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: SOLID STATE CIRCUITS - II **Time : 3 hours**
Subject Code: EC206 **Maximum Marks: 60**

Answer ALL questions

PART – A (10 x 1 = 10 MARKS)

1. State clamping theorem.
2. Draw the output response of an integrator to a step input.
3. Differentiate between Fixed and self bias circuit.
4. What is LTP in Schmitt trigger?
5. Write down the expression for frequency of oscillation in an astable circuit.
6. What is the function of VCO?
7. What is the purpose of time base generators?
8. Draw the waveform for a simple sweep circuit.
9. Where do we apply the concept of sampling gates in the field of communication?
10. What condition has to be satisfied so that the loop gain should exceed unity in monostable blocking oscillator?

PART – B (5 x 2 = 10 MARKS)

11. What are the disadvantages of a differentiator over integrator?
12. What is the need for commutating capacitors?
13. To obtain short recovery time in Bottstrap circuits what provision is made in the circuit?
14. Draw the collector and base currents in the blocking oscillator if the transformer core saturates.
15. Draw a linear gate circuit with provision to cancel the pedestal.

PART – C (5 x 8 = 40 MARKS)

16. Discuss the response of High pass filter to a step input, ramp input and exponential input.

(OR)

17. a. Design a clipper circuit that will clip voltages above 2V for input sinusoidal signal whose peap – to – peak voltage in 8V. (4)
    b. Write about attenuators. (4)

18. a. Design the upper and lower threshold voltages for a Schmitt trigger whose specifications are $R_2 = 100\ \Omega$, $R_1 = 50\ k\Omega$, $V_{ref} = 0V$ and $V_i = 1\ V_{pp}$ and saturation voltage = $\pm$ 14V. (4)
    b. Explain how a sine wave to square wave convertor works. (4)

(OR)

19. a. Discuss the operation of self bias bistable circuits. (4)
    b. Explain any one application of comparator. (4)

20. Describe the working of emitter coupled astable circuits.

(OR)

21. With the help of VCO design a monostable circuit and also draw the output waveform.

22. Describe the operation of Bootstrap time base generator.

(OR)

23. Discuss the working of transistor television sweep circuit with suitable figures.

24. Explain the operation of blocking oscillators. Draw the output response waveform.

(OR)

25. Write a note on triggering circuits and sampling gates.