

Student Name: \_\_\_\_\_

Student ID Number: \_\_\_\_\_

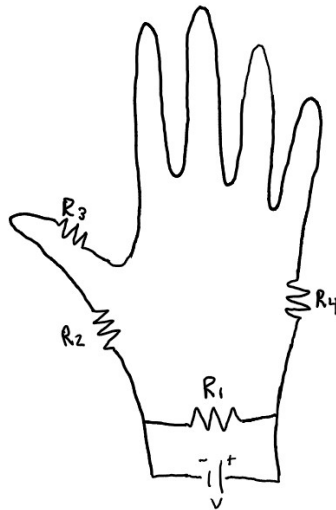


## Project COMPLETE Instrumentation Course Student Pre-Test

- Which of the following would be an example of a primary element:
  - Controller
  - Control valve
  - Transmitter
  - Capacitor
- An air conditioning unit would likely use which type of control:
  - Proportional
  - On/Off
  - Manual
  - Reciprocal
- The desired value that a process is to be operated at is the:
  - Range
  - Span
  - Set point
  - Control variable
- The difference between the maximum and the minimum values of a range is called the:
  - Error
  - Span
  - Set point
  - Variable
- An arrangement of instruments used to control a process is a:
  - System
  - Final element
  - Process Unit
  - Loop
- Electricity moves the worst through which material?
  - Silicon
  - Glass
  - Water
  - Copper
- Indicate all that apply. Creating an open circuit:
  - Causes an LED to shine
  - Causes the voltage to push electrons to move
  - Gives no place for electrons to go
  - Tells electrons where to go
- Your laptop consumes 38.1 Watts of electricity. If the current is 14.9 A, the voltage used by your laptop is closest to:
  - 1.567 V
  - 2.136 V
  - 2.557 V
  - 2.789 V
- You have constructed a parallel plate capacitor using Teflon ( $\epsilon = 2.1$ ) as the dielectric material. The area overlap of the plates is  $0.98 \text{ m}^2$ , and the distance between the plates is  $0.62 \text{ mm}$ . When applying  $3.5 \text{ V}$  to the capacitor, the capacitance is closest to:
  - $0.029 \mu\text{F}$
  - $0.090 \mu\text{F}$
  - $0.220 \mu\text{F}$
  - $0.358 \mu\text{F}$

10. For the circuit given below,  $I$  is the current leaving the voltage source. The voltage source is closest to:

- 9.8 V
- 12.9 V
- 14.6 V
- 18.0 V



$$I = 0.2 \text{ A}$$

$$R_1 = 70 \Omega$$

$$R_2 = 100 \Omega$$

$$R_3 = 500 \Omega$$

$$R_4 = 250 \Omega$$