TED (15/19) – 4041
(Revision – 2015/19)

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Reg.No……………..
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## DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/ COMMERCIAL PRACTICE, NOVEMBER – 2023

### ELECTRONICS INSTRUMENTS AND MEASUREMENTS

[Maximum Marks : 100]                                                    [Time : 3 hours]

### PART – A
(Maximum Marks : 10)

Marks

I.   Answer **all** questions in one or two sentences.  Each question carries 2 marks.

   1.  Define resolution?

   2.  What is dual beam CRO?

   3.  Define transducer.

   4.  Draw the circuit diagram of a Wheatstone bridge.

   5.  List different types of DAS.                                              (5x2=10)

### PART – B
(Maximum Marks : 30)

II.   Answer any **five** of the following questions.  Each question carries 6 marks.

   1.  Explain the conversion of galvanometer into ammeter using a neat diagram.

   2.  Explain a dual trace CRO using block diagram.

   3.  Explain the working principle of capacitive transducer.

   4.  Explain the principle of measuring frequency using wien bridge using figure.

   5.  List the applications of logic analyzer.

   6.  Explain the role of telemetry in instrumentation system.

   7.  Explain a closed loop control system using block diagram.

                                                                      (5x6=30)

## PART – C
### (Maximum Marks : 60)
(Answer **one full** question from each unit. Each full question carries 15 marks)

### UNIT – I

**III.** (a) Explain analog multimeter using a block diagram. (8)

(b) List the specifications of analog multimeter. (7)

**OR**

**IV.** (a) Explain how unknown frequency can be measured using digital frequency meter with the help of block diagram. (8)

(b) Explain how a galvanometer can be converted to voltmeter using a diagram. (7)

### UNIT – II

**V.** (a) Draw and explain the functional block diagram of a CRO. (8)

(b) Explain the working principle of a thermocouple using a neat figure. (7)

**OR**

**VI.** (a) Explain the working of dual beam CRO with the help of block diagram. (8)

(b) Describe the working of Hall effect sensor using a neat diagram. (7)

### UNIT –III

**VII.** (a) Explain the method of inductance measurement using Maxwell's bridge with the help of suitable figure. (8)

(b) Draw and explain the block diagram of a logic analyzer. (7)

**OR**

**VIII.** (a) Explain the method of measuring unknown resistance using wheatstone bridge. (7)

(b) Draw and explain the block diagram of function generator. (8)

### UNIT – IV

**IX.** (a) Explain the working of strip chart recorder using a neat figure. (8)

(b) Draw and explain the block diagram of analog DAS. (7)

**OR**

**X.** (a) Draw and explain the block diagram of an open loop control system. (7)

(b) Draw and explain the block diagram of a telemetry system. (8)

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