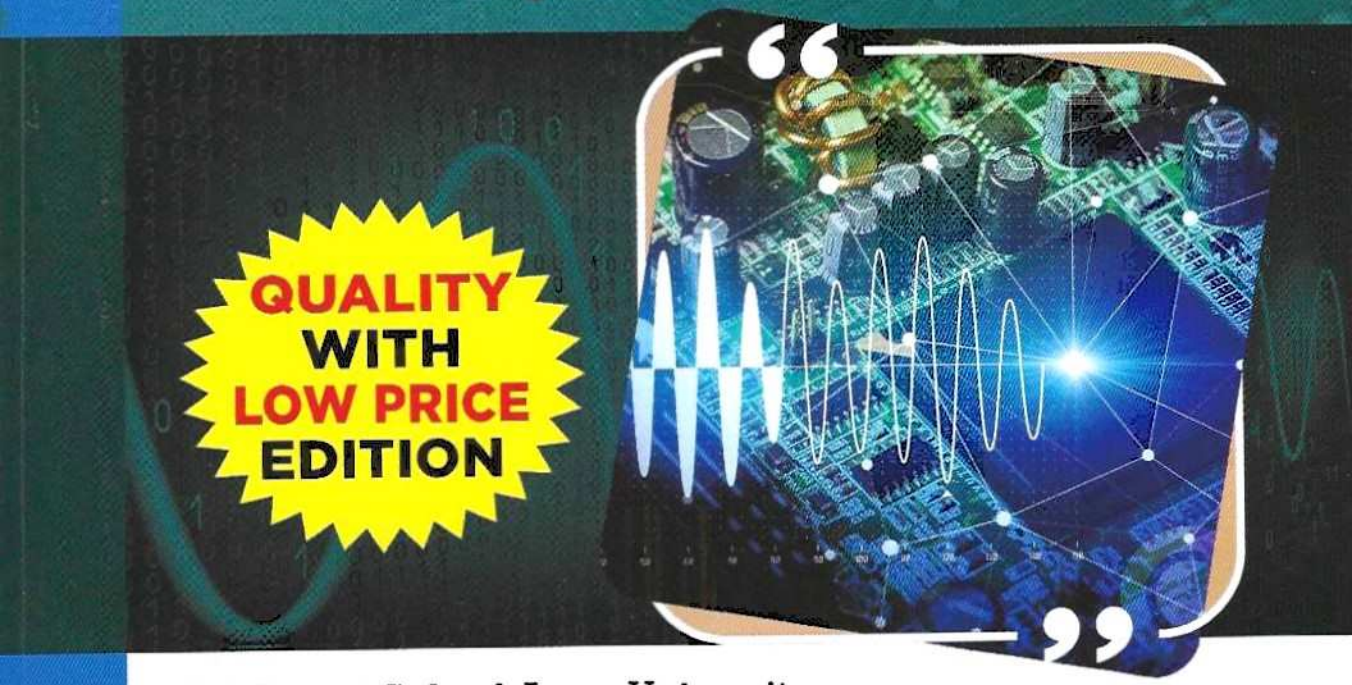
ANALOG IC DESIGN

CEC 334 (Professional Elective - I)
Vertical - I, Semi Conductor Chip and Design

For B.E. V/VI Semester ECE Branch

As per the Latest Syllabus of Anna University, Chennai
(Regulations - 2021)



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With Latest Solved Anna University
Question Paper Nov / Dec 2023

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SYLLABUS

ANNA UNIVERSITY, CHENNAI

For B.E., Electronics and Communication Engineering Branch

CEC 334	ANALOG IC DESIGN	L T P C
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UNIT I: Single Stage Amplifiers 6

Basic MOS physics and equivalent circuits and models, CS, CG and Source Follower, differential amplifier with active load, Cascode and Folded Cascode configurations with active load, design of Differential and Cascode Amplifiers - to meet specified SR, noise, gain, BW, ICMR and power dissipation, voltage swing, high gain amplifier structures.

UNIT II: High Frequency and Noise Characteristics of Amplifiers 6

Miller effect, association of poles with nodes, frequency response of CS, CG and Source Follower, Cascode and Differential Amplifier stages, statistical characteristics of noise, noise in Single Stage amplifiers, noise in Differential Amplifiers.

UNIT III: Feedback and Single Stage Operational Amplifiers 6

Properties and types of negative feedback circuits, effect of loading in feedback networks, operational amplifier performance parameters, single stage Op Amps, two-stage Op Amps, input range limitations, gain boosting, slew rate, power supply rejection, noise in Op Amps.

UNIT IV: Stability, Frequency Compensation 6

Multipole Systems, Phase Margin, Frequency Compensation, Compensation of Two Stage Op Amps, Slewing in Two Stage Op Amps, Other Compensation Techniques.

UNIT V: Logic Circuit Testing 6

Faults in Logic Circuits - Basic Concepts of Fault Detection - Design for Testability - Ad Hoc Techniques, Level - Sensitive Scan Design, Partial Scan, Built-in Self-Test.

30 PERIODS

CONTENTS
UNIT I

UNIT II

HIGH FREQUENCY AND NOISE CHARACTERISTICS OF AMPLIFIERS 2.1 - 2.56

UNIT III

FEEDBACK AND SINGLE STAGE OPERATIONAL AMPLIFIERS 3.1 - 3.43

UNIT IV

UNIT V