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: ELECTRON DEVICES **Time : 3 hours**
Subject Code: EC201 **Maximum Marks: 100**

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

1. What is intrinsic semiconductor?
2. Define Fermi level.
3. Define d.c current gain.
4. Mention the current components of a transistor.
5. What are the advantages of hybrid π model?
6. Give any two characteristics of common base amplifier.
7. Draw the symbol of silicon controlled rectifier.
8. Define latching current.
9. Mention any two application of tunnel diode.
10. What is light emitting diode?

PART – B (5 x 3 = 15 MARKS)

11. State the junction diode equation and the principle of forward biasing characteristic of a diode.
12. State what thermal runaway is?
13. Give the h-parameters for Common Emitter configuration amplifier.
14. What is a power MOSFET?
15. What is DIAC? Draw the symbol of DIAC.

PART – C (5 x 15 = 75 MARKS)

16. Discuss in detail the carrier concentration in an intrinsic semiconductor.

(OR)

17. a. What is Hall Effect? Discuss its applications. (5)
    b. Explain about drift current and diffusion current in semiconductor diodes. (10)

18. Derive the continuity equation in base region.

(OR)

19. Describe the static characteristics of a npn characteristics transistor in common emitter configuration.

20. Explain how a transistor is represented by the small signal model. Derive the hybrid parameters.

(OR)

21. Draw the simplified hybrid model for common base amplifier and derive current gain, voltage gain, input impedance and output impedance.

22. Explain with neat sketch the construction and operation of N channel JFET.

(OR)

23. Explain the working principle of silicon controlled rectifier and also explain its static characteristics.

24. What is a zener diode? Explain the operation of zener diode with neat diagram. Mention the applications.

(OR)

25. Write detailed notes on : a) Tunnel diode b) Varactor diode. (7.5 x 2=15)