

CS 305

9/10/2011

D 20627-A

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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.



**ammini**  
College of Engineering

[4 × 10 = 40 marks]