

1233**Code : 15EE42T**Register
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IV Semester Diploma Examination, Nov./Dec. 2017**ELECTRICAL MEASUREMENTS & MEASURING
INSTRUMENTS****Time : 3 Hours]****[Max. Marks : 100**

- Note :** (i) Answer any **six** questions from Part – A. Each questions carries **5** marks.
(ii) Answer any **seven** questions from Part – B. Each questions carries **10** marks.

PART – A

1. Define :

- (i) Precision
- (ii) Accuracy
- (iii) Sensitivity
- (iv) Resolution
- (v) Tolerance

2. Explain calibration of moving coil voltmeter.

3. Compare moving coil instruments and moving iron instruments.

4. A 3 phase 500 V motor load has a power factor of 0.4. Two wattmeters connected to measure the input they show the input to be 30 kW. Find the reading of each wattmeter W_1 and W_2 .

5. Illustrate the measurement of inductance using Maxwell's Bridge.

6. Explain digital tong tester with neat block diagram.

7. List the application of digital LCR meter.

8. List the types of transducer.

9. Explain the operation of thermocouple with neat sketch.

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PART – B

10. (a) Explain : 7
(i) Deflecting system
(ii) Controlling system and
(iii) Damping system
(b) List the types of errors in moving iron instruments. 3
11. Explain the construction and working of Permanent Magnet Moving Coil (PMMC) instrument with neat sketch. 10
12. (a) Explain extension range of moving coil ammeter. 6
(b) A moving coil meter takes 25 mA to produce a full scale deflection and resistance of the meter is 10 Ohm. Design a suitable scheme so as to use instrument as an
(i) Ammeter reading 0-20 Amps and as
(ii) Voltmeter reading 0-20 volts 4
13. Explain construction and operation of single phase induction type energy meter. 10
14. (a) List the types of errors in electrodynamicometer type wattmeter and explain each of them. 7
(b) If the three arms of wheatstone bridge are having resistance of 5000 ohms, 10000 ohms and 15000 ohms. Then find the resistance required to balance the Bridge. 3
15. Explain counter type digital frequency meter with block diagram. 10
16. (a) Explain the working of digital LCR meter with block diagram. 7
(b) List the advantages of digital non-contact type tachometer. 3
17. Explain Linear Variable Differential Transducer (LVDT) with neat sketch. 10
18. (a) Explain R.F. power measurement using Balanced Balometer Bridge. 6
(b) List advantages and disadvantages of Piezo electric transducer. 4
19. (a) Compare analog and digital multimeters. 5
(b) Explain DC signal conditioning system with block diagram. 5