

F 2983

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Reg. No.....

Name.....

**B.TECH. DEGREE EXAMINATION, DECEMBER 2012**

**Third Semester**

Branch : Electrical and Electronics Engineering

EE 010 304—ELECTRICAL MEASUREMENTS AND MEASURING INSTRUMENTS (EE)

(New Scheme—Regular/Improvement/Supplementary)

Time : Three Hours

Maximum : 100 Marks

*Answer all questions.*

**Part A**

*Each question carries 3 marks.*

1. List the advantages and disadvantages of induction instrument.
2. What are the factors which affect the value of earth resistance ?
3. What is meant by standardisation in slide wire potentiometer ?
4. Discuss how errors in current transformer are minimised.
5. What are permeameters ?

(5 × 3 = 15 marks)

**Part B**

*Each question carries 5 marks.*

6. Obtain the expression for deflecting torque and comment on the scale shape of moving iron instrument.
7. Discuss the measurement of capacitance of an imperfect capacitor using wien bridge.
8. Explain the loss of charge method for measurement of high resistances.
9. Obtain the expression for ratio and phase angle error in potential transformer.
10. Describe the method of determination of BH curve of a magnetic material.

(5 × 5 = 25 marks)

**Part C**

*Each question carries 12 marks.*

11. (a) Discuss different types of damping in indicating instruments. (8 marks)
- (b) The meter element of a PMMC instrument has a resistance of  $5\Omega$  and requires 15 mA for full scale deflection. Calculate the resistance to be connected (i) in parallel to enable the instrument to read upto 1 A ; (ii) in series to enable it to read upto 15 V.

(4 marks)

Or

**Turn over**