

D 10049

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Name.....

Reg. No.....

**THIRD SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION  
DECEMBER 2010**

CS/IT 09 305/PTCS 09 304—ELECTRONIC CIRCUITS

(2009 admissions)

Time : Three Hours

Maximum : 70 Marks

**Part A**

*Answer all questions.*

1. State the characteristics of Laser diodes.
2. Define Duty Cycle.
3. What is non-linear Op-amp ? Give an example.
4. What is I<sup>2</sup>L logic ?
5. Enumerate the potential applications of sample and hold circuits.

(5 × 2 = 10 marks)

**Part B**

*Answer any four questions.*

6. Explain the principle of Opto-Coupler. With a neat diagram.
7. What is the working principle of step recovery diode ?
8. Enumerate the advantages of Digital Switching.
9. Explain the features of ULSI technology.
10. Explain the principles of MOS Flip-flop.
11. Discuss the principle of CD-ROM with a neat diagram.

(4 × 5 = 20 marks)

**Part C**

*Answer Section (a) or (b) of each question.*

12. (a) Draw a neat circuit diagram of astable multivibrator and explain its principle of operation.

*Or*

(b) Explain the following in detail :

- (i) Schmitt trigger.
- (ii) Tunnel diode.
- (iii) Laser diode.

(3 + 3 + 4 = 10 marks)

**Turn over**

13. (a) Explain in detail the drain characteristics of E-MOSFET with neat diagrams.

*Or*

(b) Draw an Op-amp comparator with non-zero reference and explain it in detail.

14. (a) Compare and contrast the parameters of all the logic families.

*Or*

(b) Explain in detail the concept of VLSI and ULSI technologies.

15. (a) Explain the construction and principles of SRAM and DRAM with neat diagrams.

*Or*

(b) Explain the following in detail : —

(i) R-2R ladder DAC.

(5 marks)

(ii) Flash ADC.

(5 marks)

[4 × 10 = 40 marks]

