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No. of Printed Pages—2

IC-601

B. TECH.

**SIXTH SEMESTER EXAMINATION, 2003-2004
TRANSDUCERS AND DISPLAY SYSTEMS**

Time : 3 Hours

Total Marks : 100

Note : Attempt All FIVE questions.1. Attempt any *FOUR* parts :— (5×4=20)

- (a) Define Transducer and Inverse Transducer.
- (b) Explain the working principle of a Thermocouple.
- (c) Describe the method for measurement of temperature with RTD.
- (d) What are the desirable properties of a Transducer ?
- (e) A Chromel-Alumel hot junction is connected to a potentiometer. This is at a temperature 20 °C and gives reading 37.01 mV. Determine the measured temperature assuming the thermocouple to conform the values at 0 °C reference junction. The emf at 20 °C is 0.8 V. Calculate total emf.
- (f) Describe advantages and limitations of Thermistors.

2. Attempt any *FOUR* parts :— (5×4=20)

- (a) Explain the different principles of working of Capacitive Transducer.
- (b) Explain Piezo-electric Transducer with mathematical formula of charge sensitivity and voltage sensitivity.
- (c) Explain the working principle of LVDT with neat sketch.

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- (d) Define a Digital Transducer with classifications.
- (e) Explain various pressure-sensing elements.
- (f) Explain Semiconductor Diode Temperature Sensor with neat sketch.

3. Attempt any TWO parts :— (10×2=20)

- (a) Prove that in a CRO the electron beam sketches out the waveform of the voltage applied to the Y plates, on the CRT screen. Why does iron burn not occur in electrostatic deflection system ? Also, explain working of a ramp type DVM.
- (b) Explain the theory and working of an LED. Describe advantages of LEDs with their uses.
- (c) Give an overview of Digital Display Devices.

Attempt any TWO parts :— (10×2=20)

- (a) Explain various gas discharge plasma devices. Also, give their applications and advantages over other display devices.
- (b) Explain the working principle of Liquid vapour Displays. What are their advantages and disadvantages ?
- (c) Explain various LCD systems with their applications.

Attempt any TWO parts :— (10×2=20)

- (a) Explain the functioning of a basic type of Strip Chart recorder. Describe the different types of marking mechanisms used in it.
- (b) Describe FM recordings and explain its advantages and disadvantages.
- (c) Explain Digital Magnetic Recorders with their applications. Also, give various advantages and disadvantages of magnetic recording.

