Code No. 6037 / S

FACULTY OF ENGINEERING

B.E. 2/4 (EE / Inst.) I – Semester (Suppl.) Examination, July 2014

Subject: 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	'PMMC' instruments can not be used for AC measurements. Why?	2
2	Define accuracy, precision and uncertainty.	3
3	What are the advantages and disadvantages of induction type energy meter?	3
4	What is phantom loading? When it is used?	2
5	What is the use of maximum demand indicator?	2
6	Distinguish between a ballistic galvanometer and a flux meter.	3
7	What is a Megger?	2
8	Define actual ratio and nominal ratio.	2
9	Explain the calibration of volt meter.	3
10	What is Kelvin's double bridge?	3

PART – B (50 Marks)

11 Explain the constructional details and working principle of electrostatic instruments. Also derive an expression for deflecting torque of electrostatic instruments. 10

12 a) With the help of neat diagram, explain the working of Weston type of synchroscope. 5
b) With the help of neat diagram, explain the working of a Schering bridge. Draw the phasor diagram at balance. 5

13 The arm of an a.c. Maxwell's bridge are adjusted as:
Arm AB:Non-reactive resistance of 700 Ω
Arm CD:Non-reactive resistance of 300 Ω
Arm AC:Non-reactive resistance of 1200 Ω in parallel with capacitor of 0.5 μF. If the bridge is balanced under this condition, find the components of the branch BC. 10

14 a) Explain the principle of Lloyd-Fischer square for measuring iron loss. 5
b) Explain, how to obtain B-H curve using CRO. 5

15 Explain with the help of neat diagram, working of AC coordinate type potentiometer. 10

16 a) Explain what is the use of oscilloscope in frequency, phase and amplitude measurements. 5
b) Explain with a neat diagram reactive power measurement. 5

17 What is meant by ratio and phase angle error of a transformer? Derive the necessary expressions for these errors. 10

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