

2003000205020095
EXAMINATION OCTOBER 2024
BACHELOR OF SCIENCE (FIFTH SEMESTER)
ELECTRONICS-X - LEVEL 2
INDUSTRIAL INSTRUMENTATION

[Time: As Per Schedule]

[Max. Marks: 50]

Instructions:

1. **Fill up strictly the following details on your answer book**
 - a. Name of the Examination: **BACHELOR OF SCIENCE (FIFTH SEMESTER)**
 - b. Name of the Subject: **ELECTRONICS-X - LEVEL 2 INDUSTRIAL INSTRUMENTATION**
 - c. Subject Code No: **2003000205020095**
2. Sketch neat and labelled diagram wherever necessary.
3. Figures to the right indicate full marks of the question.
4. All questions are compulsory.

Seat No:

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Student's Signature

Q.1 Answer in brief.

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- A) On what principle the non-electrical methods of temperature measurement is based on?
- B) Define transducer. Name any two inductive transducers.
- C) State Advantages of Electrical Transducers.
- D) State the devices to sense/measure force.

Q.2

- A) Explain General data acquisition system with block diagram.
- B) State various technique of D-to-A converter. Explain any one technique for D- to-A converter.

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OR

- A) State the principle on which the capacitive transducer works. Explain any one principle of operation of capacitive transducers in detail.
- B) Explain factors influencing the choice of Transducers for a specific application.

Q.3

- A) Explain the principle of resistive transducer and explain strain gauge in details.
- B) Derive the strain gauge and derive express for gauge factor.

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OR

- A) Explain the principle of absorption spectroscopy and laws of radiation absorption.
- B) What is the principle operation of Dual-beam photometers? State anyone application in research.

Q.4 Write Note on (Any TWO)

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- A) Bimetallic Thermometer
- B) Resistance - Temperature Detectors (RTDs)
- C) Pneumatic load cell
- D) Semiconductor Resistance Sensors (Thermistors)
