Introduction to Sensors
Final Assessment
Instructor Guide

Notes to the Instructor

This is the post-assessment for the *Introduction to Sensors Learning Module*.

Introduction to Sensors is a Learning Module consisting of the following:
- Knowledge Probe (Pre-assessment)
- Introduction to Sensors
- Activity: What are Sensors?
- **Final Assessment**

This companion Instructor Guide (IG) contains both the questions and answers for the assessment questions. Answers to the questions are indicated in red.

Introduction

The purpose of this assessment is to determine your understanding of sensors after having completed the *Introduction to Sensors Learning Module*.

1. Which of the following is a mechanical sensor?
   a. Oxygen detector
   b. Infrared thermometer
   c. Barometer
   d. Geiger counter

2. Which of the following BEST describes a sensor? A device that
   a. produces a readable output representative of a change.
   b. quantifies a value on its input and produces a readable output.
   c. converts one form of energy to another form of energy.
   d. converts a change on the input into a proportional movement.

3. What type of MEMS sensor is currently used for detecting analytes for biohazard detection, medical diagnosis, and food processing?
   a. Mechanical Sensor
   b. Chemical Sensor
   c. Electrical Sensor
   d. Thermal Sensor

4. An airbag deployment sensors use micro- _____ to sense a particular motion requiring the need for airbag deployment.
   a. accelerometers
   b. gyroscopes
   c. photodetectors
   d. barometers

5. Which of the following is NOT a sensor?
   a. Infrared thermometer
   b. Geiger counter
   c. Enose
   d. Thermocouple

6. A thermal sensor that uses a change in a coil's resistance to measure temperature uses _____ as the transducer.
   a. Infrared detectors
   b. diaphragms
   c. capsules
   d. RTDs

7. A transducer is to a sensor as
   a. the sun is to a plant
   b. a book is to its cover
   c. an ear is to the brain
   d. wood is to a fire

8. One of the biggest challenges of micro-sensors vs. macro-sized sensors is to develop
   a. micro-sized devices that are as durable as the macro-sized equivalents.
   b. a cheaper process for mass production of micro-sized devices.
   c. devices that are more accurate that their macro-equivalents.
   d. micro-sized batteries that are as long lasting as macro-sized batteries.