

B.Tech III Year II Semester

JNTUA COLLEGE OF ENGINEERING (AUTONOMOUS) PULIVENDULA
19AEE67- ELECTRICAL MEASUREMENTS LAB

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Course Objectives:

- Calibration of various electrical measuring instruments
- Accurate determination of inductance and capacitance using AC Bridges
- Measurement of coefficient of coupling between two coupled coils
- Measurement of resistance for different range of resistors using bridges
- Measurement of power using Watt meters by different methods

The following experiments are required to be conducted as compulsory experiments:

1. Calibration and Testing of single phase energy Meter
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 low resistance – Determination of Tolerance
5. Determination of Coefficient of coupling between two mutually coupled coils.
6. Schering Bridge
7. Measurement of 3-phase reactive power with single-phase wattmeter
8. Anderson bridge

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

9. Maxwell's bridge and DeSauty bridge
10. Calibration of LPF wattmeter – by Phantom loading
11. Wheatstone bridge – measurement of medium resistances
12. LVDT and capacitance pickup – characteristics and Calibration
13. Resistance strain gauge – strain measurement and Calibration
14. Transformer turns ratio measurement using AC Bridge
15. AC Potentiometer – Calibration of AC Voltmeter, Parameters of Choke coil

Reference Books:

1. Electrical & Electronic Measurement & Instruments by A.K. Sawhney Dhanpat Rai & Co. Publications, 2007.
2. Electrical Measurements and measuring Instruments – by E.W. Golding and F.C. Widdis, 5th Edition, Reem Publications, 2011.

Course Outcomes:

At the end of this Course the student will be able to

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| • Accurately determine the values of inductance and capacitance using AC bridges | L1 |
| • Compute the coefficient of coupling between two coupled coils | L2 |
| • Accurately determine the values of very low resistances | L1 |
| • Determine power of the Three phase AC circuits | L2 |



