DIGITAL LOGIC DESIGN COE 202

QUIZ-2, Section 5

Saturday, November 29, 2008

Student Name and ID……..

<u>Simplification of Boolean Functions</u>

1. Consider the Boolean expression **F(x, y, z, t) = Π (0, 3, 7, 12, 14, 15)** which is expressed as product of Maxterms.

    a. Determine the expression of **F (x, y, z, t)** as sum of Minterms.

    b. Determine the expression of **F' (x, y, z, t)** as sum of Minterms.

    c. Determine the expression of **F' (x, y, z, t)** as product of Maxterms.

2. Consider the Boolean expression **F(x, y, z) = Σ (0, 2, 3, 4, 6)** which is expressed as sum of Minterms. Answer each of the following questions:

    a. Use the K-Map (only) to find a minimal expression of **F(x, y, z)** as sum of products (SOP).

    b. Use the K-Map (only) to find the expression of **F(x, y, z)** as a product of Maxterms.

    c. Use the K-Map (Only) to find a minimal expression of **F(x, y, z)** as a product of sums (POS).