NETWORK THEORY AND ANALYSIS LAB

Course Code	19EC3351	**Year**	II	**Semester**	I
Course Category	Program Core	**Branch**	ECE	**Course Type**	Lab
Credits	1	**L-T-P**	0-0-2	**Prerequisites**	Nil
Continuous Internal Evaluation	25	**Semester End Evaluation**	50	**Total Marks**	75

Course Outcomes	
Upon successful completion of the course, the student will be able to	
CO1	Estimate the steady state response of circuits for sinusoidal excitation
CO2	Analyse various circuits in the time and transform domains using transient analysis methods
CO3	Analyse various networks by applying transformation techniques, mesh analysis, nodal analysis and network theorems
CO4	Evaluate the bandwidth and quality factor of series and parallel resonant circuits
CO5	Determine the characteristics of different two port networks

Contribution of Course Outcomes towards achievement of Program Outcomes & Strength of correlations (3-High, 2: Medium, 1:Low)

Cos	**PO1**	**PO2**	**PO3**	**PO4**	**PO5**	**PO6**	**PO7**	**PO8**	**PO9**	**PO10**	**PO11**	**PO12**	**PSO1**	**PSO2**
CO1	**3**	**3**	**2**	**2**	**2**			**1**	**1**	**1**		**1**	**2**	**1**
CO2	**3**	**3**	**2**	**2**	**2**			**1**	**1**	**1**		**1**	**2**	**1**
CO3	**3**	**3**	**2**	**2**	**2**			**1**	**1**	**1**		**1**	**2**	**1**
CO4	**3**	**3**	**2**	**2**	**2**			**1**	**1**	**1**		**1**	**2**	**1**
CO5	**3**	**3**	**2**	**2**	**2**			**1**	**1**	**1**		**1**	**2**	**1**

Syllabus		
Expt. No.	**Contents**	**Mapped CO**
I	Measurement of sinusoidal voltage, frequency and effective and average values using CRO	**CO1**
II	Experimental determination of step response of RL, RC circuits	**CO2**
III	Experimental determination of step response of RLC circuits	**CO2**
IV	Experimental determination of time constant of series RL & RC circuits	**CO2**
V	Experimental determination of frequency response of RLC circuits	**CO2**
VI	Experimental verification of Kirchhoff's voltage and current laws	**CO3**
VII	Experimental verification of Thevenin's and Norton's theorems	**CO3**
VIII	Experimental verification of Superposition Theorem	**CO3**
IX	Experimental verification of Maximum power transfer Theorem	**CO3**
X	Simulation of a given series resonance circuit	**CO4**
XI	Simulation of a given parallel resonant circuit	**CO4**

XII	Determination of parameters for a given two port network	**CO5**

Learning Resources
Text Books
1. M.E.VanValkenburg, Network Analysis, III Edition , Pearson Education 2. ASudhakar and ShyammohanSPalli, Circuits and Networks, 5th Edition, McGraw Hill
Reference Books
1.William H Hayt, Jack E Kimmerly and Steven M. Durbin, Engineering Circuit Analysis, Tata McGraw Hill 2.Ravish R Singh , Network Analysis and Synthesis, Tata McGraw Hill Education (India) Pvt.Ltd, New Delhi.
e- Resources & other digital material
1.https://www.youtube.com/playlist?list=PLC7D3EAEFA0CC0420&app=desktop 2.https://www.tutorialspoint.com/network_theory/network_theory_quick_guide.htm 3.https://nptel.ac.in/courses/108/105/108105159/