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?
7. How do you measure resistance with the multimeter?


8. Why should one not measure $\Omega$ 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”?


Lab 1 Grading Sheet

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.

<table>
<thead>
<tr>
<th>Voltage</th>
<th>Current</th>
<th>Resistance</th>
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F-2. List the colors on your resistor, in order. _______________________________

   Resistance from color code = ______________ Ω

F-3. Resistance from multimeter= ______________ Ω
F-4. Percent error= __________________%  

<table>
<thead>
<tr>
<th>Team Member 1</th>
<th>Team Member 2</th>
</tr>
</thead>
<tbody>
<tr>
<td>G-1. Dynamometer displacement (x1) = ___________V</td>
<td>___________V</td>
</tr>
<tr>
<td>G-2. Dynamometer displacement (x5) = ___________V</td>
<td>___________V</td>
</tr>
<tr>
<td>G-3. Dynamometer displacement (x10) = ___________V</td>
<td>___________V</td>
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</tbody>
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Comment:___________________________________________________________________
_____________________________________________________________________________

G-4 Δt Instantaneous Heart Rate

**Team Member 1**

| ___________ | ___________ |
| ___________ | ___________ |
| ___________ | ___________ |

Average Heart Rate: ___________

**Team Member 2**

| ___________ | ___________ |
| ___________ | ___________ |
| ___________ | ___________ |

Average Heart Rate: ___________