

Reg. No. _____

Karunya University

(Declared as Deemed to be University under Sec.3 of the UGC Act, 1956)
(Anna University batch)

End Semester Examination – November / December 2008

Subject Title: LINEAR INTEGRATED CIRCUITS AND APPLICATIONS Time : 3 hours
Subject Code: EC211 Maximum Marks: 60

Answer ALL questions

PART – A (10 x 1 = 10 MARKS)

1. What are positive photo resist?
2. What is Ion implantation?
3. Define slew rate?
4. If the op-amp is in open loop mode, does the op-amp operates linearly in this mode.
5. Zero crossing detector is a comparator with $V_{ref} =$ _____.
6. What is the function of series transistor in Ic 723.
7. What is the roll-off factor of a 1st order filter?
8. Define duty cycle.
9. The _____ controls the lock range and capture range of the filter.
10. Which is the fastest ADC?

PART – B (5 x 2 = 10 MARKS)

11. Name the different types of Ic packages.
12. Does increasing the compensating capacitor increase order case unity – gain bandwidth?
13. For a RC phase shift oscillator determine the values of R and C if $f_0 = 500$ Hz.
14. For a mono-stable multi-vibrator using 555 determine the value of C of R = 200 k Ω and time delay is 150msec.
15. How many levels are possible in a α bit DAC? What is its resolution if the output range is 0 to 3V.

PART – C (5 x 8 = 40 MARKS)

16. Describe the steps involved in fabricating a transistor.
(OR)
17. Explain about integrated circuit components and packaging.
18. Explain the characteristics of op – amp.
(OR)
19. Discuss the following application of op-amp (a) Log amplifier
b. Integrator c. Summer
20. Discuss the working of IC 723 regulator.
(OR)
21. Explain the working astable multi vibrator and triangular waveform generator using op amp.

[P.T.O]

22. a. Design a band pass filter so that $f_0 = 2$ kHz, $Q = 20$, $A_0 = 10$ and $C = 1$ μ F. (4)
b. Explain any one application of times 555. (4)
(OR)
23. Explain the working of 555 times.
24. a. Discuss the operation of successive approximation ADC. (6)
b. Draw the circuit for FM detection using PLL. (2)
(OR)
25. a. Describe the working of PLL. (5)
b. Compare weighted resistor DAC and R-2R DAC. (3)