

SATHYABAMA UNIVERSITY

(Established under section 3 of UGC Act, 1956)

Course & Branch: B.E – EEE (Part Time - EEE/ECE)

Title of the paper: Analog Integrated Circuits

Semester: IV

Sub.Code: 6C0080-6CPT0027(2006-2007-2008)

Date: 06-05-2009

Max.Marks: 80

Time: 3 Hours

Session: FN

PART – A

(10 x 2 = 20)

Answer All the Questions

1. Define input offset voltage.
2. List the ideal characteristics of an op-amp.
3. Why is the practical integrator circuit called lossy integrator?
4. What are the advantages of active filters?
5. A PLL frequency translator has a center frequency f and input frequency f_1 what will be the out frequency?
6. List any two applications of multiplier.
7. Define Linearity of a DAC.
8. Why a Flash type ADC of more than 12 bits Seldom exists?
9. What is the Categorization of series regulator, linear or switching?
10. Draw the circuit of diagram of a Schmitt trigger using a timer IC.

PART – B

(5 x 12 = 60)

Answer All the Questions

11. Define common mode rejection Ratio. Why is R_E replaced by a constant current bias circuit in a differential amplifier? Prove it by Derivation.

(or)

12. Define skew rate. Derive the slew rate equation for an op-amp and also write a note on methods of improving the slew rate.
13. Explain the working of practical differential amplifier. Derive frequency response of practical differentiator. Explain the applications and design procedure of practical differentiator.
(or)
14. Writes notes on
 - (a) Astable multi vibrator using op-amp
 - (b) RC phase shift oscillator using op-amp
 - (c) Wein bridge oscillator using op-amp
15. (a) Explain the operation and features of voltage controlled oscillator.
(b) Explain the operation of frequency doubler.
(or)
16. Draw the block diagram of IC 565 PLL and explain the application of PLL as FSK demodulator.
17. Explain the binary weighted resistor technique of D/A conversion and list its drawbacks.
(or)
18. (a) Explain the operation of an ADC using dual slope technique.
(b) Draw the circuit of an Op-amp based sample and hold circuit and explain its operation.
19. (a) Draw a block schematic of the IC timer and explain the function of the individual blocks.
(b) Discuss the operation of a timer IC in the monostable mode.
(or)
20. (a) Explain with a neat block diagram of the internal blocks, the working of an IC voltage regulator
(b) Discuss briefly any one technique of current limiting employed in IC voltage regulators.

