ANNA UNIVERSITY COIMBATORE

B.E. / B.TECH. DEGREE EXAMINATIONS : MAY / JUNE 2010

REGULATIONS : 2007

THIRD SEMESTER

070250002 - DIGITAL PRINCIPLES AND SYSTEM DESIGN

(COMMON TO CSE / IT)

TIME : 3 Hours **Max.Marks : 100**

PART – A

(20 x 2 = 40 MARKS)

ANSWER ALL QUESTIONS

1. Convert $(1010.011)_2$ to decimal.
2. Using 10's complement subtract 3250 – 72532.
3. Write distributive law.
4. List two universal gates.
5. Draw the combinational circuit for half adder.
6. What is PAL?
7. Write De-Morgans Theorem.
8. Draw the truth table for XOR gate.
9. Define fan - in and fan out?
10. What is HDL?
11. What is flip flop?
12. Which flip flop is used as register?
13. What is multiplexer?
14. List types of ROM.
15. What is difference between Moores' model and Mealy Model?
16. Explain state reduction
17. Ripple counter is also called as _____ counter.
18. List error correction codes.

19. What is ASM?
20. What are races?

PART – B

(5 x 12 = 60 MARKS)

ANSWER ANY FIVE QUESTIONS

21. Find Sum of Products and product of sums using Karnaugh map for $\sum(5,6,8,9,12,15)+d(1,7)$

22. Design a combinational circuit for binary to BCD conversion.

23. a. With neat diagram explain 3 X 8 decoder 8

    b. Compare multiplexers and demultiplexers. 4

24. a. With neat diagram explain Master / Slave JK Flip-flops. 8

    b. With neat diagram explain D Flip-Flop. 4

25. Explain serial in parallel out and parallel in parallel out operations of shift registers with necessary diagrams.

26. Design a synchronous up down counter and explain in detail .

27. Write short note on hazards.

28. Explain in detail Race free state assignment.

*****THE END*****