R09

B.Tech III Year I Semester (R09) Regular & Supplementary Examinations December 2014
ELECTRICAL & ELECTRONIC MEASUREMENTS
(Electrical & Electronics Engineering)

Time: 3 hours   Max. Marks: 70

Answer any FIVE questions
All questions carry equal marks
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1 (a) Describe the construction and working of PMMC instrument. Derive the expression for deflection.
  (b) Describe the working of a universal shunt used for multi-range ammeters. Derive the expression for resistance of different sections of a universal shunt used for a 3 range ammeter.

2 (a) Explain the effect of secondary burden on the ratio and phase errors of a current transformer.
  (b) Explain how power can be measured in a 3-phase circuit with the help of two wattmeters.

3 (a) Explain the sources of errors in a single phase induction type energy meter.
  (b) Describe the construction and working of two element induction type energy meter.

4 (a) Explain the term "Standardization" of a potentiometer. Describe the procedure of standardization of a d.c potentiometer.
  (b) Explain different types of AC potentiometers.

5 (a) Draw the circuit of a Wheatstone bridge and derive the condition for balance.
  (b) Derive the general equations for balance of a a.c bridge.

6 (a) Explain in detail about flux meter.
  (b) Describe the method of determining B-H curve of a magnetic material using step by step method.

7 (a) Describe the different parts of a CRT.
  (b) Explain the functioning of a time base generator in CRO.

8 (a) Explain in detail about integrating type DVM.
  (b) Describe in detail about digital frequency meter.

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