Department: Information Technology
Course Name: Logic Design
Course Code: SIT213/IT212/CS221
Instructor: Dr. Dina Tarek Mohamed

Date: 22 November 2021
Duration: 30 Minutes
Number of pages: 2
Total Marks: 10

Quiz 1 (V4)

Name: I-Zaid **Id:** _____

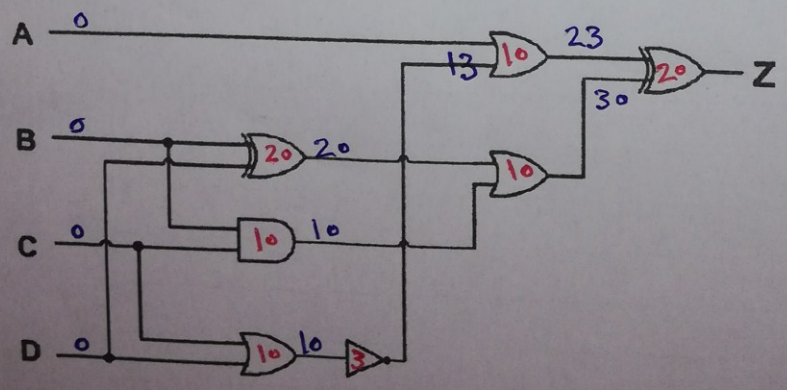
1. Determine the representation of $(89)_{10}$ using the following code 6421 (1)

any = 1010 1011

2. Add the following two BCD numbers, (1001 0010 0011) + (0011 0111 1000) (3)

1001 0010 0011 +
0011 0111 1000
1100 1001 1011
0110 + 0110 + 0110 +
0001 0011 0001

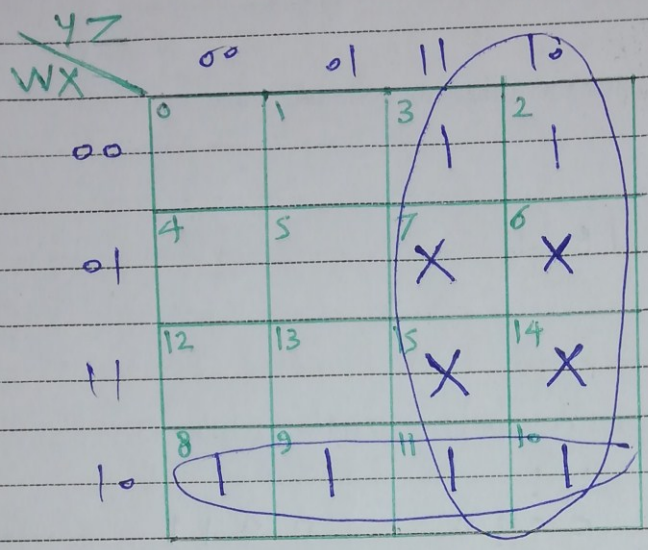
3. Calculate the propagation delay of the following logic diagram (1)
Knowing the propagation delay of the following gates: NOT gate=3nsec AND gate & OR gate=10 nsec NAND gate & NOR gate=13 nsec XOR gate=20nsec XNOR gate=23 nsec



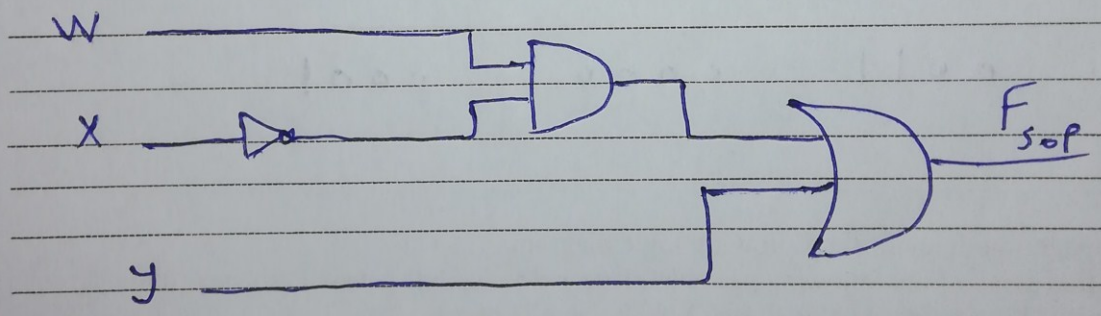
V4 Cont.

4. Draw the logic diagram for the following function after simplification using k-map, $F(W,X,Y,Z)= \pi_M(0,1,4,5,12,13)+d(6,7,14,15)$ as SoP (5)

$F = \Sigma m(2,3,8,9,10,11) + d(6,7,14,15)$



$F_{SoP} = W\bar{X} + y$



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Quiz 1 (V5)

Name: I. Zaida **Id:** _____

1. Determine the representation of $(47)_{10}$ using the following code 5421 (1)

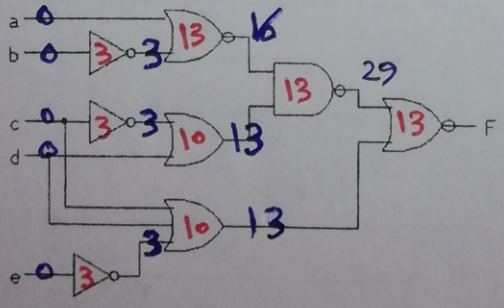
ans = (0100 1010)

OR (0100 0111) both answers are correct

2. Add the following two BCD numbers, (1000 0011 1001) + (0011 0110 0011) (3)

1000 0011 1001 +
0011 0110 0011
1011 1001 1100
0110 + 0110 + 0110 +
0001 0010 0000 0010

3. Calculate the propagation delay of the following logic diagram (1)
Knowing the propagation delay of the following gates: NOT gate=3nsec AND gate & OR gate=10 nsec NAND gate & NOR gate=13 nsec XOR gate=20nsec XNOR gate=23 nsec

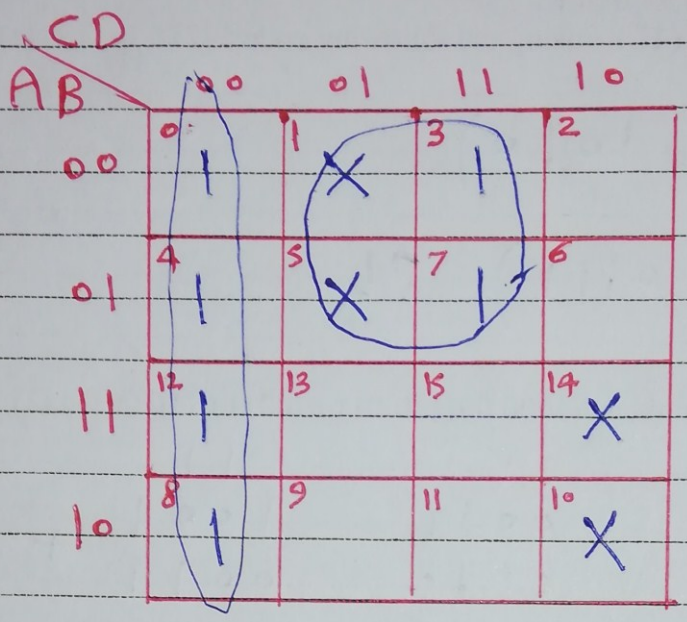


42 nsec

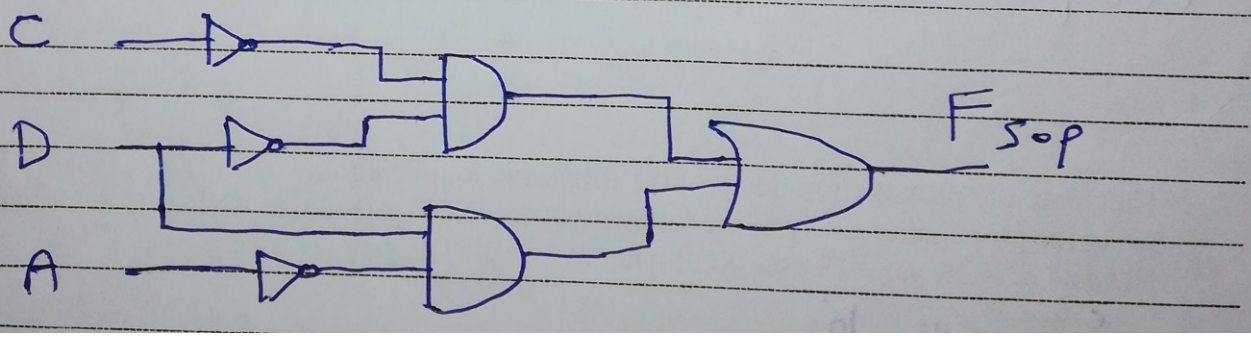
VS Sir.

4. Draw the logic diagram for the following function after simplification using k-map, $F(A,B,C,D)= \pi_M(2,6,9,11,13,15)+d(1,5,10,14)$ as SoP (5)

$F(A,B,C,D) = \Sigma m(0,3,4,7,8,12) + d(1,5,10,14)$



$F_{SOP} = \bar{C}\bar{D} + \bar{A}D$



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Quiz 1 (V6)

Name: I- Zada **Id:** _____

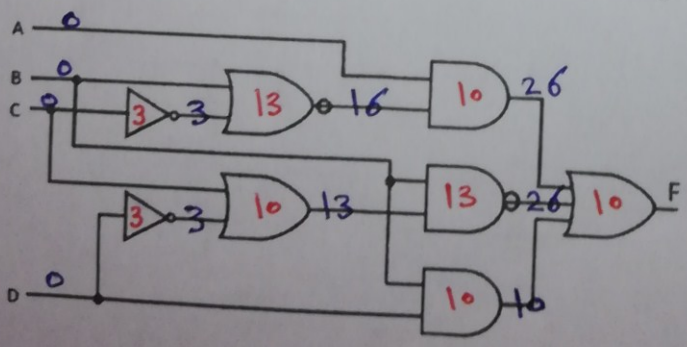
1. Determine the representation of $(93)_{10}$ using the following code 7421 (1)

ans = 1010 0011

2. Add the following two BCD numbers, (0101 1000 0110) + (0110 0001 0110) (3)

0101 1000 0110
0110 0001 0110 +
1011 1001 1100
0110+ 0110+ 0110+
0001 0010 0000 0010

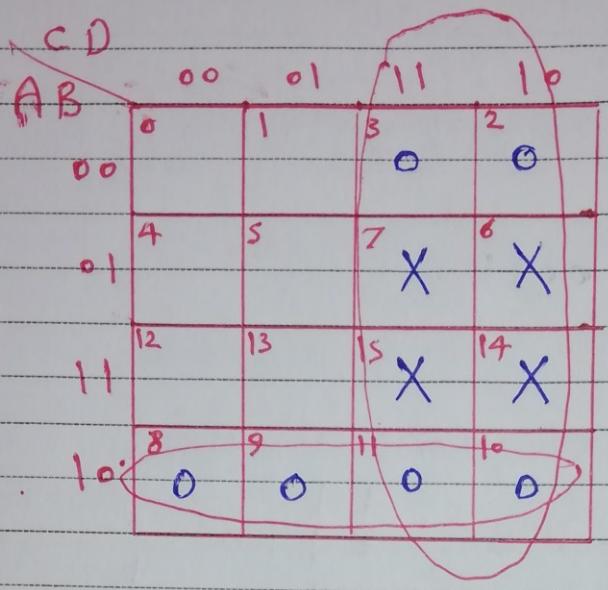
3. Calculate the propagation delay of the following logic diagram (1)
Knowing the propagation delay of the following gates: NOT gate=3nsec AND gate & OR gate=10 nsec NAND gate & NOR gate=13 nsec XOR gate=20nsec XNOR gate=23 nsec



VI Sem.

4. Draw the logic diagram for the following function after simplification using k-map, $F(A,B,C,D)= \sum m(0,1,4,5,12,13)+d(6,7,14,15)$ as PoS (5)

$F = \Pi M(2,3,8,9,10,11) + d(6,7,14,15)$



$F_{PoS} = (\bar{A} + B) \cdot \bar{C}$