

**Anna University – Regulation 2013**

Part – B Important Questions [www.exammmain.com](http://www.exammmain.com) – 3rd Semester BE/BTECH

**EE6303 Linear Integrated Circuits and Applications**

**UNIT- I**

1. Describe the epitaxial growth process and photolithography process with neat diagram.
2. Give the various ways for making integrated resistors.
3. Explain the processes used in silicon planar technology with neat diagram.
4. With neat sketches explain the fabrication of diodes.
5. Explain the different isolation techniques.
6. Explain the various process involved in fabricating monolithic IC which integrates diode, capacitors and resistors.

**UNIT II**

1. Explain in detail about dc characteristics of an op-amp.
2. Explain the applications of an op-amp as i) integrator ii) differentiator.
3. With neat sketches explain in detail about V/I and I/V converters.
4. Explain the functions of all the basic building blocks of op-amps.
5. Explain in detail about the frequency compensation applied to operational amplifiers.
6. i) Define CMRR. Draw the circuit of op-amp differential amplifiers and give the expression of CMRR.  
ii) Define Slew rate. Explain the causes of slew rate and derive an explanation of slew rate for op-amp voltage follower.
7. Obtain the frequency response of an open-loop op-amp
8. Explain the operation of a basic differential amplifier?
9. Derive the transfer characteristics of differential amplifier or sketch the transfer characteristics of dual input differential amplifier showing the linear and limiting regions. Comment on the same.

**UNIT III**

1. Discuss the need for an instrumentation amplifier? Give a detailed analysis for the same. .
2. Detail the logarithmic and anti logarithmic amplifier?
3. What is integrating type converter? Explain the operation of dual slope ADC: (16)
4. Explain the principle of operation of successive Approximation ADC and R-2R ladder DAC. (16)
5. Explain the operation of sample and hold circuit.
6. Explain the various types of digital to analog converters:

**UNIT-IV**

1. What is 555 timers? What are the features of 555timers? Explain the functional block diagram of monostable mode in detail?
2. Explain the Astable mode of operation using 555 timer. .
3. Discuss in detail the operation of PLL. Write its applications.
4. Discuss in detail the operation of VCO.

**UNIT-V**

1. Design an adjustable voltage regulator (5 to 15 V) with short circuit current limit of 15MA using 723 regulators.
2. With neat diagram explain the SMPS.
3. In detail discuss the 723 IC general purpose voltage regulator.
4. Explain the operation of switching regulators. Give its advantages.
5. Explain the functional diagram of LM 380 power amplifier.
6. Discuss in detail the operation of ICL 8038 function generator IC.
7. Discuss in detail the operation of variable voltage regulators.

\*\*\*\*\* All The Best For Examination \*\*\*\*\*