Week-4 Assignment-1

The due date for submitting this assignment has passed. **Due on 2018-02-21, 23:59 IST.**

Submitted assignment

**Week-4 Assignment-1**

Answer all the questions:

1) Flapper/Nozzle system is a pneumatic transducer. The signal is transmitted in the form of **variable air pressure in the range of**

- 10-40 psi
- 3-15 psi
- 15-25 psi
- 3-50 psi

No, the answer is incorrect.

Score: 0

Accepted Answers:

- 3-15 psi

2) Which of the following is not an example of transducer?

- Analogue voltmeter
- Thermocouple
- Photoelectric cell
- Pneumatic cylinder

No, the answer is incorrect.

Score: 0

Accepted Answers:

- Analogue voltmeter

3) Which of the following is not a characteristic of ideal transducer?

- High dynamic range

No, the answer is incorrect.

Score: 0

Accepted Answers:

- Analogue voltmeter
4) The linear variable differential transformer is
   - Inductive transducer
   - Non-inductive transducer
   - Capacitive transducer
   - Resistive transducer

   **No, the answer is incorrect.**
   Score: 0

   **Accepted Answers:**
   - *Inductive transducer*

5) The sensitivity of a typical LVDT is in the range of
   - 1-5 \( \text{v/v/cm} \)
   - 5-10 \( \text{v/v/cm} \)
   - 10-15 \( \text{v/v/cm} \)
   - 15-20 \( \text{v/v/cm} \)

   **No, the answer is incorrect.**
   Score: 0

   **Accepted Answers:**
   - 1-5 \( \text{v/v/cm} \)

6) Choose the correct option.
   I. LVDT is sensitive to the stray magnetic field.
   II. LVDT is highly sensitive to temperature changes
   III. Two secondary coils of LVDT are connected in series

   - All are true
   - Only I is true
   - Only II is true
   - Only I and II are true

   **No, the answer is incorrect.**
   Score: 0

   **Accepted Answers:**
   - Only I is true

7) Choose the correct option.

   Statement I: By adding an electromagnet and supportive spring, a flapper-nozzle system can be used as current to pressure (I/P) converter.

   Statement II: By adding a LVDT assembly and supportive spring, a flapper-nozzle system can be used as pressure to current (P/I) converter.

   - Both the statements are true
   - Both the statements are false
   - Statement I is true and statement II is false
   - Statement I is false and statement II is true
8) Which of the following is the likely value of Gauge Factor for a semiconductor type strain gauge? 1 point
- 0.01
- 1
- 5
- 100

No, the answer is incorrect.
Score: 0
Accepted Answers:
Both the statements are true

9) The calibration of strain gauge bridge circuit is carried out by 1 point
- Heating the active gauge to a known temperature
- Applying the known voltage across the dummy gauge
- Applying a known mechanical strain on the active gauge
- Shunting a known resistance across a dummy gauge

No, the answer is incorrect.
Score: 0
Accepted Answers:
Applying a known mechanical strain on the active gauge

10) Capacitive transducers are normally employed for _________ measurements 1 point
- Static
- Dynamic
- Transient
- Both static and dynamic

No, the answer is incorrect.
Score: 0
Accepted Answers:
Dynamic

11) A capacitor is constructed from two parallel plates. Its capacitance increases with 1 point
- Decrease in area of plates, all other factors remaining constant
- Increase in distance between plates, all other factors remaining constant
- Decrease in distance between plates, all other factors remaining constant
- None of the above

No, the answer is incorrect.
Score: 0
Accepted Answers:
Decrease in distance between plates, all other factors remaining constant

12) Quartz and Rochelle salt belong to ________ group of piezo-electric materials. 1 point
- Natural
- Synthetic
Which of the following generates emf when subjected to mechanical strain?

- Strain gauge material
- Piezo-electric material
- Steel conductor
- Thermosetting plastics

No, the answer is incorrect.
Score: 0
Accepted Answers:
Piezo-electric material

A quartz crystal has charge sensitivity of 2 pC/N. Its dielectric constant (\(\varepsilon\)) is 4.5 and Young's (E) modulus is \(9 \times 10^{10}\) Pa. Find the voltage sensitivity constant (in V/\(\mu\)m).

No, the answer is incorrect.
Score: 0
Accepted Answers:
(Type: Range) 4500, 4550