

B.E./B.Tech. DEGREE EXAMINATION, NOVEMBER/DECEMBER 2009

Third Semester

Electrical and Electronics Engineering

EC 1211 — ELECTRONIC DEVICES

(Regulation 2004)

Time : Three hours

Maximum : 100 marks

Answer ALL questions.

PART A --- (10 × 2 = 20 marks)

1. What is meant by Intrinsic and extrinsic semi conductors?
2. Name some donar and acceptor impurities.
3. Define α and β of a transistor.
4. Draw the hybrid model for CB configuration.
5. List the characteristics of JFET.
6. Mention the applications of UJT.
7. What is known as photo conductive effect?
8. What are the advantages of LCD?
9. What is a varactor diode?
10. Define latch current and holding current in SCR?

PART B — (5 × 16 = 80 marks)

11. (i) Describe the operation of PN junction diode with its VI characteristics. (8)
(ii) Derive the expression for Diffusion capacitance of a PN Junction diode. (8)
12. (a) (i) Describe the three operating regions of a transistor with necessary diagram. (8)
(ii) What are the three configurations of operation of a transistor? Compare the three configurations. (8)

Or

- (b) Determine the Input impedance, output impedance, voltage gain and current gain of a transistor in CE configuration. Use its h-parameter model.
13. (a) (i) Define and explain the three parameters of a JFET. Give the relation between them. (8)
- (ii) Explain the constructional details and characteristics of Depletion MOSFET. (8)

Or

- (b) (i) Explain the performance of FET as a voltage variable resistor. (6)
- (ii) Explain the construction and VI characteristics of UJT. (10)
14. (a) (i) Explain the construction and operation of LED. (8)
- (ii) Illustrate the concept of photo emissivity and photo conductivity with examples. (8)

Or

- (b) (i) Discuss the operation and characteristics of opto-coupler. (8)
- (ii) Write a detailed note on solar cell. (8)
15. (a) Explain the construction, characteristics of tunnel diodes. Mention some of the applications of tunnel diodes. (16)

Or

- (b) (i) What is Piezo electric effect? Explain with an example. (8)
- (ii) What is Zener break down and Avalanche Break down? Explain the characteristics of Zener diode. (8)
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