

2008-COCHIN UNIVERSITY
B.TECH DEGREE EXAMINATION JUNE-2008
LINER INTEGRATED CIRCUITS
(ELECTRONICS AND COMMUNICATION ENGINEERING)

TIME-3HOUR
MARKS-100

ANSWER ALL QUESTIONS

MARKS [10*10=100]

- 1a. Explain Dominant Pole Compensation and Pole Zero Compensation
- b. Draw a differential amplifier with active load. Why is this type of load preferred?
- 2a. Draw and explain the working of a current mirror circuit with necessary equations. How does it work as a constant current source?
- b. Compare and contrast an ideal op-amp with 741 op-amp
- 3a. Derive expression for closed loop gain, input impedance and output impedance of an inverting amplifier with feedback
- b. Briefly explain virtual ground concept
- 4a. Draw the circuit of an instrumentation amplifier. Explain its features and applications
- b. Draw and explain the working of a current to voltage converter with necessary equations. What is its application?
- 5a. With neat circuit diagrams and waveforms explain the working of Monostable Multivibrator using op-Amp
- b. Draw the circuit of Weinbridge oscillator using op-amp. Derive expression for its frequency of oscillations.
- 6a. Why is regenerative feedback applied often in comparators? Explain considering a circuit with and without regenerative feedback
- b. Draw and explain the block diagram of 723 voltage regulator.
- 7a. Draw the circuit of Twin-T Notch filter. Derive expression for its Transfer function. What is its Transfer function
- b. Explain the advantages of active filters
- 8a. Draw the circuit of first order all pass filter. Derive expression for its Transfer function. What is its application
- b. Explain the working of Switched Capacitive Filter. Explain its advantages
- 9a. With neat circuit diagrams and waveforms explain:
 - i) the 555 as Monostable Multivibrator
 - ii) the 555 as Astable Multivibrator
- b. Define lock range and capture range
10. Explain with diagrams

i) DAC with binary weighted resistors

ii) DAC with R and 2R resistors

iii) Successive-approximation ADC

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