

313334

25226

3 Hours / 70 Marks

Seat No.

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- Instructions* – (1) All Questions are *Compulsory*.
(2) Answer each next main Question on a new page.
(3) Illustrate your answer with neat sketches wherever necessary.
(4) Figures to the right indicate full marks.
(5) Assume suitable data, if necessary.
(6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. **Attempt any FIVE of the following:** **10**
- a) State the function of deflecting torque.
 - b) State significance of measurement.
 - c) Define Multiplying factor of wattmeter. Write its formula.
 - d) List two advantages of Digital measuring instruments
 - e) Write any four application of multimeter.
 - f) Define:
 - i) Sensor
 - ii) Transducer.
 - g) Write classification of Level measurement transducer.

P.T.O.

- 2. Attempt any THREE of the following: 12**
- a) Explain construction and working of Permanent Magnet moving coil (PMMC) instruments with neat labelled diagram.
 - b) Draw labelled block diagram of Smart energy meter.
 - c) Explain working of piezoelectric transducer with labelled diagram.
 - d) Explain with neat sketch, working of capacitive type level measurement
- 3. Attempt any THREE of the following: 12**
- a) Explain construction and working principle of Permanent Magnet Moving Iron instrument with labelled diagram.
 - b) Explain with diagram of two wattmeter method for measurement of 3-phase active power in balance RL star connected load.
 - c) Draw block diagram of function Generator.
 - d) Draw and explain block diagram of instrumentation system.
- 4. Attempt any THREE of the following: 12**
- a) Define:
 - i) Accuracy
 - ii) Precision
 - iii) Static Error
 - iv) Resolution.
 - b) Explain construction and working of dynamometer type wattmeter with labelled diagram.
 - c) Draw labelled diagram of Western frequency meter.
 - d) Describe construction and working of LVDT with labelled diagram.
 - e) Explain working of radiation type of level measurement with labelled diagram.

5. Attempt any TWO of the following: 12

- a) Explain with neat diagram of one wattmeter method for Reactive Power measurement and also draw a Phasor diagram in RL Delta connected load.
- b) Draw basic block diagram of CRO. Write function of each block.
- c) Write classification of flow measurement. Explain electromagnetic flow measurement with neat diagram.

6. Attempt any TWO of the following: 12

- a) Explain with labelled diagram construction and working of synchroscope.
 - b) Explain pressure measurement transducer Bourdon tube with LVDT as secondary transducer. Draw labelled diagram of same.
 - c) Write any three units of Temperature measurement. Explain Resistance Temperature Detector (RTD) with labelled diagram.
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