

# 22325

**22223**

**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 answers 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) Define the terms:
    - i) Accuracy
    - ii) Precision
  - b) State the function of deflecting torque.
  - c) List classification of resistances along with their measuring devices used for measurement of resistance valve.
  - d) List the applications of multimeter.
  - e) State the working principle of dymeter type wattmeter.
  - f) State the effects of unity power factor and zero pf on wattmeter reading.
  - g) State the methods of range extension of ammeter.

P.T.O.

- 2. Attempt any THREE of the following:** **12**
- a) Compare analog ammeter and voltmeter on any four points.
  - b) A moving coil has a deflection of full scale at 28 mA, when a potential of about 60 volt is applied calculate-
    - i) Series resistance for full scale deflection of 600 volts.
  - c) Compare absolute and secondary instrument.
  - d) Draw a neat sketch and label the parts of P.M.M.C. type ammeters.
- 3. Attempt any THREE of the following:** **12**
- a) Describe why CT's of secondary should not be opened while function on range extension.
  - b) State the principle and application of clamp on meter.
  - c) Describe with neat sketch working of moving iron instruments.
  - d) Explain with neat block diagram working of single phase electronic energy meter.
- 4. Attempt any THREE of the following:** **12**
- a) Draw a neat sketch of dynamometer type wattmeter and label its parts.
  - b) Compare current coil and potential coil of wattmeter. (any four)
  - c) State errors in measurement of electric energy and also mention its cause for errors. (any four)
  - d) Describe construction of weston type frequency meter with neat sketch.
  - e) Draw neat diagram for power measurement by two wattmeter method.

**5. Attempt any TWO of the following:****12**

- a) Describe working of function generator with neat sketch.
- b) State necessity of calibration of measuring different devices and list its procedures.
- c) Describe construction with neat sketch of megger.

**6. Attempt any TWO of the following:****12**

- a) Describe working principle and use of rotating phase sequence indicators.
  - b) Describe with sketches single phase energy meter for electrical energy measurement.
  - c)
    - i) Draw neat diagram of Kelvin double bridge.
    - ii) Draw neat diagram of CRT and describe its construction.
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