ANNA UNIVERSITY COIMBATORE

B.E. / B.TECH. DEGREE EXAMINATIONS : DECEMBER 2009

REGULATIONS : 2007

FIFTH SEMESTER : EEE

070280040 - LINEAR INTEGRATED CIRCUITS

TIME : 3 Hours Max.Marks : 100

PART – A

(20 x 2 = 40 MARKS)

ANSWER ALL QUESTIONS

1. What are all the IC classification?
2. Define etching and diffusion?
3. State any two advantages of MOS technology over bipolar technology in the fabrication of IC.
4. Explain the process of Oxidation.
5. Define CMRR.
6. List out the ideal characteristic of OPAMP.
7. Define input offset voltage.
8. Write some linear and non linear applications of opamp.
9. Draw a voltage follower using opamp.
10. State some important features of instrumentation amplifier
11. Draw any one of the clipper circuit using opamp with input and output waveforms.
12. Define resolution of a DAC.
13. What are the applications of timer IC 555.
14. What is VCO?
15. Define the capture range of PLL
16. List the basic blocks of IC 555 Timer
17. What is a linear voltage regulator?
18. How the current boosting is achieved in a723 IC?



19. Name a filter IC and a regulator IC.
20. What are the advantages of switching regulators?

PART – B

(5 x 12 = 60 MARKS)

ANSWER ANY FIVE QUESTIONS

21. a. Write note on iron implantation 6

    b. Explain how a monolithic capacitor can be fabricated. 6

22. a. Explain in detail about monolithic IC technology 8

    b. How transistors are fabricated in ICs? 4

23. a. Derive the gain of inverting and non inverting amplifier. 6

    b. Explain the AC characteristics of opamp. 6

24. a. Explain IC 741 operational amplifier. 8

    b. Derive the condition for DC characteristics of an operational amplifier. 4

25. a. Draw the circuit diagram of opamp differentiator, integrator and derive the output expression. 6

    b. Explain the working of the instrumentation amplifier. 6

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| 26 | a. | Draw the circuit of a first order and second order active low pass filter and derive its transfer function. | 6 |
| | b. | Explain the working of opamp Schmitt trigger with neat circuit diagram and output waveform. | 6 |
| 27. | a. | Draw the astable multivibrator using 555 timer and derive its frequency of oscillation | 6 |
| | b. | With neat diagram explain any one of the application of PLL. | 6 |
| 28. | a. | Explain the IC voltage regulator LM-317. | 6 |
| | b. | Draw the block diagram of the function generator IC and explain its operation. | 6 |

*******THE END*******