

- d. Photodiode is an examples of a inverter device. 1
- f) Which of the following statements is correct? 1
- a. Sensor and transducers are both examples of actuators
- b. Actuators and transducers are both examples of sensor
- c. Sensors and actuators are both examples of transducers.
- d. Sensor, transducers and actuator are conductive devices.
- g) What term describes the maximum expected error associated with a measurement or a sensor? 1
- a. Precision
- b. Resolution
- c. Accuracy
- d. Range
- h) Which of the following forms of temperature sensor produces a large change in its resistance with temperature, but is very non-linear? 1
- a. A thermistor
- b. A PN Junction sensor
- c. A Platinum resistance thermometer
- d. A Photo Transistor.
- i) Define the following terms 6
1. Calibration
2. Ratio errors
3. Strain Gauges
4. Transducer
5. Thermometer
6. Acoustic Measurement

Attempt any four questions from Q-2 to Q-8

- Q-2 Attempt all questions (14)**
- a) Explain the Dynamic Characteristics of Piezo-Electric Transducers with help of sketch 5
- b) Explain the classification of Transducer Elements. 5
- c) Discussed the varies types of Pressure Measurements with help of sketch 4
- Q-3 Attempt all questions (14)**
- a) Write a short note following terms 7
- i). Cathode Ray Oscilloscope
- ii). Thermoelectric Sensors
- b) Explain with figure the Optical-Fiber Sensors, 7
- Q-4 Attempt all questions (14)**
- a) Write the comparison between the smart sensor and optical –fiber sensor 7
- b) Explain the construction and principle for Bimetallic Thermometer 7
- Q-5 Attempt all questions (14)**
- a) Write the comparison between Photoconductive Transducer and Photo-voltaic Transducer. 7
- b) What is meaning of McLeod Gauge and explain it with figure? 7
- Q-6 Attempt all questions (14)**
- a) Write and explain the all methods for Radiation. 7



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| | b) | Explain the Non-dispersive infrared gas analyzer | 4 |
| | c) | Write principle and construction about the Bio-sensor | 3 |
| Q-7 | | Attempt all questions | (14) |
| | a) | Write and explain the bounded and unbounded condition for strain gauge elements. | 7 |
| | b) | Discuss about the types of Microphones with help of sketch | 7 |
| Q-8 | | Attempt all questions | (14) |
| | a) | Explain the Measurements of environmental air pollution parameters with mathematic equations. | 7 |
| | b) | How can work the Smoke density measurements. | 7 |

