D 20627-A

(Pages : 2)

Name.............................

Reg. No.........................
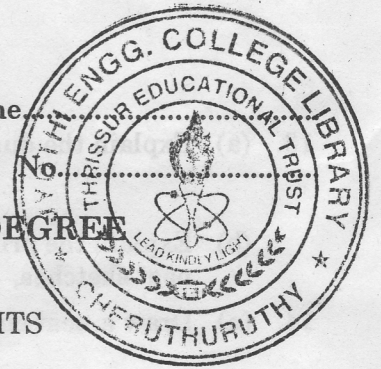
THIRD SEMESTER B.TECH. (ENGINEERING) DEGREE EXAMINATION, OCTOBER 2011

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

(2009 admissions)

Time : Three Hours

Maximum : 70 Marks

Part A

Answer all questions.

1. Write any *four* characteristics of LED.

2. What is duty cycle ?

3. State the applications of comparator.

4. What is a flip-flop ?

5. What are volatile and non-volatile memories ?

(5 × 2 = 10 marks)

Part B

Answer any four questions.

6. Draw the equivalent circuit of PIN diode and explain it.

7. What is varicap ? Explain with a neat sketch.

8. Explain the advantages of Digital Switching.

9. Differentiate VLSI from ULSI.

10. Explain the features of MOS flip-flop.

11. Explain the significance of timing circuits in ADC.

(4 × 5 = 20 marks)

Part C

Answer section (a) or section (b) of each section.

12. (a) Explain the construction and V-I characteristics of Tunnel diode with a neat energy band diagram.

Or

(b) Explain the following in detail with neat diagrams :—

(i) Schmitt trigger ; and (ii) Step recovery diodes.

(5 + 5 = 10 marks)

Turn over

13. (a) Explain the dual gate D-MOSFET's with neat diagrams.

Or

(b) Explain the principles of waveform conversion and waveform generation using op-amps with neat sketches.

14. (a) Draw a neat circuit diagram of CMOS NAND gate. Explain its principle of operation.

Or

(b) Explain in detail the concepts of MSI, LSI and VLSI with neat sketches.

15. (a) Explain the following in detail :

    (i) SRAM and DRAM.   (5 marks)

    (ii) Memory expansion.   (5 marks)

Or

(b) Explain the principle of operation of single slope and dual slope ADC with neat diagrams in detail.

$[4 \times 10 = 40 \text{ marks}]$