JEE2330 – Spring 2025
Lab #4 Values and Notes

Experimental Procedures:

Section 4.5.1

Follow instruction in manual

Section 4.5.2

Use a frequency of 1 kHz for f_1.

Section 4.5.3

Use waveform (2) only.

Section 4.5.4

Skip this step of the procedure.

Section 4.5.5

Use a 1N4001 diode and the red 47 Ω, 1 W resistor for this circuit. Set the frequency to 1 kHz for f_5.

Report:

Section 4.6.1 (14 points)

Follow the procedure in the manual.

Section 4.6.2 (5 points)

Follow the procedure in the manual.

Section 4.6.3

Skip this part of the report.

Section 4.6.4 (8 points)

Calculate the RMS voltage values for waveform (1) and (6) only.

Section 4.6.5 (10 points)

Calculate the Fourier series coefficients for waveforms (1) and (6) only. Limit your calculations to the average value (n = 0) and the first 15 harmonic coefficients (n = 1, 2, 3, 4, 5, 6, 7, 8, 9, 10, 11, 12, 13, 14, 15). Present these coefficients in tabular form.

Section 4.6.6 (7 points)

Follow the procedure in the manual for waveforms (1) and (6) only.

Section 4.6.7 (51 points)

Present the periodic waveforms chart as specified in the lab manual.

Section 4.6.8

Skip this part of the report.

Section 4.6.9

Skip this part of the report.

Section 4.6.10

Skip this part of the report.

Section 4.6.11 (5 points)

Follow the procedure in the manual with one addition. Also, include the same respective data taken at frequency f_1 in Section 4.5.2. In other words, use data for four frequencies, namely 500 Hz, 1000 Hz, 2000 Hz, and 5000 Hz.

Section 4.6.12

Skip this part of the report.

Section 4.6.13

Skip this part of the report.

Section 4.6.14

Skip this part of the report.

Section 4.6.15

Skip this part of the report.

Section 4.6.16

Skip this part of the report.

Section 4.6.17 (points included in 4.6.7)

Present the hardcopy of waveform 7 in your report. Note, all data taken in Section 4.5.5 was to be recorded on the Periodic Waveform Chart.