

## I. Lab Reports

Laboratory reports are to be typed using a word processor. It is preferable to use only 2 or 3 different fonts at most. Hand-drawn data or sketches can be included in order with the text, but using separate pages for simplicity. Oscilloscope waveforms should be recorded using the "BenchLink" utility which runs on the associated PC at each bench. These waveforms can be taken home on a disk, printed in the computer laboratory, or transferred to your personal account. Scope waveforms should be imported into your word processor. Equations should be typed using the equation editor, if possible. Lab reports should include the following sections:

1. Introduction A brief (one paragraph) statement of the objective of the experiment.
2. Pre-Lab (If required.) Give any required pre-lab computations.
3. Procedure Review the laboratory procedures used. Give an overview of the procedure, but not a detailed listing of the steps. Include your original hand-written experimental notes and data in an appendix at the back of the report. Have it initialed by the lab instructor before leaving the lab. If any computations are needed to process the data, give samples in this section. Scope waveforms may be placed in the back of the report, or included with your text as appropriate.
4. Theory Review the relevant theory. Make supporting calculations; for example, if a collector current was experimentally measured, provide a theoretical calculation of the same current.
5. Discussion Compare the equations derived in the theoretical section and data obtained in the procedure section. Was satisfactory agreement obtained? Discuss the key principle demonstrated in the experiment.

The theory and discussion sections of the lab report should usually be the largest, and will receive the most weight in grading. A complete and accurate discussion of the relevant theory is more important than close agreement of the experimental data. If the experimental agreement seems poor, attempt to determine why. (Results which depend on ill-determined parameters, such as beta for a BJT, may only be within  $\pm 20$  percent of the theoretical.) Don't forget to include the specific areas requested in the Report section of the experiment sheet.

Write the report as though you were communicating with a technically-literate person (e.g., your boss) who was not there when the experiment was performed. Reports which do not adequately communicate due to poor spelling, poor grammar, or vague or inconclusive patterns of reasoning will be returned for rewriting.

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