



50431



PART - B

(5×16=80 Marks)

11. a) With the help of space charge width parameter, explain the behavior of PN junction diode when Forward Biased and Reverse Biased and derive the diode current equation.

(OR)

- b) Discuss the switching characteristics of PN diode with suitable application.

12. a) Discuss the three different configurations of BJT along with its characteristics and also highlight the impact of Base width modulation.

(OR)

- b) Analyze the two different functionality of BJT with appropriate equivalent circuit models.

13. a) "Field Effect Transistor is a voltage controlled current device" - justify the statement by describing the characteristics of the device involving the impact various parameters such as pinch off voltage, source drain voltage and gate source voltage.

(OR)

- b) With relevant sketches, explain the working mechanisms of enhancement and depletion MOSFET.

14. a) Narrate your understanding on various two terminal devices such as Schottky barrier diode, Zener diode, Tunnel diode and Varactor diode.

(OR)

- b) With relevant sketches, explain the working mechanisms of Gallium Arsenic device and LDR.

15. a) Discuss characteristics of Silicon Controlled Rectifier, also with neat circuit explain how it can be used as Battery charging regulator and temperature controller.

(OR)

- b) Explain your understanding on various pnpn devices such as Photo Transistor, Opto-Coupler, Solar cell and CCD.