**Data Conversion and Lab (17.368) Report - Lab #6**

*Voltage to Frequency Converter and Frequency to Voltage Converter*

**Name:** \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ **Date:** \_\_\_\_\_\_\_\_\_\_\_\_\_

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**Instructor Grade Sheet**

**Lab Report Format** --- --- --- --- --- --- 20 points: **\_\_\_\_**

* Report submitted
* Responses are in font and colors identified
* Required files have been emailed to instructor

**Technical Adequacy** --- --- --- --- --- --- 40 points: **\_\_\_\_**

* Report complete
* Information correct

**Lab proficiency** --- --- --- --- --- --- 20 points: **\_\_\_\_**

* Student prepared for class (accomplished pre-lab, downloaded Lab, etc.)
* Student utilized assigned Lab period
* Student demonstrated knowledge and understanding of the material
* Student demonstrated knowledge and understanding of the lab equipment
* Student demonstrated knowledge and understanding of the required computer software, when applicable

**Lab Notebook** --- --- --- --- --- --- 20 points: **\_\_\_\_**

* Attached? Yes/No
* Contains details of the lab performed? Yes/No

**Late Report Deduction** --- --- --- --- --- **Deduction:** **\_\_\_\_**

(≤1 wk late -10; > 1 wk ≤2 wks -20; >2 wks -30; No Rpt -100)

**Final Grade --- --- --- --- --- --- \_\_\_\_**

**Instructor Comments:**

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**Student Report**

**Directions:** All Lab Reports will be formatted in accordance with the below requirements. *Answers shall be typed* using the font and color after each question (overwrite the “Student response here using this font and color” with your response) unless you make other arrangements in advance with the instructor. Expand blocks as needed.

Your report needs to contain the “right” amount of detail so that the reader can understand what has transpired in the lab. It should not be in such detail that the reader could perform a step-by-step process of recreating the lab. The lab report does not have to pass the weight test (it does not mean that the longer your lab the better your grade … a short to the point report is all that is needed), however, it must contain the required material listed below.

**Electronic report submission:**

Electronic submission is acceptable and preferred provided that it is in PDF format. Other formats must be discussed with the instructor. Submit this report via email (Dohn\_Bowden@uml.edu) no later than midnight on the due date. Your graded report will be returned via email. No hardcopy is required if you submit electronically.

**Hardcopy report submission:**

Hard copy submission will be made during the class period. Graded hard copy *or* scanned version will be returned. No electronic version is required if you submit a hardcopy.

**Lab Results:**

**NOTE … this lab is in the old format (Experiment vice Objective). Each portion of this Lab Report reflects both formats.**

1. Did you work with any other student(s) in the performance of this lab? If yes, identify the other student(s). Identify who accomplished what portions of the lab.

Student response here using this font and color

**Objective 1 (Experiment 1):**

1. Identify issues encountered during the construction of your circuit.

Student response here using this font and color

1. Experiment 1b … Record the actual value of RS \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

Actual value of RS is \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

1. Experiment 1c – 1f … record the calculated and measured Output Frequencies for the input voltages listed in TABLE 1.

|  |
| --- |
| TABLE 1 |
|  | **Output Frequencies** |
| **Input Voltage** | **Calculated** | **Measured** |
| 0 |  |  |
| 2 |  |  |
| 4 |  |  |
| 6 |  |  |
| 8 |  |  |
| 10 |  |  |

**Objective 2 (Experiment 2):**

1. Identify issues encountered during the construction of your circuit.

Student response here using this font and color

1. Experiment 2b – 2d … record the calculated and measured Output voltages for the input Frequencies listed in TABLE 2.

|  |
| --- |
| TABLE 2 |
|  | **Output Voltages** |
| **Input Frequency** | **Calculated** | **Measured** |
| 0 |  |  |
| 2 kHz |  |  |
| 4 kHz |  |  |
| 6 kHz |  |  |
| 8 kHz |  |  |
| 10 kHz |  |  |

**Objective 3 (Experiment 3):**

1. Record results for each DC voltages applied in Table 3.

|  |
| --- |
| TABLE 3 |
|  |  |
| **Input Voltage (volts)** | **Output Voltage (volts)** |
| 0 |  |
| 2 |  |
| 4 |  |
| 6 |  |
| 8 |  |
| 10 |  |

1. How well do the input and output voltages compare?

Student response here using this font and color

**DISCUSSION OF RESULTS:**

1. DISCUSSION OF RESULTS … ***Briefly*** describe what was learned during the performance of this lab as well as the outcome of this lab.

Student response here using this font and color

**LAB QUESTIONS:**

* 1. Within this report.

**LAB NOTEBOOK:**

1. Attach a photocopy of your Lab Notebook to the end of this report or email a scanned copy (if emailed, indicate such in this report).

Photocopy attached or scanned copy emailed (indicate which)

**YOU MUST USE A LAB NOTEBOOK OR YOUR LAB GRADE WILL BE IMPACTED BY AS MUCH AS 20 POINTS.** Your notebook will include all data recorded and events that occurred during the conduct of the lab as well as any preparation calculations performed. It shall also include the observation by the instructor, when required.

A lab notebook is an important record of what occurred during the performance of the lab. It can be used as OQE (Objective Quality Evidence). This is true in industry as well. Learning good record keeping is an essential technique that will be used throughout your career.

**Lab Notebook**

Insert a copy here or email a scanned copy. Identify how it was provided.