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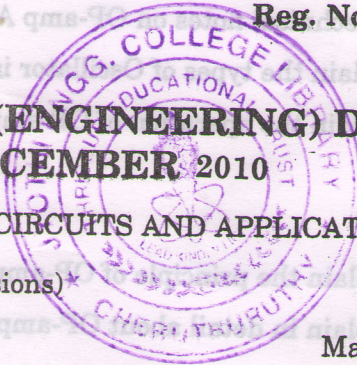
Name.....

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

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(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 x 15 = 60 marks]

(8 x 5 = 40 marks)

(7 + 8 = 15 marks)

(7 + 8 = 15 marks)

(7 + 8 = 15 marks)

(7 + 8 = 15 marks)

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