

Electrical and Electronics Engineering Department

ELECTRICAL SCIENCE LABORATORY

Paper Code: ES-159/160	L	T/P	C
Paper: Electrical Science Lab	0	2	1

Course Outcome:	
At the end of the course, student will be able to:	
CO.ES-107.1	Ability to understand and use Kirchoff's Laws to solve resistive circuit problems.
CO.ES-107.2	Ability to analyse resistive, inductive and capacitive circuits for transient and steady state sinusoidal solutions.
CO.ES-107.3	Understand the first order filters and magnetic circuits
CO.ES-107.3	Understand the design of electrical machines.

List of Experiments:

1. To study different types of symbols and standard currently being used in electrical engineering.
2. Study and applications of CRO for measurement of voltage, frequency and phase of signals.
3. Connection of lamp by (1) Single Switch Method. (2) Two-way Switch Method.
4. To Verify Thevenin's & Maximum power transfer theorem
5. To Verify Superposition & Reciprocity Theorem.
6. To Measure Power & Power Factor in a Single-Phase A.C Circuit using Three Ammeters
7. To Measure Power & Power Factor in a Single-Phase A.C Circuit using three Voltmeters.
8. To calibrate a given single phase induction type Energy Meter.
9. Measure Power & Power Factor in a Three Phase Circuit using Two Single Phase Wattmeter.
10. To perform open circuit and short circuit test on single phase transformer.
11. To study of Resonance in a series R-L-C or Parallel R-L-C Circuits.

Note:- At least 8 Experiments out of the list must be done by the students.

List of Experiments		
EXP. No.	CO	Experiment
Exp1	CO1	To study different types of symbols and standard currently being used in electrical engineering.
Exp2	CO2	Study and applications of CRO for measurement of voltage, frequency and phase of signals.
Exp3	CO1	Connection of lamp by (1) Single Switch Method. (2) Two-way Switch Method.
Exp4	CO2	To Verify Thevenin's & Maximum power transfer theorem.
Exp5	CO2	To Verify Superposition & Reciprocity Theorem.
Exp6	CO1	To Measure Power & Power Factor in a Single-Phase A.C Circuit using Three Ammeters
Exp7	CO1	To Measure Power & Power Factor in a Single-Phase A.C Circuit using three Voltmeters.
Exp8	CO4	To calibrate a given single phase induction type Energy Meter.
Exp9	CO1	Measure Power & Power Factor in a Three Phase Circuit using Two Single Phase Wattmeter.
Exp10	CO3	To perform open circuit and short circuit test on single phase transformer.
Extra1	CO4	Starting, Reversing and speed control of DC shunt Motor

Extra2	CO4	Starting, Reversing and speed control of 3-phase Induction Motor.
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