



Mid Term Exam

Digital Design

Time Allowed: 1 hrs.

Dr: Ahmed Saleh

Total Marks: 25

BME Students.

2018 - 2019



Attempt the following:

Question 1

(A) Implement (Draw) the following functions Using NAND only.

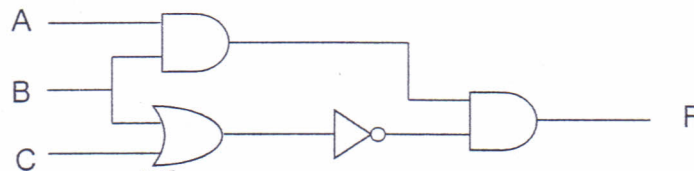
$$F = A'BC' + AC + A'B'C$$

(B) Find the complement of the following function: $F = B' + A'B'C' + AD + A'BC$

(C) Using Equations, simplify the following function: $F(X,Y,Z) = XY + X'Z + YZ$

(D) Using Equations: Express the function: $F(A,B,C) = A + B'C$ in **Sum of minterms**, what are the corresponding Maxterms?

(E) Find the output ONLY for the following circuit:



Question 2

(A) Using Map, simplify the following function: $F(A,B,C,D) = BC + A'D' + A'B'D$

Use:

- Sum of product form.
- Product of sum form.

(B) Assuming four variables in the order (A, B, C, D), Simplify the following functions (F1, F2) using the shown maps

1	0	x	1
x	x	1	1
0	0	0	1
1	0	0	x

F1

1	1	x	1
x	1	1	x
0	x	0	1
x	0	0	x

F2

(10 marks)

Note: the exam has more 5 degrees as OVER ☺

----- End of Questions -----

With Best Wishes

Dr: Ahmed Saleh

Plz, send feedback about the exam to:

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