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(REVISION — 2015)

Reg. No. .....

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DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/ MANAGEMENT/COMMERCIAL PRACTICE — OCTOBER, 2019

ELECTRONICS INSTRUMENTS AND MEASUREMENTS

[*Time* : 3 hours

(Maximum marks : 100)

PART — A

(Maximum marks : 10)

Marks

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

1. Define the term precision of an instrument.
2. Write two specifications of analog multimeter.
3. List the application of CRO.
4. What is spectrum analyser ?
5. List different types of DAS. (5×2 = 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 voltmeter and deduce the relation for the resistance.
2. List the specifications of a digital multimeter.
3. Draw the functional block diagram of CRO and explain the working of each block.
4. Explain the working principle of microphone type transducer.
5. Explain the principle of measuring frequency using wien bridge.
6. List the application of logic analyser.
7. Explain the role of telemetry in instrumentation system. (5×6 = 30)

[96]

[P.T.O.

Marks

PART — C

(Maximum marks : 60)

(Answer *one* full question from each unit. Each full question carries 15 marks.)

UNIT — I

III (a) Differentiate moving coil and moving iron instruments. 6

(b) Explain the working of analog multimeter with neat diagram. 9

OR

IV (a) Draw the block diagram of digital frequency meter and explain the working of each block. 9

(b) Draw the block diagram of digital multimeter. 6

UNIT — II

V (a) Draw the cross sectional view of CRT used in CRO and explain its working. 8

(b) Explain the working principle of capacitive transducer. 7

OR

VI (a) Explain the working principle of LVDT with neat figure. 8

(b) Illustrate the working of DSO with relevant figure. 7

UNIT — III

VII (a) Explain the resistance measurement using Wheatstone's bridge. 8

(b) List the applications of spectrum analyser. 7

OR

VIII (a) Explain the principle of capacitance measurement using Schering bridge. 8

(b) Draw the block diagram of function generator and explain each block. 7

UNIT — IV

IX (a) Explain the working of X-Y recorder with relevant figure. 6

(b) Explain the block diagram of basic instrumentation system. 9

OR

X (a) Differentiate closed loop and open loop control system. 6

(b) Explain the block diagram of digital DAS. 9

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