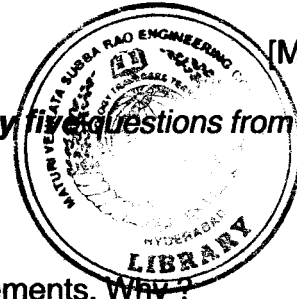


## FACULTY OF ENGINEERING

B.E. 2/4 (EE/Inst.) I Semester (New) (Main) Examination, December 2011  
ELECTRICAL MEASUREMENTS AND INSTRUMENTS

Time : 3 Hours]

[Max. Marks : 75

*Note : Answer all questions from Part A. Answer any five questions from Part B.*

## PART – A

(25 Marks)

1. What are the essentials of Indicating Instruments ? 3
2. 'PMMC' instruments can not be used for A.C. measurements. Why ? 2
3. What is meant by 'creeping error' in connection with energy meter ? How to rectify it ? 3
4. What is the necessity of a synchroscope ? 2
5. What is the function of Wagners earthing device ? 2
6. What is meant by loss angle of an imperfect capacitor ? 3
7. Distinguish between a Ballistic galvanometer and a flux meter. 3
8. What is meant by leakage factor of a D.C. machine ? 2
9. What is meant by standardisation of a D.C. potentiometer ? 2
10. The secondary of a current transformer should not be left open while its primary is energised. Why ? 3

## PART – B

(5×10=50 Marks)

11. Derive an expression for the deflecting torque of a moving Iron ammeter. Explain the scale shape. 10
12. With the help of neat diagram, explain the working of a single phase induction type energy meter. Derive the expressions for driving torque and braking torque. 10
13. a) With the help of neat diagram, explain the working of an electrical resonance type frequency meter. 5
- b) With the help of neat diagram, explain the working of Weston type of synchroscope. 5
14. With the help of neat diagram, explain the working of a Schering bridge. Draw the phasor diagram at balance. 10
15. a) Explain the principle of Lloyd-Fischer square for measuring Iron loss. 5
- b) Explain, how to obtain hysteresis loop using CRO. 5
16. With the help of neat diagram, explain the working of an AC coordinate type potentiometer. 10
17. What is meant by ratio and phase angle error of a current transformer ? Derive the necessary expressions for these errors. 10