BE (Third Semester)

Information Technology

Digital Electronics And Logic Design - 333356(33)

2015 - Summer Session , New Scheme

Chapter 1

1	Compare BCD with Binary.	**2**
2	What is a Hamming Code ? Assume that the data has been encoded in a 7 bit even parity hamming code and number 1011011 is received. Find out the bit in error. What will be the corrected code?	**7**
3	Simplify the expression using K-map. $F = \Sigma$ m (0,2,4,5,6,7,8,10,11,12,14,15) Also realize the expression using AOI logic.	**7**
4	Simplify the following Boolean Expression using tabulation method. $F(A,B,C,D) = \Sigma m$ (0,2,3,6,7,8,10,12,13) Draw Prime implicant chart and find essential prime implicants.	**7**

Chapter 2

1	Define fan-in and fan-out.	**2**
2	Discuss TTL logic family and also give detail of Totem pole output driver.	**7**
3	What is ECL logic? Why it is not popular? Give advantages and disadvantages of it.	**7**
4	Give the various characteristics of digital ICs based on which the performance of IC's can be compared?	**7**

Chapter 3

1	Mention the difference between Decoder and Demultiplexer.	**2**
2	Design a code converter that converts a decimal digit from 8421 code.	**7**

3	Design a 3 bit odd parity generator and checker.	**7**
4	Implement the following Boolean function using 8:1 multiplexer : $F(A, B, C, D) = \Sigma m (0,1,3,4,8,9,15)$	**7**

Chapter 4

1	Compare combinational and sequential circuits.	**2**
2	What are the advantages of JK flipflop over an SR flip flop ? Construct the clocked JK flip flop using only NAND gates.	**7**
3	Design a mod-5 synchronous binary up-counter using T-flip flop.	**7**
4	Design and implement a mod-10 asynchronous counter using T-flipflop.	**7**

Chapter 5

1	Give difference between RAM and ROM.	**2**
2	Explain briefly different types of ROM's.	**7**
3	Draw and explain block diagram of PLA.	**7**
4	(i) What is major difference between Mealy and Moore Machine? (ii) What are applications of finite state machine model?	**7**