

BSELE - SN101  
[w.e.f. 2020-21 Admitted Batch]



**Dr. B. RAMBEDKAR UNIVERSITY, SRIKAKULAM**

B.Sc ELECTRONICS SYLLABUS

STRUCTURE UNDER CHOICE BASED CREDITS SYSTEM

REVIEWED SYLLABUS w.e.f. 2020-2021

### **I B.Sc Semester- I**

#### **BASIC CIRCUIT THEORY AND ELECTRONIC DEVICES & CIRCUITS**

Work Load: 60 Hours Per Semester

4 Hrs/Week

##### **UNIT -I:(12 Hrs)SINUSOIDAL ALTERNATING WAVEFORMS:**

Definition of current and voltage. The sine wave, general format of sine wave for voltage or current, phase relations, average value, effective (R.M.S) values. Differences between A.C and D.C. Phase relation of R, L and C

##### **UNIT-II: (12hrs)PASSIVE NETWORKS AND NETWORKS THEOREMS (D.C):**

Branch current method, Nodal Analysis, Superposition Theorem, Thevenin's Theorem, Norton's Theorem, Maximum Power, Milliman and Reciprocity theorems.

##### **UNIT-III: (12hrs)RC, RL AND RLC CIRCUITS:**

Frequency response of RC and RL circuits, their action as low pass and high pass filters. Passive differentiating and integrating circuits. Series resonance and parallel resonance circuits, Q – Factor.

##### **UNIT-IV: (12hrs)DIODES BJT, FET and UJT:**

**DIODES:**Construction, working of PN, Zenor Diodes

**BJT** : Construction, working, and characteristics of CE Configurations.

**FET:** Construction, working and characteristics of JFET. Advantages of FET

**UJT:** Construction, working and characteristics of UJT. Relaxation Oscillator.

##### **UNIT-V: (12hrs)POWER SUPPLIES & PHOTO ELECTRIC DEVICES**

**Rectifiers** : Half wave, full wave rectifier, Bridge rectifier -Efficiency-ripple factor- **Filters** : L- section &  $\pi$ -section filters.

**I.C. regulators** :Three Terminal Voltage Regulators (78XX & 79XX).

**Photo Electric Devices:** Light Emitting Diode and Photodiode.

##### **TEXT BOOKS:**

1. Introductory circuit Analysis(UBSPublications) - Robert L.Boylestad.
2. Electronic Devices andCircuitTheory - Robert L. Boylestad&Louisashelsky.
3. Circuit Analysis by P.Gnanasivam- PearsonEducation
4. Electronic Devices and Circuit Theory—RobertBoylestad& LouisNashelsky.
5. Electronic Devices and Circuits I – T.L.Floyd- PHI FifthEdition

##### **REFERENCE BOOKS:**

1. Engineering Circuit Analysis By: Hayt&Kemmerly -MG.
2. Networks and Systems – D.RoyChowdary.

