

## Short Questions

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### Question

1.0/1.0 point (graded)

Which statement(s) is/are true for active and passive sensors?

- ☐ Passive sensors always need to emit something to sense.
- ☐ Active sensor called active because it is installed with a motor.
- ☐ Active sensors emit signals to sense environment but it is not required.
- ☒ The same passive sensor can be used as active sensor when it uses a emitter to sense properly.
- ☐ None of above is true.



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### Question

1.0/1.0 point (graded)

LDR used to sense:

- ☒ Electromagnetic radiation
- ☐ Infrared
- ☐ X-Ray
- ☐ None of above



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### Question

1.0/1.0 point (graded)

How oximeter sense heart pulse along with oxygen level?

- ☐ By counting pulse / heart rate of the light passed through red cells
- ☐ By using ECG signal through blood cell
- ☒ By measuring light intensity that passed through red cells using a separate calculation.
- ☐ By using sonar



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### Question

1.0/1.0 point (graded)

Piezoelectric material is not used to detect

- ☐ any kind of sound
- ☐ any kind of vibration
- ☐ any kind of pressure
- ☒ any kind of radiation
- ☐ all of the above



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### Question

1.0/1.0 point (graded)

Main difference between RTD and Thermistor is:

- ☐ RTD use junction of two material but Thermistor use single material
- ☐ RTD is used in IC where Thermistor is not
- ☒ Type of material- one is metal and other one is polymer or ceramic
- ☐ Both are same- used to measure temperature



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### Question

1.0/1.0 point (graded)

Assume a scenario, where some coal miners want to work deep under the ground base where they dont know how deep they have to work under.

For this situaiton which sensor(s) can be used?

- ☐ Resistivity of LDR sensor
- ☐ Electromagnetic Radiation of IR sensor
- ☒ time and distance measurement of Sonar Sensor
- ☒ Distance measurement of laser light of LiDAR sensor
- ☐ Mechanism of Proximity sensors



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### Question

2.0/2.0 points (graded)

Which statements are true for above scenario for first situation:

- ☒ the lenght of time duration of reflecting ultrasonic sound can help to estimate the depth of the mine.
- ☒ the duration of recieving laser light can help to estimate the depth of the mine.
- ☐ The concentration of electromagnetic radiation can help to estimate the depth of the mine.
- ☐ small value of time (t) determines more depth of the mine



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### Question

1.0/1.0 point (graded)

Which mechanism is in case of a thermal imager?

- ☐ converting temperature differences to electrical voltage reading
- ☐ Measuring potential difference to get the reading of temperature between two different juctions
- ☒ Object or body emitted infrared data covertred into electronic image and finally electronic reading
- ☐ sensing the temperature from environment and finally converting it to human readable format by using tranducers.



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### Question

1.0/1.0 point (graded)

Which statement is true for inductive proximity sensor?

- ☒ has electromagnetic field
- ☐ decreased current flow means close proximity
- ☐ can detect a wooden chair near to the sensor



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### Question

1.0/1.0 point (graded)

Which statement(s) is/are true for capacitive proximity sensor?

- ☒ has electrostatic field
- ☐ increased capacitance means decreased oscillation
- ☒ can detect a metal object as well as a wooden chair near to the sensor



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### Question

2.0/2.0 points (graded)

If we want to measure speed of a car and an aeroplane by acceloremeter. Then which statement(s) is/are true:

- ☒ If we use piezoelectric mechanism, it will produce more AC voltage in case of plane than car.
- ☐ If we use capacitance mechanism, the difference between capacitance will be greater in case of car.
- ☐ If we use inductance mechanism, the difference between inductance will be greater in case of car.
- ☐ If we use gyroscope mechanism, the difference between stator and driving arm will be greater in case of plane.



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### Question

2.0/2.0 points (graded)

Why do we use potentiometer with sensor devices?

- ☒ To increase or decrease the sensitivity in some cases
- ☐ To increase / decrese voltage or capacitance differences.
- ☐ To increase or decrese current or inductance differences.
- ☒ To inrease or decrease the threshold value of sensor output



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