

Code :R7310202

**R7**

**III B.Tech I Semester(R07) Supplementary Examinations, May 2011**  
**ELECTRICAL MEASUREMENTS**  
**(Electrical & Electronics Engineering)**

Time: 3 hours

Max Marks: 80

**Answer any FIVE questions**  
**All questions carry equal marks**

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1. Explain the construction and working of PMMC type instruments.
2. (a) Mention the causes of errors in the current transformers.  
(b) A 100/5, 50Hz current transformer has a bar primary and a rated secondary burden of 12.5VA. The secondary winding has 196 turns and a leakage inductance of 0.96mH. With a purely resistive burden at rated full load, the magnetization mmf is 16A and the loss excitation requires 12A. Find the ratio and phase angle errors.
3. Sketch the circuit diagram for power measurement in a three-phase circuit using two wattmeters and show that the total power is given by algebraic sum of the wattmeter readings using vector diagrams.
4. Explain the construction and working of poly phase energy meter.
5. How a Co-ordinate type A.C potentiometer is standardized? Explain how an unknown voltage can be measured by using this potentiometer.
6. Derive the expression for bridge sensitivity and condition for balance for a wheat stone bridge with equal arms.
7. (a) Explain how Wein's bridge can be used for experimental determination of frequency  
(b) Explain the Anderson's Bridge with a neat bridge diagram.
8. Explain a method of experimental determination of flux density in a specimen of magnetic material using a Ballistic Galvanometer.

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