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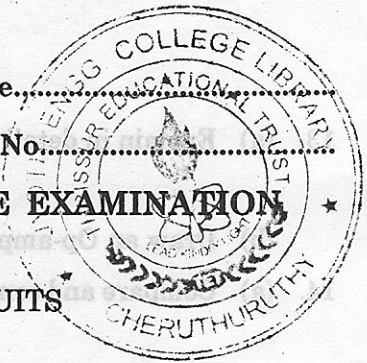
Name.....

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 I²L 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]

(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 Pip-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 stable multiplier 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