D 23427-A

(Pages : 2)

Name...........................

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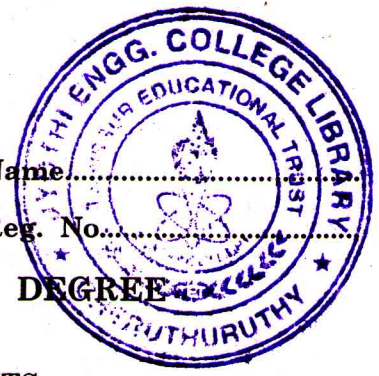
FIFTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION, DECEMBER 2011

EC 04 503—LINEAR INTEGRATED CIRCUITS

(2004 admissions)

Time : Three Hours

Maximum : 100 Marks

Answer **all** *questions.*

1. (a) Derive the gain due to an inverting and a non-inverting operational amplifiers.

   (b) Give one practical application of the following circuits :—

      (i) Instrumentation amplifier.

      (ii) Schmitt trigger.

      (iii) Voltage comparator.

   Also define the parameter slew rate.

   (c) Write notes on switched capacitor filters.

   (d) What are active filters ? Write the salient features of Butterworth and Chebyshev filters.

   (e) What are three terminal voltage regulators ? Define the terms line regulation and load regulation.

   (f) Explain the principle of operation of a weighted resistor DAC.

   (g) Explain the working of a basic PLL using a block diagram.

   (h) Define the following terms :—

      (i) Lock range.

      (ii) Capture range.

      (iii) Monostable multivibrator.

      $(8 \times 5 = 40$ marks)

2. (a) (i) Explain the various frequency compensation techniques adopted in an operational amplifier.

      (11 marks)

      (ii) Explain the working of a summing amplifier.   (4 marks)

   Or

   (b) Explain the working of :

      (i) Wein bridge oscillator.   (9 marks)

      (ii) Antilog amplifier.   (6 marks)

Turn over