

**SARDAR PATEL UNIVERSITY**  
**Programme & Subject: M.Sc (Instrumentation)**  
**Semester: I**  
**Syllabus with Effect from: June - 2010**

<b>Paper Code: PS01EINS02</b>	<b>Total Credit: 4</b>
<b>Title Of Paper: Network Analysis</b>	

Unit	Description in detail	Weightage (%)
I	Transient Response of RC, RL, RLC Circuits to various excitation signals such as step, ramp, impulse and sinusoidal excitations using Laplace transform.	25%
II	Terminal pairs or Ports, Network functions for one-port and two-port networks, poles and zeros of Network functions, Restrictions on pole and zero Locations for driving point functions and transfer functions, Time domain behavior from the pole-zero plot.	25%
III	Relationship of two-port variables, short-circuit Admittance parameters, open circuit impedance, parameters, Transmission parameters, hybrid parameters, relationships between parameter sets, Inter-connection of two port networks	25%
IV	Principles of network topology, graph matrices, network analysis using graph theory, Positive real functions, synthesis of one port and two port networks, elementary ideas of Active networks.	25%

**Basic Text & Reference Books:-**

- Network Analysis & Synthesis, Umesh Sinha, StyPrakash Publication.
- Network Analysis & Synthesis, F. F. Kuo, John Wiley & Sons, Inc.

