NOV/DEC 2008

2008 ANNA UNIVERSITY

B.E/B.TECH DEGREE EXAMINATIONS

III SEMESTER ELECTRONICS AND COMMUNICATION ENGINEERING

ELECTRONIC DEVICE

TIME: 3 HOUR

MARK: 100

Answer All Question

PART A –(10×2=20 MARKS)

1. Define Electrostatic deflection sensitivity of a CRO.

2. Draw the energy hand diagram of N-type semiconductor.

3. Mention the applications of varactor diode.

4. State the avalanche breakdown effect.

5. Draw the Eber-Moll model for a PNP transistor.

6. What are the advantages of JEFT over BJT?

7. What is the need for biasing the transistor?

8. How to measure the stability of a biasing circuit?

9. Define intrinsic stand off ratio of UJT.

10. Draw the two transistor model for SCR.

PART B – (5×16=80 MARKS)

11. Derive an expression for the deflection sensitivity of the magnetic deflection system used in CRO.

Or

12. (a) Explain any one application of hall effect.

(b) Describe the energy band structure of conductor and insulator.

13. Derive the diode current equation.

Or

14. With the energy band diagram explain the operation of a tunnel diode.

15. (a) With the help of current components, explain the operation the operation of NPN transistor and draw its input and output characteristics in CE configuration.

(b) Write the applications of BJT.

Or

16. (a) Explain the construction and characteristics of n-channel JFET.

(b) write the application of JEFT.

17. A transistor is connected in a self bias current with Ie=5 mA, Vce=6 V, Vc=8 V, s=10, ß=200 and Vcc=20 volts. Determine the values of resistors used in it.

Or

18. (a) Explain the voltage variable resistor operation of JFET.

(b) With the necessary circuit diagram explain anyone of the biasing methods of JFET.

19. (a) Draw the block diagram of regulated power supply system and explain its operation.

(b) Draw the equivalent circuit of UJT and explain its characteristics.

Or

20. Draw the explain the construction and characteristics of DIAC and TRIAC.