D 51599

Name.....

Reg. No.....

FIFTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION, DECEMBER 2008

EC 04 503—LINEAR INTEGRATED CIRCUITS

(2004 admissions)

Time : Three Hours Maximum : 100 Marks

1. (a) Compare the characteristics of ideal and 741 Op Amp.
   (b) What is frequency compensation ? State the need with relevant diagrams.
   (c) Draw the schematic circuit of Op Amp antilog amplifier and explain.
   (d) What are I-V converters ? Explain with *one* application.
   (e) Compare Butterworth, Chebyshev, Sallenkey filters.
   (f) Give the realization of resistor using switched capacitor.
   (g) Define Monotonicity, Resolution, Gain Error and offset error in D/A coverters.
   (h) Draw the block schematic for any one application of PLL and explain.

   (8 × 5 = 40 marks)

2. (a) Explain lossy and lossless Integrator using Op Amp with relevant diagrams. (15 marks)

   Or

   (b) Draw the circuit of instrumentation. Amplifier and derive expression for gain. List its advantages, disadvantages and applications. (15 marks)

3. (a) Explain the circuit schematic of OpAmp based Astable multivibrator and derive expression for f. (15 marks)

   Or

   (b) Write notes on :
   (i) Twin-Tee notch filter. (7 marks)
   (ii) Switched capacitor filters. (8 marks)

4. Discuss the following with neat circuit :
   (a) Successive Approximation type ADC. (15 marks)

   Or

   (b) Design of Adjustable voltage regulators. (15 marks)

5. (a) Explain the working of PLL with block schematic. Also discuss *one* application. (15 marks)

   Or

   (b) Write short notes on :
   (i) Frequency synthesizer. (5 marks)
   (ii) Monostable multivibrator using 555 timer. (10 marks)

[4 × 15 = 60 marks]