Questions

FPGAspeaks

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1 Gate Questions

1. Given $F(a,b,c) = \sum m(3,6)$ write the function F in boolean expression.

(EC 2005)

2. A Boolean function F of two variables is defined as follows: $F(0,0) = F(0,1) = F(1,1) = 1$ and $F(1,0) = 0$ write Boolean expression for F.

(EC 2004)

3. In the sum of products function $F(x,y,z) = \sum m(2,3,4,5)$ write the function F in boolean expression.

(EC 2013)

4. Given $F(a,b,c,d) = \sum m(0,2,3,4,8,9,10)$ write the function F in boolean expression.

(EC 1998)

5. Given $F(a,b,c,d) = \sum m(0,2,8,10,11) + d(5,15)$ write the function F in boolean expression.

(EC 2006)

6. Write the simplified sum of products expression for Boolean function $F = m_0 + m_2 + m_3 + m_5$, where m_0, m_2, m_3, m_5, are minterms corresponding to the inputs A, B and C with A as the MSB and C as the LSB.

(EC 2017)

7. A function of Boolean variables X, Y and Z is expressed in terms of the minterms as $F(X,Y,Z) = \sum m(1,2,5,6,7)$ write F in product of sum form.

(EC 2015)

8. Given $F(P,Q,R) = PQ + Q\overline{R} + P\overline{R}$ rewrite this F in standard canonical form.

(CS 2010)

9. Given f_1, f_2 and f in canonical sum of products forms. $f_1(a,b,c,d) = \sum m(4,5,6,7,8)$, $f_3(a,b,c,d) = \sum m(1,6,15)$ and $f = \sum m(1,6,8,15)$. If $f = f_1 f_2 + f_3$ then f_2 is ?

(CS 2008)

10. Consider three 4-variables functions f_1, f_2 and f_3, which are expressed in sum-of-minterms as $f_1 = \sum m(0,2,5,8,14)$, $f_2 = \sum m(2,3,6,8,14,15)$, and $f_3 = \sum m(2,7,11,14)$ express f in sum-of-minterms if $f = (f_1 \cdot f_2) \bigoplus f_3$.

(CS 2019)

11. $f(A,B,C,D) = \prod M(0,1,3,4,5,7,9,11,12,13,14,15)$ is a Maxterm representation of a Boolean function $f(A,B,C,D)$ where A is the MSB and D is the LSB. Write the equivalent minized Minterm representation of this function.

(EE 2015)