

Seat
No.

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CEI1328

**Mechatronics
(New) (1070)**

P. Pages : 2

Time : Three Hours

Max. Marks : 100

Instructions to Candidates :

1. Do not write anything on question paper except Seat No.
2. Answersheet should be written with blue ink only. Graph or diagram should be drawn with the same pen being used for writing paper or black HB pencil.
3. Students should note, no supplement will be provided.
4. Attempt **all five** questions.
5. Attempt **any two** questions from each unit.
6. Assume suitable data if necessary.
7. Use of non programmable calculator is allowed.
8. Figures to the right indicate full marks.

UNIT - I

1. a) What is an optical encoder ? What are their types ? Explain incremental encoder. **10**
- b) Explain which transducer is used for strain measurement in mechatronics. **10**
- c) Write notes on Reed Relay & Hall effect sensor. **10**

UNIT - II

2. a) Explain how logarithmic amplifier is used for linearization. **10**
- b) With the help of circuit diagram. Explain the Analog multiplexer. **10**
- c) Discuss the integrator & Differentiator op amp circuits which is used in conditioning the output of various transducer. **10**

UNIT - III

3. a) Explain the principle of operation of variable reluctance stepper motor. **10**
- b) What is mean by cylinder ? Explain single acting & Double acting cylinder. **10**
- c) Draw & explain the block diagram of Hydraulic system components. **10**

UNIT - IV

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| 4. | a) | Draw & explain the block diagram of PLC. | 10 |
| | b) | Explain the solid state output circuits of PLC. | 10 |
| | c) | Write notes on Ladder diagram. | 10 |

UNIT - V

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| 5. | a) | Explain the different types of digital IC output configuration. | 10 |
| | b) | Explain the interfacing of microcontroller to digital to analog conversion. | 10 |
| | c) | Explain the interfacing of microcontroller to seven segment display. | 10 |
