Karunya University

(Karunya Institute of Technology and Sciences)
(Declared as Deemed to be University under Sec.3 of the UGC Act, 1956)

End Semester Examination – November/December 2010

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.   What is time constant of a circuit?
2.   What is double ended clipping?
3.   What is a quasi stable state?
4.   What is symmetrical triggering?
5.   Mention an application of monostable multivibrator.
6.   What is a V to f converter?
7.   Why are time base generators called sweep circuits?
8.   What is the advantage of Miller integrator over Bootstrap circuit?
9.   What is a unidirectional sampling gate?
10. What do monostable and astable blocking oscillators generate?

PART – B (5 x 3 = 15 MARKS)

11. Draw the circuit and output waveforms of a shunt clipper which clips above a reference level.
12. Define UTP and LTP of a Schmitt trigger circuit. How can they be varied?
13. Explain a method of triggering a monostable multivibrator.
14. Mention three different methods of generating a time base waveforms.
15. List the various applications of a blocking oscillator.

PART – C (5 x 15 = 75 MARKS)

16. a.   Explain the operation of a low pass RC circuit. Describe with necessary equations and
         diagrams its response to a square wave input.   (9)
     b.   Calculate the rise time, time constant and the time to charge fully of a RC circuit with
         R = 50 kΩ and capacitor C = 500pF.   (6)
                                        (OR)
17. a.   Explain with circuit diagram the operation of a positive clamper.   (8)
     b.   Draw a circuit to transmit the part of a sine wave that lies between - 3V to + 6V.   (7)

18. a.   Explain with a circuit diagram, the operation of a Schmitt trigger.   (8)
     b.   Explain how it can be used as a sine to square wave converter.   (7)
                                        (OR)
19. a.   Describe with a circuit diagram the functioning of a fixed bias bistable multivibrator.(10)
     b.   Write a note on the commutating capacitors used.   (5)

20. With the help of a circuit diagram and waveforms, explain the working of an emitter coupled
     monostable multivibrator.
                                        (OR)
21. Explain the working of a collector coupled astable multivibrator. Obtain an expression for
     frequency of oscillation of the circuit.

22. Describe the working of a simple transistor current time base generator.

(OR)

23. Explain the basic principle of a Miller time base generator and explain the working of a transistor Miller time base generator.

24. Describe the working of a bidirectional sampling gate using transistors.

(OR)

25. With the help of a circuit diagram and waveforms, explain the working of a triggered transistor monostable blocking oscillator.