

G. NARAYANAMMA INSTITUTE OF TECHNOLOGY & SCIENCE

(For Women)

(AUTONOMOUS)

Shalkpet, HYDERABAD - 500 104

II Year B.Tech. EEE I-Semester

L T P C
- - 3 1.5

CIRCUITS LAB

Prerequisites: Basic Electrical Engineering

Course Objectives:

1. To Construct and verify various electrical circuits applying network theorems(AC).
2. To Learn different transient responses for various electrical circuits like RL, RC and RLC.
3. To Understand the concepts of Three phase, network topology, magnetic circuits and filters.
4. To Evaluate the various electrical and electronic parameters using two-port networks.

List of Experiments:

1. Separation of Self and Mutual inductance in a Coupled Circuit.
2. Determination of Coefficient of Coupling.
3. Determination of form factor for non-sinusoidal waveform.
4. Verification of Thevenin's and Norton's Theorems. (with A.C. Excitation)
5. Verification of Superposition and Maximum Power Transfer Theorems. (with A.C. Excitation)
6. Measurement of Active Power for Star and Delta connected balanced loads using two-wattmeter method.
7. Time response of first order RC / RL network for periodic non-sinusoidal inputs -Time constant and Steady state error determination.
8. Two port network parameters - Z - Y parameters, Analytical verification.
9. Two port network parameters - Transmission Line & Hybrid parameters, Analytical verification.

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

9. Locus Diagrams of RL and RC Series Circuits.
10. Verification of KCL & KVL.
11. DC Transient response of R-L-C circuit with variation of R parameter.
12. Frequency response of R-L, R-C circuits, Low Pass and High Pass Filters.

Course Outcomes: After completion of this course student should be able to:

1. Analyze various theorems for linear AC circuits.
2. Evaluate two port network parameters for various electrical circuits.
3. Analyze the transient and steady state behavior of AC circuits.
4. Understand the concept of three phase balanced and magnetic circuits.
5. Design passive filters and analyse different network topologies.
6. Determine self and mutual inductances and coefficient of coupling through the knowledge of "Magnetic Circuits"

N. M. Mahalingam

1) Sujal

2) E.M.

3) S. Srinivas

4) —

5) —

6) —

7) —

8) —

9) —

10) —

11) —

12) —

13) —

14) —

15) —

16) R. Balasubramanyam