I B. Tech. – II Semester

(19BT20251) **NETWORK ANALYSIS LAB**

(Common to ECE and EIE)

Int. Marks	Ext. Marks	Total Marks	L	T	P	C
50	50	100	-	-	2	1

PRE-REQUISITES: Physics at Intermediate Level.

COURSE DESCRIPTION: Practical investigations on DC, single phase AC circuits, circuit theorems, transient circuits and Two-Port networks.

COURSE OUTCOMES: After successful completion of the course, students will be able to:

CO1. Analyze, measure, interpret and validate the practical observations by applying the conceptual knowledge of electrical networks.

CO2. Design resonant, transient and Two-port circuits/networks meeting the specified needs using electrical circuits/networks concepts.

CO3. Work independently and in teams to solve problems with effective communication.

List of Experiments:

Minimum Ten experiments are to be conducted.

1. Analysis of Series and Parallel circuits.
2. Mesh and Nodal analysis.
3. Phasor analysis of RL, RC and RLC circuits.
4. Current locus of RL and RC circuits.
5. Series and Parallel resonance.
6. Measurement of active and reactive power in a single phase circuit.
7. Verification of Superposition and Reciprocity theorems.
8. Verification of Thevenin’s and Norton’s theorem.
9. Verification of Maximum Power transfer theorem for DC and AC excitations.
10. Transient response of RL, RC and RLC circuits.

11. Determination of Open circuit and Short circuit parameters in isolated and interconnected networks.

12. Determination of ABCD and Hybrid parameters in isolated and interconnected networks.

REFERENCE BOOKS / LAB MANUALS:

1. P. S. Dhogal, *Basic Practicals in Electrical Engineering*, Standard Publishers, 2004.

2. Yannis Tsividis, *A First Lab in Circuits and Electronics*, Wiley, 1st edition, 2001.

ADDITIONAL LEARNING RESOURCES:

1. www.vlab.co.in, *Virtual Electric Circuits Lab*, A initiative of MHRD under NMEICT.
2. https://nptel.ac.in/courses/117106108/
3. https://ocw.mit.edu/high-school/physics/exam-prep/electric-circuits/