Reg. No. _____

Karunya University

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

End Semester Examination – November / December 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. A _____filter is one in which at very low frequencies _____acts almost as a short circuit.
2. A waveform which is zero for $t < o$ and which increases linearly with time for $t > o$, $v = \alpha t$, is called _____.
3. _____circuit is one which can exists indefinitely in either of two stable states.
4. Mention the other names of Eccles – Jordan circuit.
5. _____circuit has two Quasi stable states.
6. The resolution time is the sum of the _____and _____.
7. What is meant by transmission error?
8. Give the other names for restoration time.
9. An ideal sampling gate is a transmission circuit in which the output is an _____of an input waveform during selected time interval and is _____otherwise.
10. Sampling gate is also referred to as a _____.

PART – B (5 x 3 = 15 MARKS)

11. When does low pass RC circuit acts like an integrator?
12. What is meant by transition time in Bistable Multivibrators? How can it be reduced?
13. Why monostable multivibrators are called univibrators?
14. List the various methods of generating a time-base waveform.
15. Distinguish between sampling gates and logic gates.

PART – C (5 x 15 = 75 MARKS)

16. a. Neatly sketch the exponential response of high pass RC circuit. (8)
    b. Derive the equation for output voltage and make a comment on it. (7)

(OR)

17. a. Explain how low pass RC circuit operates as an integrator. (9)
    b. With neat diagrams, explain clamping circuits. (6)

18. Explain the working principle of fixed bias transistor binary with neat sketch. Draw its input and output waveforms.

(OR)

19. Calculate the stable state currents and voltages for the following bistable multivibrator circuits, which uses p – n – p germanium transistors. Find the minimum value of h_{FE} which will keep the on transistor in saturation.

[P.T.O]

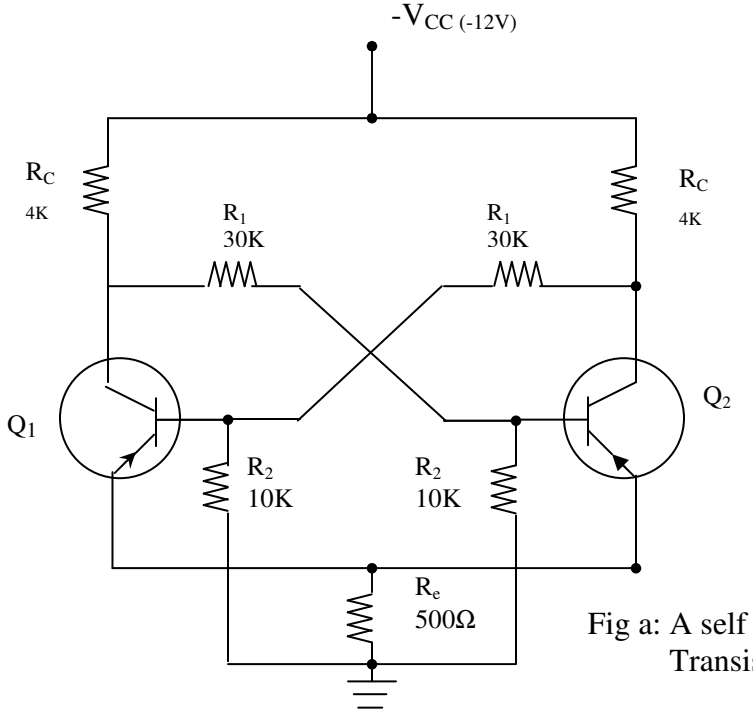

Fig a: A self biased p - n - p Transistor binary

20. What is the purpose of adding a diode to the astable multivibrator circuit on both the sides? Draw the circuit and explain.

(OR)

21. Draw and explain the operation of VCO.

22. Explain with neat sketch, the operation of transistor television sweep circuit. Draw its waveform.

(OR)

23. Describe the operation of exponential sweep circuit.

24. Explain the working of emitter timing transistor blocking oscillator with neat sketches.

(OR)

25. Discuss in detail, the working of diode based unidirectional sampling gate.