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(Revision-2015/19)

A22-06528

Reg.No.....
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DIPLOMA EXAMINATION IN ENGINEERING/TECHNOLOGY/MANAGEMENT/ COMMERCIAL PRACTICE, APRIL-2022

ELECTRICAL AND ELECTRONICS INSTRUMENTS

[Maximum marks: 100] (Time: 3 Hours)

PART – A
Maximum marks : 10

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

1. Define Damping torque in moving system.
2. State two differences between PMMC and PMMI instruments.
3. Draw the circuit diagram of Hays bridge.
4. Write the functions of horizontal and vertical deflection plates in cathode ray tube.
5. List the types of recorders. (5 x 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 ammeter.
2. Describe DC current measuring circuit in an analog multimeter
3. Explain the resistance measurement using DC wheatstones bridge.
4. Illustrate the working principle of Dynamo meter type wattmeter with neat diagram.
5. Write a short notes on different types of CRO probes.
6. Explain the phase measurement using CRO
7. Draw and explain the working of XY recorders. (5 x 6= 30)

PART – C
Maximum marks : 60

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

UNIT –I

III. (a) Draw and explain the constructional details and working principal of D'Arsonoval Galvanometer. (7)

(b) Explain the resistance measurement circuit using analog multimeter. (8)

OR

IV.(a) With neat circuit diagram explain the construction and working principle of attraction type moving iron instruments. (7)

(b) Explain the role of controlling torque in moving system and how it is produced. (8)

UNIT-II

V. (a) Explain the construction and working principle of single phase energy meter with neat diagram. (7)

(b) Explain the circuit diagram of capacitance measurement using Shering's bridge. (8)

OR

VI. (a)With the circuit diagram explain the measurement of frequency using Wein's bridge. (8)

(b) Explain the impedance measurements using Maxwell's bridge. (7)

UNIT-III

VII. (a) Draw the block diagram of CRO and explain the function of each block. (7)

(b) Explain the frequency measurement using CRO. (8)

OR

VIII.(a) Draw and explain the block diagram of digital storage oscilloscope. (8)

(b) With neat schematic diagram explain the working of cathode ray tube. (7)

UNIT-IV

IX. (a) Draw the block diagram of Ramp type digital voltmeter and explain the working. (8)

(b) Draw the block diagram of digital multimeter. (7)

OR

X. (a) Describe the working of strip chart recorder with figure. (7)

(b) Draw the diagram of potentiometric type recorder. (8)

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