

NAME: _____

ECE 445, Fall 2012

Lab 1 – Prelab Grading Sheet

1. What is a transducer?

2. What are the characteristics of a biosensor?

3. What is the difference between precision and accuracy?

4. What are the five blocks in that make up the oscilloscope?

5. Describe a function generator.

6. What happens if a measurement exceeds the manual limits on the multimeter?

NAME: _____

ECE 445, Fall 2012

7. How do you measure resistance with the multimeter?

8. Why should one not measure Ω with external power applied to the circuit?

9. How does a photoelectric pulse plethysmograph work?

10. To work safely in the lab means that YOU KNOW...?

11. At what current level will an electrical shock cause pain and cause a feeling to “let go”?

NAME: _____

ECE 445, Fall 2012

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Show all calculations

C-1. Peak-to-peak voltage of sine wave = _____ V

C-2. DC level of sine wave = _____ V

C-3. What is the purpose of the AC/DC button?

C-4. Frequency of sine wave = _____ Hz

C-5. Frequency measured by scope = _____ Hz

C-6. Peak-to-peak voltage measured by scope = _____ V

D-1. Frequency of this calibration signal _____ Hz

E-1. Voltage from power supply = _____ V

F-1.

Voltage

Current

Resistance

F-2. List the colors on your resistor, in order. _____

Resistance from color code = _____ Ω

F-3. Resistance from multimeter = _____ Ω

NAME: _____

ECE 445, Fall 2012

F-4. Percent error= _____ %

Team Member 1

Team Member 2

G-1. Dynamometer displacement (x1) = _____ V _____ V

G-2. Dynamometer displacement (x5) = _____ V _____ V

G-3. Dynamometer displacement (x10) = _____ V _____ V

Comment: _____

G-4 Δt Instantaneous Heart Rate

Team Member 1

_____	_____
_____	_____
_____	_____

Average Heart Rate: _____

Team Member 2

_____	_____
_____	_____
_____	_____

Average Heart Rate: _____