

National University of Computer and Emerging Sciences, Lahore Campus



Course: Digital Logic Design Lab
Program: BS (Computer Science)
Duration: 20+20 mins
Date: 05-03-18
Section: D-2

Course Code: EL227
Semester: Spring 2018
Total Marks: 15
Weight: 5%
Pages: 2

Quiz#1

Question # 1

A	B	C	T ₁	T ₂
0	0	0	1	0
0	0	1	1	0
0	1	0	1	0
0	1	1	0	1
1	0	0	0	1
1	0	1	0	1
1	1	0	0	1
1	1	1	0	1

- a. Write Equation of Functions in SOP Form i-e as Sum of Min-terms Form (algebraic expression):

$$T_1 (A, B, C) = A'B'C' + A'B'C + A'BC'$$

$$T_2 (A, B, C) = A'BC + AB'C' + AB'C + ABC' + ABC$$

- b. Write Equation of Majority Function in POS Form i-e as Product of Maxterms Form (algebraic expression):

$$T_1 (A, B, C) = (A + B' + C') (A' + B + C) (A' + B + C') (A' + B' + C) (A' + B' + C')$$

$$T_2 (A, B, C) = (A + B + C) (A + B + C') (A + B' + C)$$

- c. Implement the complete circuit diagram (including T1 and T2) of SOP form on LogicWorks and verify the outputs using timing diagrams.

Note: Use 2-input Logic Gates only

- d. Implement the complete circuit diagram (including T1 and T2) of POS form on LogicWorks and verify the outputs using timing diagrams.

Note: Use 2-input Logic Gates only