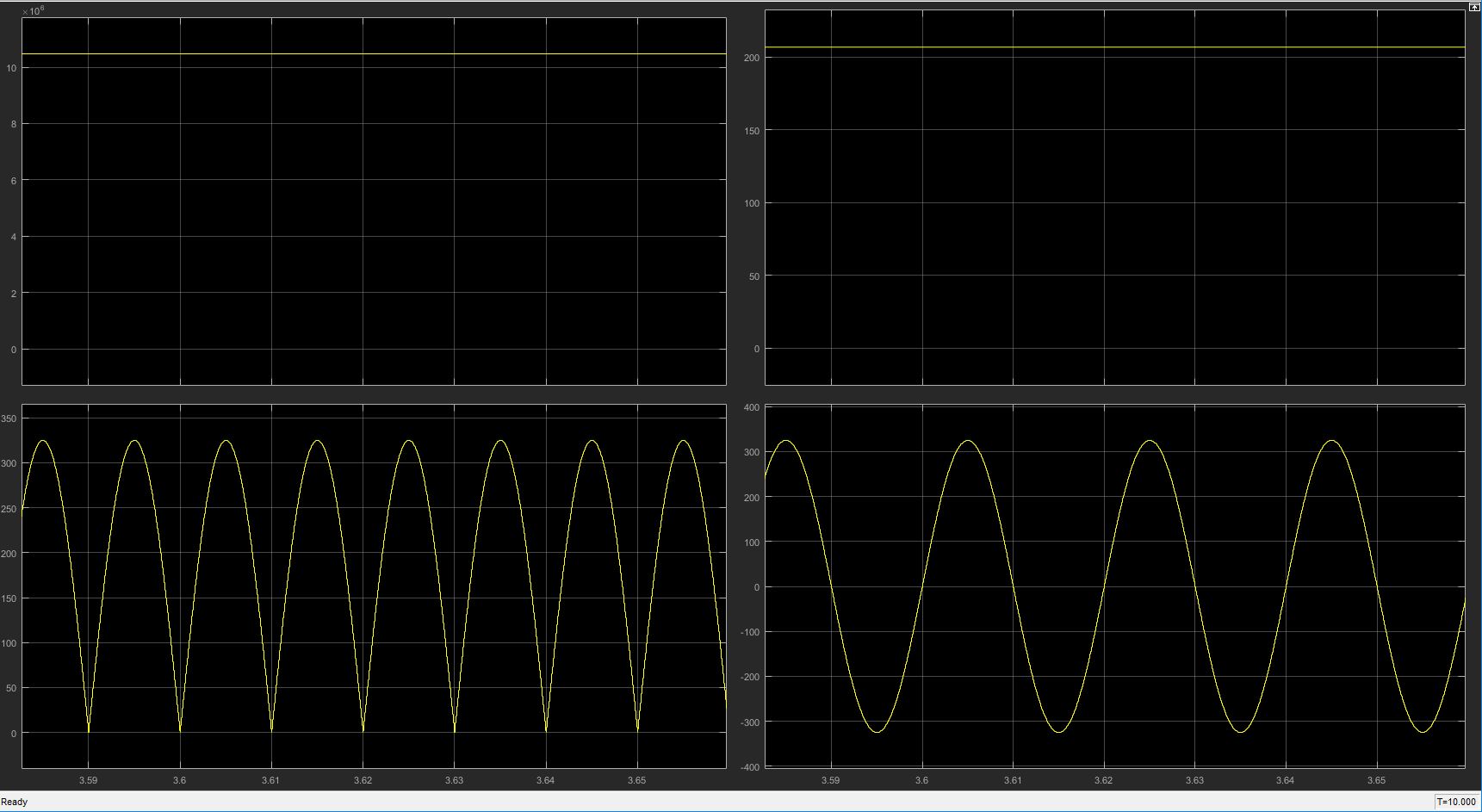
**Part 1-)**

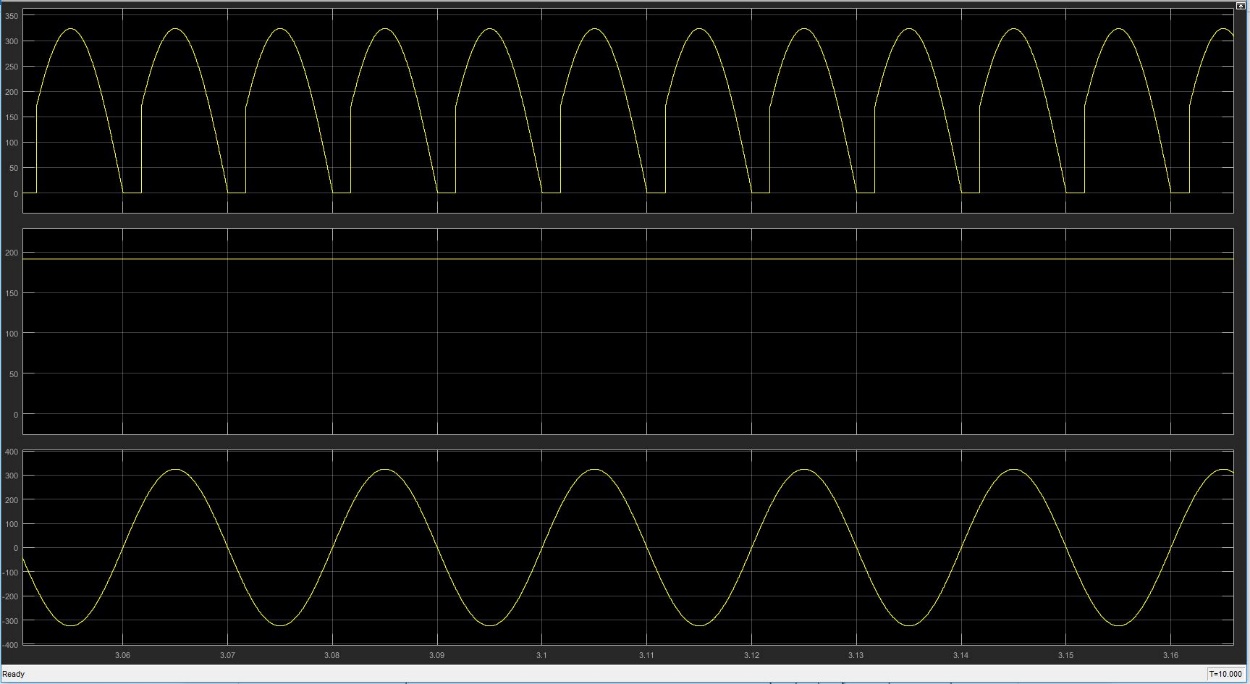
**Part 2-)**

**Part 3-)** We find capacitor value as 0.5uF. In this situation, average voltage is 301.7 and 20% of its is 60.34 V. Our ripple voltage is around 50 V. We can see output, average and input voltage waveform in the below figure.



**Part 4-)**





**Part 5-)**