

**3243**  
**BOARD DIPLOMA EXAMINATION, (C-09)**  
**MARCH/APRIL - 2019**  
**DIPLOMA IN ELECTRICAL & ELECTRONICS ENGINEERING**  
**ELECTRICAL & ELECTRONIC MEASURING INSTRUMENTS**  
**THIRD SEMESTER EXAMINATION**

**Time: 3 Hours****Total Marks: 80**

**PART - A (10 x 3 = 30 Marks)**

*Note 1: Answer all questions and each question carries 3 marks*

*2: Answers should be brief and straight to the point and shall not exceed 5 simple sentences*

1. Why damping torque is necessary in measuring instruments?
2. What are the different types of supporting systems?
3. What are the applications of MC instruments?
4. Draw the circuit diagram of Weston Synchroscope.
5. Calculate the shunt required to extend the range of moving coil ammeter, which takes 100 mA to measure 50 A if the resistance of the coil is 0.1 ohm.
6. State the applications of potentiometer.
7. List any three applications of transducer.
8. List any three applications of Digital multimeters.
9. State the components of three phase digital energy meter.
10. State any three advantages of Digital instrument.

**PART - B (5 x 10 = 50 Marks)**

*Note 1: Answer any five questions and each question carries 10 marks*

*2: The answers should be comprehensive and the criteria for valuation is the content but not the length of the answer*

11. A 3-phase delta connected balanced load consists of resistance of 20 ohm and inductive reactance of 25 ohm connected to 440 V, 50 Hz supply. Find the wattmeters' readings, if the power is measured by 2-wattmeter method.
12. Explain the construction and working of M.I. attraction type instruments with a neat diagram.
13. Explain the construction and working of dynamometer type ammeter with neat sketch.
14. List the common errors in induction type energy meter and state remedies for errors.
15. Explain how Megger is used to measure earth resistance with a neat sketch.
16. Write short notes on (i) Thermocouple (ii) Thermistors.
17. Draw the basic block diagram of ramp-type digital voltmeter and explain its working.
- 18A. Explain the difference between Absolute Instruments and Secondary Instruments.
- B. Draw the block diagram of single phase digital energy meter.

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