

ANNA UNIVERSITY COIMBATORE
B.E. / B.TECH. DEGREE EXAMINATIONS : MAY / JUNE 2010

REGULATIONS : 2007 & 2008

FOURTH SEMESTER

070290029 - 080310015 - LINEAR INTEGRATED CIRCUITS

(COMMON TO 2007 REGULATION ECE /

2007 & 2008 REGULATION MEDICAL ELECTRONICS)

TIME : 3 Hours

Max.Marks : 100

PART – A

(20 x 2 = 40 MARKS)

ANSWER ALL QUESTIONS

1. Define slew rate
2. What is active load? Where it is used and Why?
3. Why open loop OP-AMP configurations are not used in linear applications?
4. Define virtual ground property of OP-AMP
5. Draw the circuit of an OP-AMP comparator
6. What is voltage follower?
7. Define Logarithmic and antilogarithmic amplifier
8. Differentiate Schmitt trigger and Comparator
9. What is analog multiplier?
10. Differentiate digital and analog PLLs?
11. Write the expression for FSK modulation
12. Define free running mode
13. Name the essential parts of a DAC
14. Define Accuracy
15. What are the advantages and disadvantages of R-2R ladder DAC
16. Find the resolution of a 12 bit DAC
17. List out the applications of 555 timer in astable mode
18. What is video amplifier and Isolation amplifier

19. What are multivibrators. Mention its applications.
20. Define dropout voltage of a fixed voltage regulator?

PART – B

(5 x 12 = 60 MARKS)

ANSWER ANY FIVE QUESTIONS

21. a). Draw and explain briefly the equivalent circuit of OP-AMP. (8)
- b). Explain about DC characteristics of OP-AMP. (4)
22. a). Draw and explain about Voltage to current converter. (6)
- b). Design the integrator circuit by using OP-AMP and explain the operation. (6)
23. With neat circuit diagram explain about Instrumentation amplifier.
24. Describe the application of PLL as AM detection and FM detection.
25. a). Explain about the Gilbert multiplier cell. (6)
- b). Derive the expression for voltage to frequency conversion factor of VCO. (6)
26. a). What is the conversion time of 10 bit-Successive approximation A/D converter if the input clock is 5MHz (4)
- b). Briefly explain about Dual slope A/D converter (8)

27. Write Short notes on

a). Tuned amplifiers (6)

b). Power amplifiers (6)

28. Explain in detail the function of 555 timer in monostable and derive the expression for frequency of oscillation.

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