Degree : B.E Degree End Semester Examinations APR/MAY 2019
Branch : ELECTRONICS AND COMMUNICATION ENGG
Semester : 2
Code No. /Subject : EC8201 Electronic Devices (R-2012)
Time: 3 Hours Answer ALL questions Max.marks: 100

PART-A (10 X 2 = 20 marks)

1. Write the boundary conditions for total minority concentration of forward biased pn junction diode.
2. What is meant by storage time of pn junction diode?
3. What are the operating modes of BJT?
4. What are the applications of multi-input transistor?
5. Draw the drain and transfer characteristics of JFET.
6. What is meant by channel length modulation?
7. Define threshold voltage for a MESFET.
8. Distinguish between Zener and Avalanche breakdown.
9. Draw the VI characteristics of SCR.
10. What is the use of opto-coupler?

PART-B (5X16=80 Marks)

11. a. i. Explain the operation of any one type of Power MOSFET with structural diagram.
    ii. Find the current delivered to load of 10Ω connected with input voltage of Vin = 210sinθ, controlled by a TRIAC with firing angle of 30°.

12. a. With energy band diagram, explain VI characteristics of diode.

    (or)

    b. Explain turn-on and turn-off transients of diode.

13. a. Derive Gummel Poon model of BJT.

    (or)

    b. Explain and draw the h-parameter equivalent circuit of BJT.

14. a. Derive drain current of JFET and find the drain current through n channel JFET for V_{GS} = -1V assume I_{DSS} = 10mA, V_P = -4V.

    (or)

    b. With small signal equivalent circuit, explain the parameters of MOSFET.

15. a. Explain the VI characteristics of Schottky diode.

    (or)

    b. Write short notes on Gallium Arsenide Devices and LASER.