

Paper Id: 

121710
--------

Roll No: 

--	--	--	--	--	--	--	--	--	--	--	--

**B.TECH**  
**(SEM-VII) THEORY EXAMINATION 2019-20**  
**ELECTRICAL INSTRUMENTATION AND PROCESS CONTROL**

**Time: 3 Hours****Total Marks: 100****Note:** Attempt all Sections. If require any missing data; then choose suitably.**SECTION A**

- 1. Attempt all questions in brief. 2 x 10 = 20**
- a. Compare Transducer & Inverse Transducer with example.
  - b. Draw characteristics of RTD.
  - c. Explain peltier effect in thermocouple?
  - d. What are the factors to select the Transducer?
  - e. What are different media in telemetry system?
  - f. Explain features of modern digital data acquisition system.
  - g. Explain the recording mechanism on digital tape recorder.
  - h. Compare transducer with sensor.
  - i. What is the process control?
  - j. Write advantages of Integral Controller.

**SECTION B**

- 2. Attempt any three of the following: 10x3=30**
- a. Explain How Piezo -electric crystal used as Transducer & Derive relation between voltage sensitivity & charge sensitivity.
  - b. With the help of neat sketch explain different types of Liquid Level Meters also write its advantage & disadvantages.
  - c. Draw the block diagram of Telemetry system also explain its types.
  - d. Write short note on Smart Sensor.
  - e. Compare Electronic controller with pneumatic controller.

**SECTION C**

- 3. Attempt any one part of the following: 10x1=10**
- a. Write short note on Thermocouple, write temperature range of different material - wire use in it.
  - b. Describe construction and working of L.V.D.T with advantage and disadvantages.
- 4. Attempt any one part of the following: 10x1=10**
- a. Explain different type of strain gauges along with their principle of operation.
  - b. Write short note on Hall Effect based transducer.
- 5. Attempt any one part of the following: 10x1=10**
- a. Draw the block diagram for frequency division multiplexing; what are advantages of frequency modulation?
  - b. Explain Analog & Digital Acquisition system with the help of Block Diagram.
- 6. Attempt any one part of the following: 10x1=10**
- a. What is strip chart recorder? Explain its construction and working with its application.
  - b. Explain Analogy of magnetic tape recording & its working principle.
- 7. Attempt any one part of the following: 10x1=10**
- a. What is the Principle of process control, Explain different elements used in process control?
  - b. Compare Proportional, Integral, Derivative controller.