Digital Logic Design

Problem Set #7

Due Date: 1400/09/15

1. Implement the functions below using PAL16L8 *(Nelson, P5.4) (45 points)*

$f_1(a,b,c,d) = \sum m(0,1,2,3,6,7,9,11)$

$f_2(a,b,c,d) = \sum m(0,1,6,7,8,9)$

$f_3(a,b,c,d) = \sum m(2,4,9,11)$

2. Provide the PLA programming table for the four Boolean functions listed below. Minimize the numbers of product terms *(Mano, P7.19) (40 points)*

$A(x, y, z) = \Sigma(1, 3, 5, 6)$

$B(x, y, z) = \Sigma(0, 1, 6, 7)$

$C(x, y, z) = \Sigma(3, 5)$

$D(x, y, z) = \Sigma(1, 2, 4, 5, 7)$

3. Construct a T flip-flop using only a JK flip-flop. *(15 points)*

Good Luck!

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Do not hesitate to ask your question
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