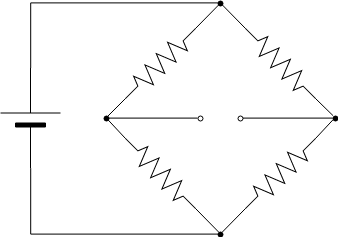
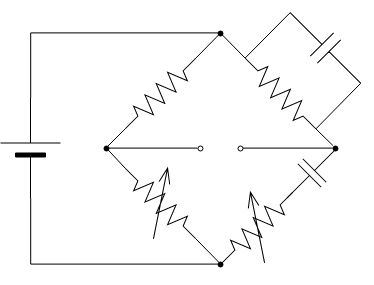
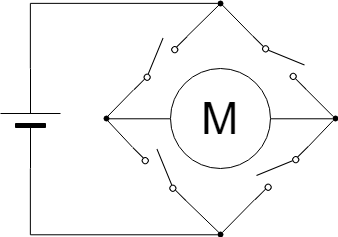
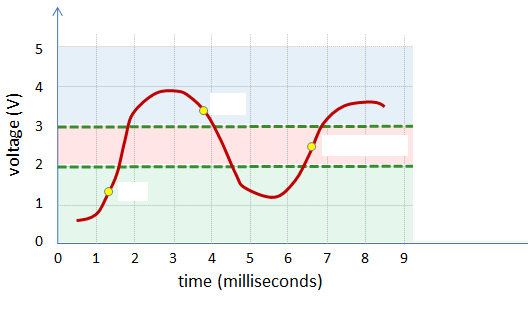
**Section 7 Questions**

1. A bridge circuit is a specific type of circuit that has a \_\_\_\_\_ section usually between parallel sections.
   1. Arch
   2. Bridging
   3. Line
   4. Disconnected
   5. Splitting
   6. Rigged
2. What is a bridge circuit?
   1. A specific type of circuit that has an arch section usually between two parallel sections.
   2. A specific type of circuit that has a line section usually between two parallel sections.
   3. A specific type of circuit that has a disconnected section usually between two parallel sections.
   4. A specific type of circuit that has a bridging section usually between two parallel sections.
   5. A specific type of circuit that has a rigged section usually between two parallel sections.
   6. A specific type of circuit that has a splitting section usually between two parallel sections.
3. What are the three most common types of bridge circuits?
   1. Wheatstone Bridge, Wayne Bridge, and T Bridge
   2. Wien Bridge, Wheatstone Bridge, and O Bridge
   3. H Bridge, Wien Bridge, and Wheatstone Bridge
   4. Wayne Bridge, T Bridge, and Wheat Bridge
   5. O Bridge, H Bridge, Wheatstone Bridge
   6. Wheatstone Bridge, Wien Bridge, and Wayne Bridge
4. The most common type of bridge circuit is a:
   1. Wheatstone Bridge
   2. Wien Bridge
   3. Wayne Bridge
   4. T Bridge
   5. O Bridge
   6. H Bridge
5. The Wheatstone Bridge is probably the most common type of bridge circuit.
   1. True
   2. False
6. The Wheatstone Bridge is the second most common type of bridge circuit.
   1. True
   2. False
7. The \_\_\_\_\_\_ is probably the most common type of bridge circuit.
   1. Wien Bridge
   2. T Bridge
   3. Wayne Bridge
   4. O Bridge
   5. Wheatstone Bridge
   6. H Bridge
8. The Wheatstone Bridge is probably the most common type of \_\_\_\_\_ circuit.
   1. Dimond
   2. Cross
   3. Bridge
   4. Arc
   5. Electric
   6. Bonded
9. What applications is a Wheatstone Bridge used in? (circle all that apply)
   1. Digital scales
   2. Ohmmeters
   3. Load cells
   4. Analogue scales
   5. Ammeter
   6. All of the above
10. What applications is a Wheatstone Bridge used in? (circle all that apply)
    1. Postage scales
    2. Ohmmeters
    3. Load cells
    4. Digital scales
    5. Digital bathroom scales
    6. All the above
11. What is this a picture of?
    1. Wayne Bridge
    2. H Bridge
    3. Wien Bridge
    4. T Bridge
    5. Wheatstone Bridge
    6. Dimande Bridge
12. What is this a picture of?
    1. Wayne Bridge
    2. H Bridge
    3. Wien Bridge
    4. T Bridge
    5. Wheatstone Bridge
    6. Dimande Bridge
13. What is this a picture of?
    1. Wayne Bridge
    2. H Bridge
    3. Wien Bridge
    4. T Bridge
    5. Wheatstone Bridge
    6. Dimande Bridge
14. The supply voltage, Vs, is sometimes called the \_\_\_\_\_.
    1. Excitation voltage
    2. Input voltage
    3. Exiting voltage
    4. Output voltage
    5. Entering voltage
    6. Surplus voltage
15. When the output voltage is zero, the circuit is said to be \_\_\_\_\_.
    1. Unbalanced
    2. Balanced
16. When the \_\_\_\_\_\_\_\_\_\_\_ , the circuit is said to be balanced.
    1. Output voltage is not zero
    2. Output voltage is zero
    3. Input voltage is zero
    4. Input voltage is not zero
    5. Net voltage is not zero
    6. Net voltage is zero
17. When the output voltage is not zero, the circuit is said to be \_\_\_\_\_\_\_\_.
    1. balanced
    2. unbalanced
18. What happens when you cover a photoresistor with your hand?
    1. Resistance increases as light decreases
    2. Resistance increases as light increases
    3. Resistance decreases as light increases
    4. Resistance decreases as light decrease
    5. Nothing happens
    6. The readings become inconsistent
19. What happens when you point the light of a flashlight directly on a photoresistor?
    1. Resistance increases as light increases
    2. Resistance increases a light increases
    3. Resistance decreases as light increases
    4. Resistance decreases as light decrease
    5. Nothing happens
    6. The readings become inconsistent
20. What does a photoresistor do?
    1. It reacts to light and sends back light readings based off of how dark or bright the surroundings around it.
    2. It reacts to heat and sends back temperature reading.
    3. It reacts to heat and sends back a temperature reading based off of how hot or cold the surroundings around it are.
    4. It reacts to heat and sends back a resistance reading based off of how hot or cold the surroundings around it are.
    5. It reacts to light and sends back a resistance reading based off of how dark or bright the surroundings around it are.
    6. None of the above
21. What does a photoresistor measure?
    1. Current
    2. Voltage
    3. Power
    4. Heat
    5. Resistance
    6. Light
22. What is a photoresistor?
    1. A type of resistor that reacts to resistance
    2. A type of resistor that reacts to light
    3. A type of resistor that reacts to heat
    4. A type of resistor that reacts to temperature
    5. All of the above
    6. None of the above
23. What is a photoresistor used for?
    1. Indicate the change in temperature
    2. Indicate the presence or absence of heat
    3. Indicate the color of an object
    4. Indicate the presence of a liquid
    5. Indicate the change in work done
    6. Indicate the presence or absence of light
24. A photoresistor measures light.
    1. True
    2. False
25. A photoresistor measures resistance.
    1. True
    2. False
26. A photoresistor measures heat.
    1. True
    2. False
27. A photoresistor is used to indicate the presence or absence of light.
    1. True
    2. False
28. A photoresistor is used to indicate the change in temperature.
    1. True
    2. False
29. A photoresistor is used to indicate the presence or absence of heat.
    1. True
    2. False
30. A photoresistor is a type of resistor that reacts to light.
    1. True
    2. False
31. A photoresistor is a type of resistor that reacts to heat.
    1. True
    2. False
32. A photoresistor is a type of resistor that reacts to resistance.
    1. True
    2. False
33. A photoresistor reacts to light and sends back a resistance reading based off of how dark or bright the surroundings around it are.
    1. True
    2. False
34. A photoresistor reacts to heat and sends back a temperature reading based off of how hot or cold the surrounding around it are.
    1. True
    2. False
35. If you cover a photoresistor with your hands, the resistance will \_\_\_\_\_\_ when the light \_\_\_\_\_\_\_.
    1. Increase; Increase
    2. Decrease; Increase
    3. Increase; Decrease
    4. Decrease; Increase
    5. Stay the same; Decrease
    6. Stay the same; Increase
36. If you shine a flashlight directly on a photoresistor, the resistance will \_\_\_\_\_\_ when the light\_\_\_\_\_\_.
    1. Increase; Increase
    2. Decrease; Increase
    3. Increase; Decrease
    4. Decrease; Increase
    5. Stay the same; Decrease
    6. Stay the same; Increase
37. \_\_\_\_\_\_\_\_\_\_\_ systems represent information using a continuous range of values.
    1. Digital
    2. Input
    3. Output
    4. Analog
    5. Global
    6. Local
38. \_\_\_\_\_\_\_\_\_\_ systems represent data information using discrete (discontinuous) values.
    1. Digital
    2. Analog
    3. Output
    4. Input
    5. Global
    6. Local
39. \_\_\_\_\_\_\_\_\_\_\_ can be used to represent continuous systems/measurements such as numbers, letters, or other individual symbols, sounds, and images.
    1. Digital
    2. Analog
    3. Output
    4. Input
    5. Global
    6. Local
40. Analog systems represent information using a continuous range of values.
    1. True
    2. False
41. Digital systems represent information using a continuous range of values.
    1. True
    2. False
42. Digital systems represent information using discrete (discontinuous) values.
    1. True
    2. False
43. Analog systems represent information using discrete (discontinuous) values.
    1. True
    2. False
44. A(n) \_\_\_\_\_\_\_\_\_\_ “receives” information or senses a voltage in the external world
    1. Digital
    2. Analog
    3. Output
    4. Input
    5. Global
    6. Local
45. A(n) \_\_\_\_\_\_\_\_\_ “delivers” information or makes something happen in the external world.
    1. Digital
    2. Analog
    3. Output
    4. Input
    5. Global
    6. Local
46. A(n) \_\_\_\_\_\_\_\_\_ input has a value of either a 0 or 1.
    1. Digital
    2. Analog
    3. Output
    4. Input
    5. Global
    6. Local
47. A(n) \_\_\_\_\_\_\_\_ input analog input has a value between 0 and 1023.
    1. Digital
    2. Analog
    3. Output
    4. Input
    5. Global
    6. Local
48. Switches are an example of a(n) \_\_\_\_\_\_\_\_\_ input.
    1. Local
    2. Analog
    3. Output
    4. Input
    5. Global
    6. Digital
49. A photoresistor is an example of a(n) \_\_\_\_\_\_\_\_\_ input.
    1. Digital
    2. Global
    3. Output
    4. Input
    5. Analog
    6. Local

**Use the graph to answer the following questions 50-52**



1. If the voltage at the digital input pin is greater than 3 volts, then the Arduino will returns:
2. High
3. Low
4. Ambiguous
5. An analog value between 0 and 1023.
6. Both high and low
7. A message to the serial monitor
8. If the voltage at the digital input pin is less than 2 volts, then the Arduino will return:
9. High
10. Low
11. Ambiguous
12. An analog value between 0 and 1023.
13. Both high and low
14. A message to the serial monitor
15. If the voltage at the digital input pin is between 2 volts and 3 volts, then the Arduino will return:
16. High
17. Low
18. Ambiguous
19. An analog value between 0 and 1023.
20. Both high and low
21. A message to the serial monitor
22. The analog input pins on your Arduino have a \_\_\_\_\_\_\_ bit resolution and consequently measure in 1024 increments.
23. 1
24. 10
25. 100
26. 10000
27. 100000
28. 1000000

54. The \_\_\_\_\_\_\_\_\_\_\_ functions returns a value between 0 and 1023.

1. digitalRead()
2. analogRead()
3. digitalWrite()
4. analogWrite()
5. Serial.begin()
6. Serial.write()

55. Analog functions return a value between 0 and 1023.

1. True
2. False
3. In a given circuit, the analogRead() value is 587. Find the voltage across a 10kΩ resistor.
4. 1V
5. 1.68V
6. 2.87V
7. 4.52V
8. 5.08V
9. 6.67V

Voltage = analogRead Value (5 volts/1023)

= (587)(5/1023)

= 2.87V

1. In a given circuit, the analogRead() value is 324. The voltage is 5V. Find the current that passes through the photoresistor.
2. .158mA
3. .200mA
4. .314mA
5. .569mA
6. .888mA
7. .952mA

△V10kΩ = 324(5V/1023) = 1.58V

I = I10KΩ = Iphoto = (1.58V/10000Ω) = .158mA