**Prelab-8 Worksheet**

**Circuit Analysis – I**

|  |  |
| --- | --- |
| Student Name(s): |  |
| Student ID(s): |  |

**Task 1:**

**Table 1: Characteristics of the Source Voltage Signal, )**

|  |  |  |  |  |
| --- | --- | --- | --- | --- |
| **Frequency** | **Period** | **Amplitude** | **Peak-to-Peak Voltage** | **rms Voltage** |
|  |  |  |  |  |

**Note:** You must write the values of all parameters with proper units in all tables.

Within the space below, show ‘**detailed step-by-step**’ work/calculations showing how you found each parameter in Table 1

|  |
| --- |
| If this space is insufficient to show all work on this page, then you can extend it to the next page as necessary. Delete this comment once you have read it. |

**Important Note:**

You **must write** at each step of your calculations – **what** you are doing and the objective of a particular calculation (**why**). Without such detailed explanations for each calculation step, points will be deducted. If you do not include any explanations, then up to 50% points for this section (Task 1 of the Prelab) may be deducted. **Show neat and clean step-by-step calculations with explanations for each step to receive full credit**.

**Table 2: LTspice Simulation Results:**

|  |  |  |  |
| --- | --- | --- | --- |
| Circuit # | **Peak-to-peak value of** | **Peak-to-peak value of** | **Phase Difference between and** |
| Circuit 1 |  |  |  |
| Circuit 2 |  |  |  |
| Circuit 3 |  |  |  |

Within the space below, include ‘step-by-step’ work showing how you calculated the phase difference from the LTspice plots.

|  |
| --- |
|  |

**LTspice Screenshot # 1: Circuit # 1**

Put screenshot of the simulated plots from LTspice. Include only the plot window (containing  **and** ), do not put the circuit schematic.

**LTspice Screenshot # 2: Circuit # 2**

Put screenshot of the simulated plots from LTspice. Include only the plot window (containing  **and** ), do not put the circuit schematic.

**LTspice Screenshot # 3: Circuit # 3**

Put screenshot of the simulated plots from LTspice. Include only the plot window (containing  **and** ), do not put the circuit schematic.

**Prelab-8 Submission Requirements:**

* Convert/save this Prelab-8 Worksheet **as a .pdf file** with a filename as follows:

**If Prelab is done individually:** “Prelab-8\_FirstName\_LastName.pdf”.

**If Prelab is done in a group:** If you have been explicitly instructed by your lab instructor to perform the Prelab exercises in a group, then save this Prelab-8 Worksheet **as a .pdf file** with a filename following the convention below:

Let’s consider that two students are doing the prelab in a group. Then the filename should be: “Prelab-8\_FirstName of Student 1\_FirstName of Student 2.pdf”. For example, if name of the two students are Tom Cruz and Morgan Freeman, respectively, then the Prelab-8 Worksheet file should have the following name: “Prelab-8\_Tom\_Morgan.pdf”. Similar file naming convention should be followed to properly name your LTspice schematic file. Improperly named files may be subject to point deductions.

* **Prelab Submission Checklist:** There should be four files submitted for your Prelab-8 assignment. The Prelab Worksheet (.pdf) file, and three LTspice schematic files (.asc).
* Check with your lab instructor about specific instructions on how to submit your Prelab files for assessment and grading.

**Prelab Score:** This prelab contributes to 30 points toward Lab 8 (each Task in the Prelab is worth 10 points). In-lab hands-on work will contribute to 70 points (Lab 8 total is 100 points).