Introduction to Actuators
Final Assessment
Instructor Guide

Notes to the Instructor

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

Introduction to Actuators is a Learning Module consisting of the following:

- Knowledge Probe (Pre-assessment)
- Introduction to Actuators
- Activity: What are Actuators?
- **Final Assessment**

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

Introduction

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

1. The output of an actuator is
   a. heat
   b. current
   c. motion
   d. variable

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

3. Which of the following is a thermal actuator?
   a. Motor
   b. Generator
   c. Bi-metallic strip
   d. Comb drive

4. Which of the following is an electrostatic actuator?
   a. Motor
   b. Generator
   c. Bi-metallic strip
   d. Comb drive

5. Which of the following is NOT a transducer and an actuator?
   a. Generator
   b. Bi-metallic strip
   c. Comb drive
   d. Motor

6. In microtechnology piezoelectric thin films are combined with metallic thin films to make thermal switches because of their different _____.
   a. Resistive properties
   b. Molecular make-up
   c. Absorption properties
   d. Temperature coefficients

7. Comb drives are micro-actuators that oscillate at a natural frequency. This frequency is called its _____ frequency.
   a. actuating
   b. resonant
   c. electromechanical
   d. electrostatic

8. Voltage is to an electrostatic actuator as
   a. heat is to a bi-metallic switch
   b. voltage is to a generator
   c. movement is to gears
   d. resistance is to a RTD

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