

NPTEL Video Lecture Topic List - Created by LinuXpert Systems, Chennai

NPTEL Video Course - Electrical Engineering - NOC:Microelectronics: Devices to Circuits

Subject Co-ordinator - Prof. Sudeb Dasgupta

Co-ordinating Institute - IIT - Roorkee

Sub-Titles - Available / Unavailable | MP3 Audio Lectures - Available / Unavailable

Lecture 1 - Bipolar Junction Transistor
Lecture 2 - Bipolar Junction Transistor
Lecture 3 - Bipolar Junction Transistor
Lecture 4 - BJT Operation in active mode Circuit symbol and conventions - I
Lecture 5 - BJT Operation in active mode Circuit symbol and conventions - II
Lecture 6 - BJT as an amplifier small circuit model - I
Lecture 7 - BJT as an amplifier small circuit model - II
Lecture 8 - BJT Small Signal Circuit Model - I
Lecture 9 - BJT Small Signal Circuit Model - II
Lecture 10 - BJT as a switch and Ebers Moll Model
Lecture 11 - Simple BJT Inverter and second order effects
Lecture 12 - BJT Second order effects - I
Lecture 13 - BJT Second order effects - II
Lecture 14 - MOS Transistor basics - I
Lecture 15 - MOS Transistor basics - II
Lecture 16 - MOS Transistor basics - III
Lecture 17 - MOS Parasitic and SPICE Model
Lecture 18 - CMOS Inverter Basics - I
Lecture 19 - CMOS Inverter Basics - II
Lecture 20 - CMOS Inverter Basics - III
Lecture 21 - Power Analysis - I
Lecture 22 - Logical Efforts - I
Lecture 23 - Fabrication-Process - I
Lecture 24 - Fabrication-Process - II
Lecture 25 - Biasing of Amplifier and its behaviour as an Analog switch - I
Lecture 26 - Biasing of Amplifier and its behaviour as an Analog switch - II
Lecture 27 - Biasing of Amplifier and its behaviour as an Analog switch - III
Lecture 28 - CMOS CS/CG/CD Amplifier Configuration
Lecture 29 - CMOS CG/CD Amplifier Configuration

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- Lecture 30 - Internal CAP Models and high frequency Modelling - I
- Lecture 31 - Internal CAP Models and high frequency Modelling - II
- Lecture 32 - JFET, Structure and Operation
- Lecture 33 - Multistage and Differential Amplifier - I
- Lecture 34 - Multistage and Differential Amplifier - II
- Lecture 35 - MOS Differential Amplifier - I
- Lecture 36 - MOS Differential Amplifier - II
- Lecture 37 - Small signal operation and Differential Amplifiers - I
- Lecture 38 - Small signal operation and Differential Amplifiers - II
- Lecture 39 - Multistage Amplifier with SPICE Simulation
- Lecture 40 - S-Domain Analysis, Transfer Function, Poles and Zeros - I
- Lecture 41 - S-Domain Analysis, Transfer Function, Poles and Zeros - II
- Lecture 42 - High Frequency response of CS and CE Amplifier
- Lecture 43 - High Frequency response of CC and SF Configuration
- Lecture 44 - Frequency response of Differential Amplifier
- Lecture 45 - General Feedback Structure and properties of negative Feedback
- Lecture 46 - Basic Feedback Topologies
- Lecture 47 - Design of feedback amplifier for all configuration
- Lecture 48 - Stability and amplifier poles
- Lecture 49 - Bode plots and Frequency Plot
- Lecture 50 - Ideal Operational Amplifier and its terminal
- Lecture 51 - Op-amp as a Integrator and Differentiator
- Lecture 52 - Large Signal Operation of Op-amp and second order effects
- Lecture 53 - Combinational logic design - I
- Lecture 54 - Combinational logic design - II
- Lecture 55 - Combinational logic design - III
- Lecture 56 - Combinational logic design - IV
- Lecture 57 - Sequential logic design - I
- Lecture 58 - Clocking strategies For Sequential design - I
- Lecture 59 - Clocking strategies For Sequential design - II
- Lecture 60 - Memory Design