Reg. No. _____

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 – April/May 2011

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. A capacitor passes _____ frequency components and blocks _____ frequency components.
2. Draw the response of a High Pass Circuit to a step input when RC < T.
3. What is a bi-stable multi-vibrator?
4. Define response time of a comparator.
5. In a mono-stable multi-vibrator, one of the states is stable and the other is _____.
6. What is a VCO?
7. Define the sweep speed error.
8. Name the different methods of generating ramp waveforms.
9. Diode gates are used where _____is the prime criterion.
10. Blocking oscillator is a common type of _____oscillator.

PART – B (5 x 3 = 15 MARKS)

11. What is a clipper? Draw the circuit of a series diode clipper.
12. Explain a zero crossing detector.
13. Draw the input-output waveform of a mono-stable multi-vibrator.
14. Draw the circuit diagram and waveform of exponential charging.
15. Draw a two-diode gate circuit

PART – C (5 x 15 = 75 MARKS)

16. Explain in detail how the High Pass and Low Pass circuits perform differentiation and integration respectively with the help of neat circuit diagram and relevant equations.

(OR)

17. Explain in detail the clamping circuits using diodes and transistors.

18. Explain in detail the working of a regenerative comparator (Schmitt trigger). Obtain the expression for the Hysteresis voltage V_H.

(OR)

19. Explain the different triggering mechanisms for bi-stable elements.

20. Explain in detail the working of an emitter coupled monostable multi-vibrator with neat diagrams and waveforms. Obtain the expression for output pulse duration.

(OR)

21. Explain the working of a collector coupled astable multi-vibrator with the help of neat circuit diagram and waveforms. Obtain the expression for period of the output square wave.

22. With the help of neat circuit diagram, explain the operation of a Miller time base generator.

(OR)

23. What is meant by a current sweep? Explain in detail a practical current sweep circuit using transistors.

24. Explain the operation of diode controlled free running blocking oscillator with neat circuit diagram and current-voltage waveforms. Obtain the expression for duty cycle.

(OR)

25. Discuss the working of a unidirectional sampling gate using transistors and diodes.