Lectures in Electronic Devices

(3rd Year, Course 1)

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محاضرات في الالكترونيات (النبائط الالكترونية)

(المرحلة الثالثة، الكورس الاول)

اعداد

الأستاذ مساعد الدكتور حمد رحمن جبر

قسم الفيزياء

جامعة بابل

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Contents

Chapter 10: The Operational Amplifier

Introduction to operational amplifiers, op-amp input modes and parameters negative feedback, op-amps with negative feedback, effects of negative feedback on op-amp impedances, bias current and offset voltage, compensation, open-loop response.

Chapter 11: Basic Op-Amp Circuits

Comparators, summing amplifiers, integrators, differentiators, instrumentation amplifiers, isolation amplifiers, operational transconductance amplifiers, log and antilog amplifiers, converters and other op-amp circuits.

Chapter 12: Active Filters

Basic filter responses, filter response characteristics, active low-pass filters, active high-pass, filters active, band-pass filters, active band-stop filters, filter response measurements.

Chapter 13: Oscillator

The oscillator, feedback oscillator, positive feedback, conditions of oscillation, the Wien-Bridge oscillator, relaxation oscillators, noise, thermal noise, shot noise, flicker noise, burst noise, avalanche noise

Chapter 14: Voltage Regulators:

Voltage regulation, basic linear series regulator, basic linear shunt regulators, basic switching regulator, integrated circuit voltage regulators integrated circuit voltage regulator.

Textbook:

1- Thomas L. Floyd, Electronic Devices: Electron Flow Version, 9th edition Pearson Education Inc., Upper Saddle River, New Jersey, 2012.

References:

1- R. Boylestad., and L. Nashelsky, Electronic Devices and Circuit Theory. 10th edition, Pearson Education International, 2008.
2- Horowitz and Hill, The Art of Electronics, 2nd edition, Cambridge University Press, 1989.
3- A. Malvino, and D. J. Bates, Electronic principle, McGraw Hill, 7th edition, 2005.