Quiz #1 Sol

Group A

1. We have two binary code/form numbers stored in a computer. Calculate the decimal value of the given binary when the number stored as the indicated code/form:
   1. BCD Exsess3

(1010 1011) = 0111 1000 = 78 )10

(0011 1000) = 0000 0101 = 05 )10

* 1. BCD 8421

(0101 0111) = 57 )10

(0011 1000) = 38 )10

* 1. BCD 5421

(1010 1011) = 78 )10

(0011 1000) = 35 )10

* 1. Binary 2’s Complement

(1010 1011) = - 01010101 = - 85)10

(00111000) = 56)10

* 1. Binary Unsigned

(10101011) = 171 )10

(01111000) = 120 )10

1. Given the following expression

F= Bc’d’+ cd + bc’d+ abc+bd+ abc’d

* 1. Find the Minimum sum of products expression for the expression

F= bc’+ ab + dc

* 1. Find the minimum Product of Sums expression for the expression

f= (b+c)(b+d)(a+ c’+ d)

1. Find all minimum **Sum of products** and **Product of sums** expressions for the following function (that is, using K-map, circle the terms on the map and write the algebraic expressions).

F(w,x,y,z) = ∑m(1,3,7,11,13,14) + ∑d(0,2,5,8,10,12,15)

F1,2 = w’z+wx+{x’y/wy}

F3 = wy + w’x’ + xz

F’= w’z’+wx’y’

F4= (w+z)(w’+x+y)

1. Draw the given function using, ONLY, NAND gates:

**F= b’a’d + b’de’ + abde + acde + a’bc’d’+ abd’e’**

F

b

c

d

e

a