

**Code No.: ETEC 205**  
**Paper: Circuits and Systems**

<b>L</b>	<b>T</b>	<b>C</b>
<b>3</b>	<b>1</b>	<b>4</b>

**INSTRUCTIONS TO PAPER SETTERS:**

**MAXIMUM MARKS: 75**

1. Question No. 1 should be compulsory and cover the entire syllabus. This question should have objective or short answer type questions. It should be of 25 marks.
2. Apart from question no. 1, rest of the paper shall consist of four units as per the syllabus. Every unit should have two questions. However, student may be asked to attempt only 1 question from each unit. Each question should be of 12.5 marks.

**Unit-I**

Introduction to continuous and discrete signals, their classification and types, periodic waveforms and signal synthesis, LTI systems and their properties; system modeling in terms of differential equations and transient response of R, L, C circuits for impulse, step, ramp, sinusoidal and exponential signals.

**No. of Hours: 11**

**Unit-II**

Laplace Transform: Review of properties and applications of Laplace transform of complex waveform and transient response of R, L, C series, parallel, series-parallel circuits for all kinds of excitations.

**[No. of Hours: 11]**

**Unit-III**

Graph theory and its applications, two port networks – z, y, ABCD, h, g, inverse ABCD parameters their interconversion, interconnection of two 2-port networks, concept of transform impedance, Network theorems: Reciprocity, Superposition, Thevenin, Norton, Millman, Maximum Power Transfer and Tellegan

**No. of Hours: 11**

**Unit IV**

**Elements of Network Synthesis:** Foster's I and II, Cauer's I& II forms, Synthesis of LC, RC, RL Networks

**No. of Hours: 11**

**Text Books:**

1. Valkenburg, "Network analysis" PHI, 2000.
2. D. R. Choudhary, "Networks and Systems" New Age International, 1999.

**Reference Books**

1. Bhise, Chadda, Kulshreshtha, "Engineering network analysis and filter design" Umesh publication, 2000.
2. Kuo, "Network analysis and synthesis" John Weily and Sons, 2<sup>nd</sup> Edition.