BE (Third Semester)

Information Technology

Digital Electronics And Logic Design - 333356(33)

2013 - Winter Session , New Scheme

Chapter 1

1	What is Gray code ? Convert Gray code 100011101 to binary ?	**2**
2	Simplify the following function by using Quine-McCluskey method : f(A,B,C,D) = Σm(1,4,6,7,8,9,10,11,15).	**7**
3	Minimize the following expression using K-map and realize using logic gates : F1(A,B,C,D) = Σm(1,3,5,8,9,11,15) + d(2,13) F2(A,B,C,D) = πM(1,2,3,5,6,7,9,10,11,13,14,15)	**7**
4	Simplify the following Boolean identity : (i) ({ AB + ar{A}ar{C} + Aar{B}C(AB + C)})	**7**

Chapter 2

1	What is meant by Fan-in and Fan-out ?	**2**
2	Explain the working of CMOS invertor giving its circuit diagram and explain CMOS-NOR gate function.	**7**
3	Draw the circuit of tri-state TTL gate and explain it.	**7**
4	What are the characteristics of the ECL family ? With the help of a neat circuit diagram, explain the working of a two input ECL OR/NOR gate.	**7**

Chapter 3

1	What is the difference between multiplexer and decoder.	**2**
2	Design BCD to Exces 3 code converter using AND, OR, EX-OR.	**7**

3	Design 16 : 1 multiplexer using 4 : 1 multiplexer.	**7**
4	Explain the operation of four bit carry-look ahead adder circuit.	**7**

Chapter 4

1	Compare between Synchronous and Asynchronous sequential circuit ?	**2**
2	What is shift register ? With neat diagram explain working of Parallel-in, Serial-out shift register.	**7**
3	Implement logic to convert S-R flip flop to T flip flop.	**7**
4	Design mod-10 counter using jk flip flop.	**7**

Chapter 5

1	Explain the difference between static and dynamic memory ?	**2**
2	Implement the following Boolean function using PLA : f1 (A,B,C) = Σ(0,1,3,4) f2 (A,B,C) = Σ(1,2,3,4,5)	**7**
3	What is a programmable logic array ? Also explain its advantage and disadvantage.	**7**
4	Explain briefly the different type of ROMs.	**7**