Introduction to Transducers
Final Assessment
Participant Guide

Introduction

The purpose of this assessment is to determine your understanding of transducers now that you have completed the *Introduction to Transducers Learning Module*.

1. An incandescent light bulb is a device that converts heat energy into electrical energy. A incandescent light bulb is a(n)
   a. sensor
   b. transducer
   c. actuator
   d. sensor and transducer
   e. transducer and actuator

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

3. Which of the following devices is both a transducer and an actuator?
   a. Solar cell
   b. Thermocouple gauge
   c. Electric motor
   d. Fuel cell

4. Which of the following BEST describes an electrochemical transducer?
   a. Converts electrical energy into chemical energy seen either as a change or a reaction.
   b. Converts motion or convection within a chemical into electrical energy.
   c. Converts electrical energy into motion or convection within a chemical.
   d. Converts the energy from a chemical change or reaction to electrical energy.

5. Galvanometers and generators are both what type of transducer?
   a. Electrostatic
   b. Electromechanical
   c. Thermoelectric
   d. Electroacoustic

6. Which of the following devices is an electrostatic transducer?
   a. Cathode ray tube (CRT)
   b. Incandescent light bulb
   c. Comb drive
   d. Accelerometer

7. A strain gauge is a transducer that converts
   a. mechanical stress or motion into electrical energy
   b. electrical energy into motion or mechanical stress
   c. mechanical stress or motion into heat
   d. heat into motion or mechanical stress

8. One solution for long-lasting batteries in the micro-scale is to build a battery that consists of a
   a. two-dimensional array of stacked, paper-thin flat electrodes.
   b. two-dimensional array of low aspect ratio stacked carbon posts.
   c. three-dimensional array of low aspect ratio carbon posts.
   d. three-dimensional array of high aspect ratio carbon posts.

Support for this work was provided by the National Science Foundation's Advanced Technological Education (ATE) Program through Grants. For more learning modules related to microtechnology, visit the SCME website (http://scme-nm.org).