NPTEL Video Course - Electrical Engineering - NOC:Integrated Circuits, MOSFETs, Op-Amps and their Application

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Co-ordinating Institute - IISc - Bangalore

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

Lecture 1 - Introduction to Integrated Circuits (IC) Technology
Lecture 2 - Introduction to fabrication of IC
Lecture 3 - Introduction to IC fabrication
Lecture 4 - Introduction to IC fabrication (Continued...)
Lecture 5 - Introduction to the fabrication of sensors
Lecture 6 - Introduction to fabrication technology
Lecture 7 - Introduction to fabrication technology (Continued...)
Lecture 8 - Introduction to fabrication technology (Continued...)
Lecture 9 - Introduction to fabrication technology (Continued...)
Lecture 10 - Introduction to fabrication technology (Continued...)
Lecture 11 - Process flow for Fabrication of MOSFETs
Lecture 12 - Operation of Enhancement type MOSFET
Lecture 13 - Operation of Depletion type MOSFET
Lecture 14 - MOSFETs Characteristics and Applications (Current Mirrors)
Lecture 15 - Introduction to Operational Amplifiers
Lecture 16 - Operational Amplifier Characteristics
Lecture 17 - Operational Amplifier Characteristics (Continued...)
Lecture 18 - Characteristics of an op-amp (Continued...)
Lecture 19 - Operational Amplifier Configarations
Lecture 20 - Operational Amplifier Configarations (Continued...)
Lecture 21 - Applications of Operational Amplifier
Lecture 22 - Applications of Operational Amplifier
Lecture 23 - Applications of Operational Amplifier
Lecture 24 - Introduction to Passive and Active Filters and op-amp as Low Pass Filter
Lecture 25 - Operational Amplifier as a High Pass Filter
Lecture 26 - Operational Amplifier as a Band Pass and Band Reject Filter
Lecture 27 - Introduction to Oscillator
Lecture 28 - RC Phase Shift Oscillator using Op-amp
Lecture 29 - Wein Bridge Oscillator using Op-amp

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Lecture 30 - Hartley and Colpitts Oscillator using Op-amp
Lecture 31 - Working of Crystal Oscillators
Lecture 32 - Construction and Operation of UJT Relaxation Oscillators
Lecture 33 - Introduction to Noise and its Types
Lecture 34 - Analysis of Data Sheets of an Op-Amp
Lecture 35 - Analysis of Data Sheets of an Op-Amp (Continued...)
Lecture 36 - Analysis of Data Sheets of an Op-Amp (Continued...)
Lecture 37 - Experiment - Introduction to Laboratory Equipment
Lecture 38 - Experiment - Measurement of Active and Passive elements using Multimeter
Lecture 39 - Experiment - Working with Laboratory Equipment
Lecture 40 - Experiment - Working with Laboratory Equipment
Lecture 41 - Experiment - Op-Amp Characteristics
Lecture 42 - Experiment - Op-Amp Characteristics
Lecture 43 - Experiment - Op-Amp Characteristics
Lecture 44 - Experiment - Op-Amp as Inverting Amplifier
Lecture 45 - Experiment - Op-Amp as Non-Inverting Amplifier
Lecture 46 - Experiment - To study input and output voltage range of an Op-Amp
Lecture 47 - Experiment - Differential amplifier using op-amp
Lecture 48 - Experiment - To study the gain of instrumentation amplifier
Lecture 49 - Experiment - Summing amplifier using op-amp
Lecture 50 - Experiment - To study op-amp based comparator
Lecture 51 - Experiment - To study op-amp based integrator and differentiator
Lecture 52 - Experiment - Study of passive low pass filter
Lecture 53 - Experiment - Op-amp based active low pass filter
Lecture 54 - Experiment - Passive and active high pass filter
Lecture 55 - Experiment - Introduction to experimental set-up of band pass filter
Lecture 56 - Experiment - Passive and active band pass filter
Lecture 57 - Experiment - Introduction to experimental set-up for band reject filter
Lecture 58 - Experiment - Active band reject filter
Lecture 59 - Experiment - Peak detector circuit using Op-Amp
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