

Code No: R21054

www.FirstRanker.com

**R10** 

SET - 1

## II B. Tech I Semester Supplementary Examinations, Oct/Nov- 2017 DIGITAL LOGIC DESIGN (Com. to CSE, IT)

Tin	ne: 3	hours Max. Ma	rks: 75	
	Answer any <b>FIVE</b> Questions All Questions carry <b>Equal</b> Marks			
1.	a)	Perform the following subtraction using 10's complement method i) 72532 - 3250 ii) 7188 - 3049 iii) 84574 - 123	(9M)	
	b)	Convert the following i) 101110 to base-10ii) 101110 to base-8	(6M)	
2.	a) b)	Realize EX-OR gate using only NAND and NOR separately? Find the complement of the following expressions: i) $ABC + \overline{AB} + AB\overline{C}$ ii) $\overline{ABC} + ACB + \overline{AB}\overline{C}$	(7M) (8M)	
3.	a)	Simplify the following Boolean function F i) $F(A,B,C,D) = \sum (0,6,8,13,14) + \sum_d (2,4,10)$ Draw the logic diagram for the simplified above function?	(8M)	
	b)	Find the dual complement of $BC + A\overline{D}E + B\overline{C}E + AEB$	(7M)	
4.	a)	Design a combinational circuit with three inputs x, y, z, and three outputs A,B,C. When the binary input is 0,1,2,or 3 the binary output is one greater than the input. When the binary input is 4, 5, 6, or 7 the binary output is one less than the input?	(8M)	
	b)	Draw the block diagram and truth table for Full Subtractor? Explain with k-map?	(7M)	
5.	a) b)	Draw the logic diagram of a 3 to 8 decoder Explain? Include an enable input? Construct a 16 X 1 MUX with two 8 X 1 MUX and one 2 X 1 MUX, use block diagram for multiplexer?	(8M) (7M)	
6.	a)	What are the architectural differences between PAL and PROM? Discuss with the use of suitable diagrams?	(7M)	
	b)	With the help of a neat diagram explain the PLA and functions of each component?	(8M)	
7.	a) b)	How do you Convert a JK into T flip flop? Discuss What is race condition? Discuss about JK Master-slave Flip-Flop	(8M) (8M)	
8.	a) b)	Design a 4-bit binary ripple counter with D – flip flop? Construct a Johnson Counter for ten timing signals?	(8M) (7M)	
7. 8.	a) b) a) b)	How do you Convert a JK into T flip flop? Discuss What is race condition? Discuss about JK Master-slave Flip-Flop Design a 4-bit binary ripple counter with D – flip flop? Construct a Johnson Counter for ten timing signals?	(8N (8N (8N (7N	

1 of 1