SANTHIRAM ENGINEERING COLLEGE, NANDYAL

Department of Electrical and Electronics Engineering

Name of the Laboratory: **ELECTRICAL MEASUREMENTS** ***Regulation:*** **R15**

Branch: **Electrical and Electronics Engineering** ***Year & Sem:*** **III- I**

Course Objectives

- Calibration of various electrical measuring/recording instruments.
- Accurate determination of resistance, inductance and capacitance using D.C and A.C Bridges.
- Measurement of parameters of choke coil

Course Outcomes

- Calibrate various electrical measuring/recording instruments.
- Accurately determine the values of inductance and capacitance using ac bridges
- Accurately determine the values of very low resistances
- Measure reactive power in 3-phase circuit using single wattmeter
- Determine ratio error and phase angle error of CT

List of Experiments

1. Calibration of Single Phase Energy Meter using Phantom loading method with RSS meter as standard
2. Calibration of Dynamometer Power Factor Meter
3. Crompton D.C. Potentiometer – Calibration of PMMC Ammeter and PMMC Voltmeter
4. Kelvin's Double Bridge – Measurement of very low Resistance values –Determination of Tolerance.
5. Measurement of % Ratio Error and Phase Angle of Given C.T. by Comparison.
6. Schering Bridge & Anderson Bridge for measurement of Capacitance and Inductance values.
7. Measurement of 3- Phase Reactive Power with Single-Phase Wattmeter.
8. Measurement of Parameters of a Choke Coil Using 3 Voltmeter and 3 Ammeter Methods.

In addition to the above eight experiments, at least any two of the experiments from the following list are required to be conducted:

1. Optical Bench – Determination of Polar Curve, Measurement of MHCP of Filament Lamps
2. Calibration of LPF Wattmeter – by Phantom Testing
3. Measurement of 3 Phase Power with Two Watt Meter Method (Balanced & Un balanced).
4. Dielectric Oil Testing Using H.T. Testing Kit
5. LVDT and Capacitance Pickup – Characteristics and Calibration
6. Resistance Strain Gauge – Strain Measurement and Calibration
7. Transformer Turns Ratio Measurement Using A.C. Bridge.

List of Equipments

1. Crompton DC Potentiometer
2. Kelvin Double Bridge
3. Schering Bridge with Accessories
4. Anderson Bridge with Accessories
5. Commercial C.Ts
6. 1-Ø Energy meter 5-10 A
7. LVDT Module
8. Capacitance Pick up Module
9. Resistance Strain Gauge/Strain Measurement & Calibration
10. Straigauge Measurement Trainer
11. Reactive power measurement 3-Phase Inductive load and Capacitive load
12. Inductive Coils and Resistive Loads

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