II Year-II Semester		**L**	**T**	**P**	**C**
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NETWORKS & ELECTRICAL TECHNOLOGY LAB (RT21047)

Prerequisite Course:

Need basic idea of NA,ET subjects

Course Description and Objectives:

Course Outcomes:

Upon completion of the course, the student will be able to achieve the following outcomes.

COs	Course Outcomes	POs
1	Able to analyse RLC circuits and understand resonant frequency and Q-factor.	**3**
2	Able to determine first order RC/RL networks of periodic non- sinusoidal waveforms.	**3**
3	Able to apply network theorems to analyze the electrical network.	**3**
4	Able to describe the performance of dc shunt machine.	**3**
5	Able to investigate the performance of 1-phase transformer.	**3**
6	Able to perform tests on 3-phase induction motor and alternator to determine their performance characteristic	**3**

SYLLABUS

PART – A

Any five experiments are to be conducted from each part

1. Series and Parallel Resonance – Timing, Resonant frequency, Bandwidth and Q-factor determination for RLC network.
2. Time response of first order RC/RL network for periodic non-sinusoidal inputs – time constant and steady state error determination.
3. Two port network parameters – Z-Y Parameters, chain matrix and analytical verification.
4. Verification of Superposition and Reciprocity theorems.
5. Verification of maximum power transfer theorem. Verification on DC, verification on AC with Resistive and Reactive loads.
6. Experimental determination of Thevenin's and Norton's equivalent circuits and verification by direct test.

PART – B

1. Magnetization characteristics of D.C. Shunt generator. Determination of critical field resistance.
2. Swinburne's Test on DC shunt machine (Predetermination of efficiency of a given DC Shunt machine working as motor and generator).
3. Brake test on DC shunt motor. Determination of performance characteristics.
4. OC & SC tests on Single-phase transformer (Predetermination of efficiency and regulation at given power factors and determination of equivalent circuit).
5. Brake test on 3-phase Induction motor (performance characteristics).
6. Regulation of alternator by synchronous impedance method.