

Register Number :

Name of the Candidate :

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B.E. DEGREE EXAMINATION, 2008

(**COMPUTER SCIENCE AND ENGINEERING /
INFORMATION TECHNOLOGY**)

(**THIRD SEMESTER**)

COEC - 304 / ITEC - 303.

DIGITAL LOGIC DESIGN

May]

[Time : 3 Hours

Maximum : 60 Marks

Answer any ONE full question from each unit.

All question carry equal marks.

UNIT - I

1. (a) How do you convert $(1832.65)_{10}$ into

(i) Binary.

(ii) Hexa decimal equivalent numbers.

(b) Explain various digital logic families and MOS circuit.

Turn over

2. (a) Explain various theorems of Boolean algebra and list the properties.

(b) How NAND and NOR gates are said to be universal gates ? Explain.

UNIT - II

3. (a) What is a don't care term ? How do you represent SOP form of Boolean expression into POS form.

(b) How do you convert any boolean function into a 2 level NDR function only ? illustrate.

4. With a 6 variable k map. Simplify the following boolean function.

$$F = \sum_m (0,1,2,5,6,7,10,11,16,18,24,27) + \sum_d (28,29,30)$$

UNIT - III

5. Explain a full adder circuit and subtractor circuit, with truth tables. How they are used in parallel adders ?

6. Explain a decoder circuit. How code conversion is realized using ROM ? Explain.

UNIT - IV

7. What are the different triggering schemes used in flip flops ? Describe state reduction and state assignments. How sequential circuit are analyzed ?

8. Explain the design of a mod 10 and mod-12 counters and discuss their working.

UNIT - V

9. What are registers, ripple counters ? synchronous counters ? Design a shift left register and explain its working.

10. Write short notes on:

(a) Memory unit.

(b) Multi level gates and uses.