C 15236

(Pages : 2) Name.....

Reg. No.....

FOURTH SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION, DECEMBER 2010

AI/BM 04 406 – LINEAR INTEGRATED CIRCUITS AND APPLICATIONS

(2004 Admissions)

Time : Three Hours Maximum : 100 Marks

I. (a) Explain the masking and etching processes of IC fabrication.

(b) Differentiate thin and thick film technologies.

(c) Define and explain CMRR and PSRR.

(d) Draw OP-amp simplified internal circuit and explain it in detail.

(e) Draw OP-amp Instrumentation amplifier and explain its operation.

(f) Draw OP-amp sample and hold circuit. Explain its principle of operation in detail.

(g) Explain the characteristics of OP-amp LPF and HPF.

(h) Give an account on OP-amp all pass filter.

(8 × 5 = 40 marks)

II. (a) (i) Explain the photolithography process in detail.

(ii) Explain the merits and applications of CMOS technology.

(7 + 8 = 15 marks)

Or

(b) Describe the fabrication of a typical IC circuit with an example and sketch.

III. (a) (i) Draw the block diagram of amp and explain it in detail.

(ii) Explain the characteristics of an ideal OP-amp.

(7 + 8 = 15 marks)

Or

(b) (i) Explain the frequency response of OP-amp high frequency circuits.

(ii) Explain in detail about slew rate and its applications.

(7 + 8 = 15 marks)

IV. (a) (i) Explain OP-amp inverting and non-inverting amplifiers with neat sketches. Derive output voltages.

(ii) Give an account on OP-amp average detector.

(7 + 8 = 15 marks)

Or

Turn over

(b) Write a technical notes on OP-amp Analog Multiplier.

V. (a) (i) Explain the types of Oscillator in detail.

(ii) Explain the operation of OP-amp saw tooth wave generator.

(7 + 8 = 15 marks)

Or

(b) (i) Explain the principle of OP-amp second order Butterworth Bandpass filter.

(ii) Explain in detail about OP-amp universal active filter.

(7 + 8 = 15 marks)

[4 × 15 = 60 marks]