[06 – 3111]

III/IV B.E. DEGREE EXAMINATION.

First Semester

Electrical and Electronics Engineering

LINEAR ICs AND APPLICATIONS

(Common for EEE, ECE, EIE and Dual Degree
Programme in ECE and EEE)

(Effective from the admitted batch of 2004–2005)

Time : Three hours   Maximum : 70 marks

First question is compulsory.

Answer any FOUR from the remaining.

All questions carry equal marks. $(7 \times 2 = 14)$

1. (a) Define input offset voltage and output offset
        voltage.

    (b) Explain the need for frequency compensation
        in OPAMP.

    (c) Draw the functional block diagram of IC1496
        balanced modulator and mention its features.

    (d) What are the advantages of switched
        capacitor filters?

(e) Draw the circuit of logarithmic amplifier using OPAMP.

(f) Give the applications of IC 565PLL.

(g) Explain briefly about all pass filter.

2. (a) Define and explain various op-amp parameters.

(b) Explain in detail about measurement of op-amp parameters

3. (a) With a neat circuit diagram and necessary derivations explain op-amp as instrumentation amplifier.

(b) Draw the circuit diagram of op-amp as integrator and explain its operation with necessary analysis.

4. (a) With a neat circuit diagram and relevant waveforms, explain the operation of monostable multivibrator using op-amp.

(b) Design a square wave generator with free running frequency of 1 KHz using op-amp with supply voltage +/- 15V.

5. (a) Draw the 555 timer circuit in astable mode to get Output waveform with 50% duty cycle.

(b) Draw and explain the internal schematic of 556 IC.

6. (a) Explain pin configuration of 565 IC.

   (b) Explain one application of PLL as frequency translator.

7. (a) Explain the first order band pass filter and band reject filter.

   (b) Draw the circuit of switched capacitor filter. Mention its important feature and give its practical limitations

8. Explain in detail about.

   (a) Quadrature Oscillator

   (b) Sample and Hold circuits.