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SATHYABAMA UNIVERSITY

(Established under section 3 of UGC Act,1956)

Course & Branch :B.E - EEE/P-ECE/P-EEE
Title of the Paper :Analog Integrated Circuits Max. Marks :80
Sub. Code :6C0080-6CPT0027 Time : 3 Hours
Date :05/11/2009 Session :AN

PART - A (10 x 2 = 20)

Answer ALL the Questions

1. What is meant by Monolithic IC? Write its applications?
2. Define Slew rate?
3. How Op-amp used as inverter summing amplifier?
4. How Schmitt Trigger is considered as a regenerative comparator?
5. What is the significance of free running frequency in a voltage controlled Oscillator?
6. List the important characteristics of PLL?
7. State the function of capacitor in sample and hold circuit.
8. Where the voltage to time conversion is frequently used?
9. Define thermal shut-down in IC.
10. Which are referred as low noise op-amps?

PART – B (5 x 12 = 60)

Answer All the Questions

11. (a) Analyze the amplifier function with active loads with appropriate circuits. (8)
    (b) How biasing is temperature dependent in IC function? (4)

(or)

12. What are the methods used to improve the slew rate? Explain.

13. (a) What are the limitations of an differenciator? Explain how it will be eliminated? (8)
    (b) What is the cause of output offset voltage in op-amp? (4)

(or)

14. With circuits and waveform, explain the operation of op-amp as triangle wave Generaor and non-inverting comparator.

15. Describe the principle of operation of phase detector for IC PLL (Phase locked – loop) with timing diagram.

(or)

16. (a) Draw the FSL (frequency shift keying) demodulator circuit and write its applications. (8)
    (b) What is the function of a frequency synthesizer? (4)

17. (a) Explain the high speed sample and hold circuit with input and output Waveform. (9)
    (b) List the names of DAC technique available. (3)

(or)

18. Draw the functional block diagram and explain the dual slope method of A/D conversion with waveform. Write the observations made from voltage equation.

19. Explain the operation stages of Timer with the suitable block diagram. Write its applications.

(or)

20. (a) What is meant by an opto-coupler? Explain the function of an opto-coupler Circuit. (8)
    (b) Write a short note on noise analysis using op-amp. (4)