

Electronics Devices & Linear Circuits [EDLC]

S.E. Sem. III [CMPN]

EVALUATION SYSTEM

	Time	Marks
Theory Exam	3 Hrs.	100
Practical & Oral Exam	–	25
Oral Exam	–	–
Term Work	–	25

SYLLABUS

1. Bipolar Junction Transistor

BJT modelling, the hybrid equivalent model, Graphical determination of the H parameters. Negative feedback

2. Field Effect transistor

Construction of JFETs. Transfer characteristics. FET small signal Model, JFET configurations (Fixed bias, self bias, voltage divider, source follower and common gate). Common source amplifier.

3. Operational Amplifier

Introduction, block diagram representation. Analysis of equivalent circuit, the ideal op-amp, open loop op-amp configuration.

4. Practical op-amp

Input offset voltage, input bias current, Input offset current, Total output offset voltage, Thermal drift, effect of variation in power supply voltage on offset voltage, Common mode configuration and common mode rejection ratio.

5. General linear application, Comparators and Converters

AC – DC amplifier, Summing amplifier, Instrumentation amplifier, the integrator, the differentiator, zero crossing detector, Schmitt trigger, Analog to digital and Digital to analog converter.

6. Timer and voltage regulator

The IC 555 timer, monostable and astable multivibrator, PLL, voltage regulator (fixed, adjustable, switching regulator).

References :

1. Electronics Devices and Circuits (*Robert L. Boylestad, Louis Nashelsky*) – PHI Publication.
2. Electronics Devices and circuits (*S. Salivahanan, N. Sureshkumar, A Vallavaraj*) – TATA McGraw Hill Publication.
3. Circuits, Devices and Systems (*Ralph J. Smith, Richard C Dorf*) – Wiley India Pvt. Ltd.
4. Electronics Laboratory Prime – a Design Approach (*S. Poorna Chandra*) – S. Chand Publication.
5. Design with op–amp and analog integrated circuit' (*Sergio Franco*), Tata McGraw Hill series.
6. Op–amp and linear integrated circuits (*Ramakant A. Gayakwad*) – PHI Publication.
7. Semiconductor Data Manual – BPB Publications.
8. Data Book volume I and II, Elektor India.
9. TTL/CMOS Data book, Semiconductor – Texas Instruments.

