



B.Sc. (Electronics) SEMESTER I

Paper I

(Basic Circuit Components And Network Analysis)

Unit I

Active Passive difference

<https://www.youtube.com/watch?v=DyXS9pS8FpE>

Passive Elements:

Resistors,

<https://www.youtube.com/watch?v=Gc1wVdbVI0E>

Colour code system, Series and parallel combination. Voltage and Current divider circuits.

<https://www.youtube.com/watch?v=eFlJy0cPbsY>

Capacitors:

<https://www.youtube.com/watch?v=5hFC9ugTGLs>

Inductors;

<https://www.youtube.com/watch?v=jm7ddVhEqBs>

Transformer classification, construction, working and applications.:

<https://www.youtube.com/watch?v=hXLA5sdT9Cs>

Relays

https://www.youtube.com/watch?v=1_YfuH_AcxQ

Switches,

<https://instrumentationtools.com/electrical-switches-principle-types/>

Introduction to Surface mounting devices.

<https://www.youtube.com/watch?v=ihoX7xORBz8>

Unit II

Circuit Analysis: Energy sources AC & DC, Kirchhoff's Current & Voltage Laws, Node & loop analysis method

<https://www.youtube.com/watch?v=8f-2yXiYmRI>

Network Theorems: Statements with explanation and problems (Dc only):

https://www.youtube.com/watch?v=uyE_UhLwIXc

Principal of Duality, Superposition Theorem,

<https://www.youtube.com/watch?v=ZJ8zD8m-B1Q>

Thevenin's Theorem & Norton's Theorem,

<https://www.youtube.com/watch?v=veAFVTIpKyM>



Millman's Theorem:

<https://www.youtube.com/watch?v=sizar9rAptk>

Maximum Power Transfer Theorem

<https://www.youtube.com/watch?v=U85eA3-suiQ>

Unit III

Transient Behavior of circuit elements under initial and final conditions in RL, RC and RLC circuits for AC and DC excitations

<https://www.youtube.com/watch?v=3YinmbkU0DE>

https://www.youtube.com/watch?v=KyIJ2v1_c-o

<https://www.youtube.com/watch?v=B4TezoTORYA>

AC Circuit Analysis: Sinusoidal Voltage and Current, Definition of Instantaneous, Peak, Peak to Peak, Root Mean Square and Average Values

https://www.youtube.com/watch?v=pbzP9mu4r_E

Resonant Circuits: Series and parallel resonance, frequency-response of series and Parallel circuits, Q-Factor, Bandwidth

<https://www.youtube.com/watch?v=G8KLJjq1E2o>

Unit IV

Transducer: Definition, Classification, characteristics of transducers

<https://www.youtube.com/watch?v=Zt1V6dyhoek>

<https://www.youtube.com/watch?v=AZdCXJx4xSA>

Construction and working of Resistive transducer- Potentiometer

https://www.youtube.com/watch?v=Wdl77HBP_yU

Capacitive transducer-by changing dielectrics & changing distance between the plates, piezoelectric transducer

<https://www.youtube.com/watch?v=FfPVeUcgT3I>

LVDT:

<https://www.youtube.com/watch?v=54fXRpwu9b0>

strain gauges:

<https://www.youtube.com/watch?v=s1WiMFQPFfo>

temperature transducers- thermistors, RTDS and thermocouples:

<https://www.youtube.com/watch?v=tg8M3uOJi2M>