Reg. No. _____

Karunya University

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

End Semester Examination – May / June 2009

Subject Title: SOLID STATE CIRCUITS - II **Time : 3 hours**
Subject Code: EC206 **Maximum Marks: 100**

Answer ALL questions
PART – A (10 x 1 = 10 MARKS)

1. List any two non-sinusoidal waveforms used in pulse circuits.
2. What is the other name for high pass RC circuit?
3. Which type of bias is used in bistable multivibrator circuit.
4. How is hysterisis in a Schmitt trigger eliminated?
5. Comment on the two states of an astable multivibrator.
6. Give an application of the monostable multivibrator.
7. What is flyback time?
8. Why is the retrace blanked in CRT circuits?
9. What is a Multiar?
10. What is the state of a sampling gate during transmission phase?

PART – B (5 x 3 = 15 MARKS)

11. A half wave rectifier is a special type of clipper justify.
12. What are the two regions of operation of transistors in a bistable circuit? Also, comment on the states of the circuit.
13. Draw the schematic circuit of a collector coupled, transistor based monostable multivibrator. (Use NPN devices)
14. List some of the methods used for improving linearity in a current time base generator.
15. Explain how triggering of a blocking oscillator is achieved.

PART – C (5 x 15 = 75 MARKS)

16. Analyse the response for step, pulse and square wave inputs of a low pass RC circuit.

(OR)

17. a. Draw the piece-wise linear diode circuit. (5)
    b. Describe the working of series and shunt clippers. (10)

18. a. Describe the working of a fixed – bias transistor bistable multivibrator with a neat circuit diagram. (10)
    b. Explain how the above circuit could be improved by using commutating capacitors. (5)

(OR)

19. a. Describe the working of the SCHMITT trigger with a typical circuit. (10)
    b. Give an application of SCHMITT trigger with brief explanation. (5)

20. Using neat circuit and waveforms explain the working of a collector coupled monostable multivibrator.

(OR)

21. Describe the working of astable multivibrator that incorporates diodes to improve vertical edges.

[P.T.O]

22. a. Briefly explain different methods used for generating time-base waveforms. (12)
    b. Describe the charging action of a exponential sweep circuit with sample schematics. (3)

(OR)

23. With equivalent circuit, explain the operation of a transistor constant current sweep circuit.

24. Show that the pulse width of a triggered transistor blocking oscillator is proportional to the transistor, h_{fE}.

(OR)

25. Describe the operational of bidirectional gates using transistors.