Quiz 1 Solution

Group B

1. We have a computer that can store 3 decimal digits, How are the following numbers stored, using the specified code/form:
2. BCD Exsess3 of (56) (56)10 = 001110001001)BCD Ex3
3. BCD 8421 of (31) (31)10= 000000110001 )BCD 8421

1. BCD 5421 of (85) (85)10= 000010111000)BCD5421
2. 2’s Complement of (-37) (-37) = 111111011011) 2’C
3. Signed magnitude Binary of (-164) (-164) = 100010100100) Signed Integer

1. Given the following expression

*F= a’b’c’ + a’bc’ + a’bc +ab’c +abc’ + abc*

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

F= a’c’+ ac + b

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

F= (a+b+c’)(a’+ b+c)

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).

1. F(a,b,c.d) = ∑m(0,2,4,5,10,12,15) + ∑d(8,9,14)

Sol:

F1,2= b’d’ +a’bc’ + abc + c’d’/ad’

F’ =ac’d + b’d + a’bc F3= (a’+ c+ d’)(b+d’)(a +b’+c’)

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