DIGITAL SYSTEM LABORATORY WORK

MODUL 6 : MAPS KARNAUGH

BY :

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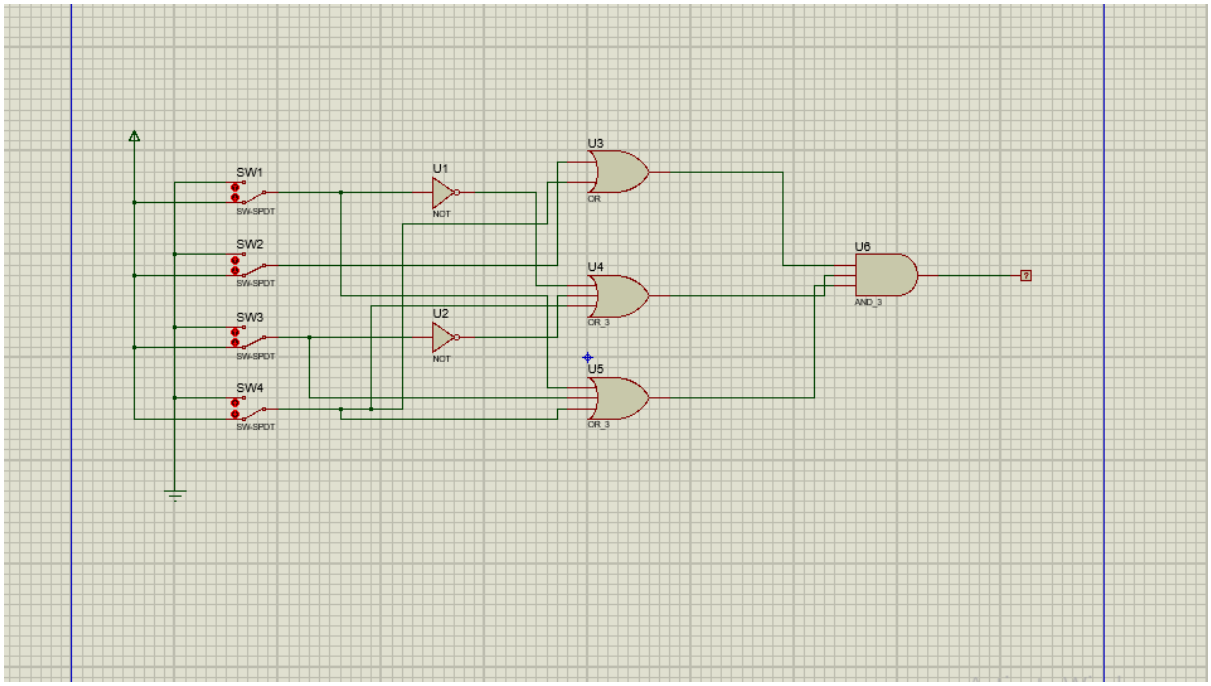
Date of Practicum : Friday, 3 may 2019

Attempt 1

1. Create the combination of logic gates on the follow maps

		AB			
		00	01	11	10
CD	00	0	0	0	0
	01	1	1	1	0
	11	0	1	1	1
	10	0	0	0	0

2. Boolean function : **F = BD + A'C'D + ACD**
3. Create logic gates based on your boolean function!! Picture in the box below!!



Attempt 2

1. Create the combination of logic gates based on the following maps

		AB			
		00	01	11	10
CD	00	1	0	0	1
	01	0	1	1	0
	11	0	1	1	0
	10	1	0	0	1

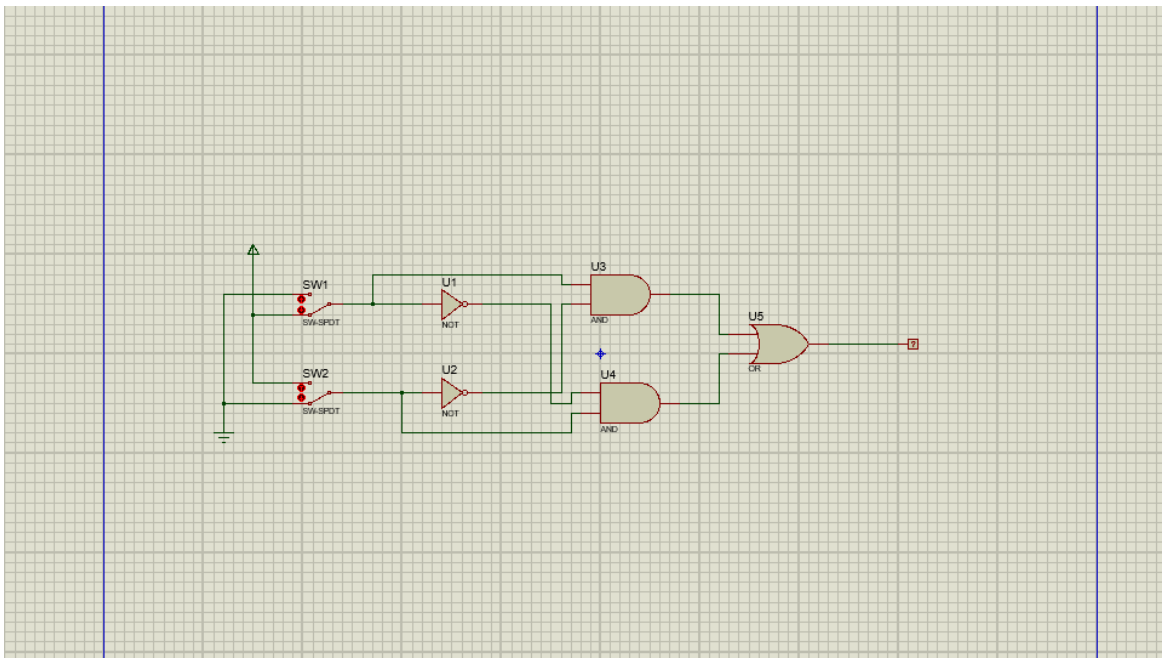
2. Boolean function :

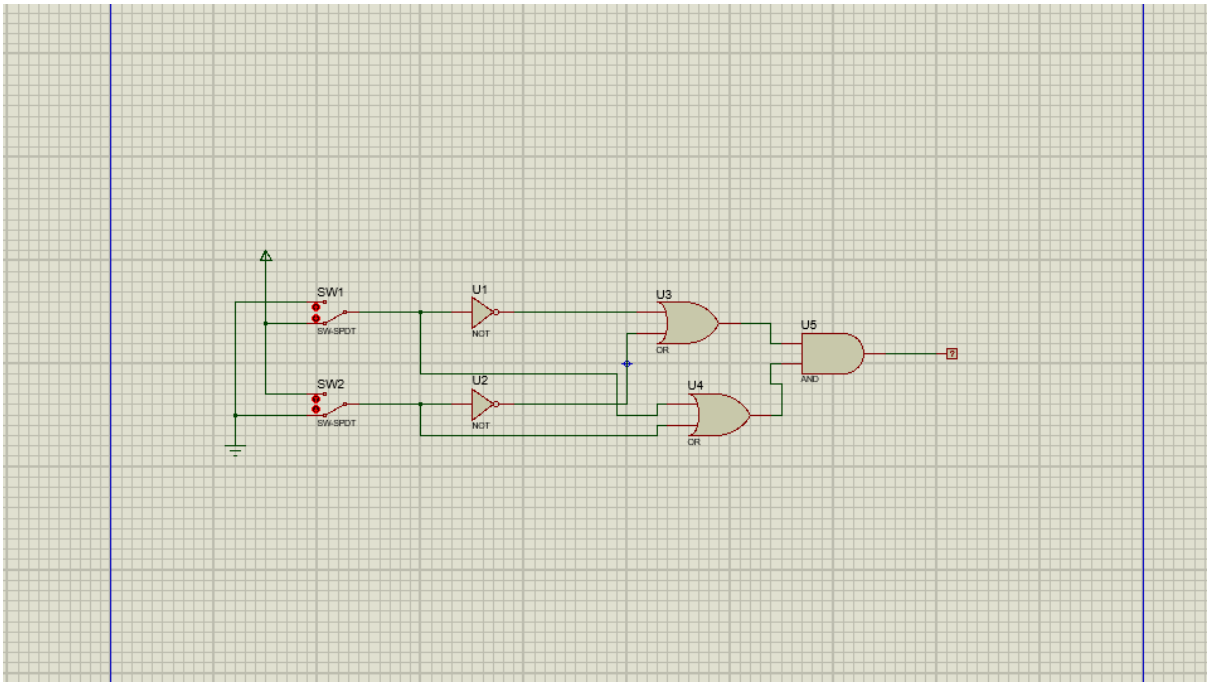
a. F = (B’ + D) (B + D’)

b. F = B’D’ + BD

3. Create logic probe

a.



b. 

Do the two combinations give the same results? Yes or ~~No~~

- **F = BD + B'D'**
- **F = (B'+D) (B+D')**
  = B'B + B'D' + BD + DD'
  = 0 + B'D' + BD + 0
  = B'D' + BD
  = BD + B'D'

Attempt 3

1. Boolean function :

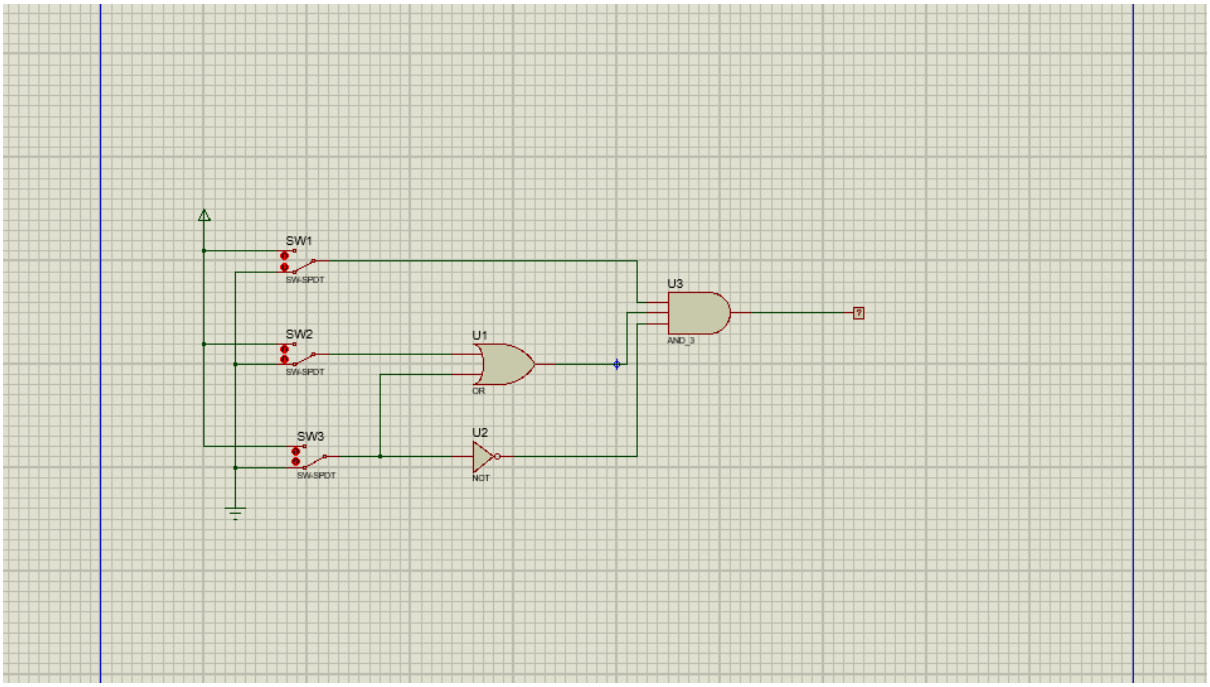
F = XYZ + XYZ' + XY'Z + X'YZ + X'YZ' + XY'Z' + X'Y'Z'

2. Based on the boolean function, fill in the points on the map karnaugh of the following!

		XY			
		00	01	11	10
Z	0	1	1	1	1
	1	0	1	1	1

3. Simplify boolean functions : **F = Z' + X + YZ**

4. Create logic gates based on your boolean function! Picture in the box below!



Attempt 4

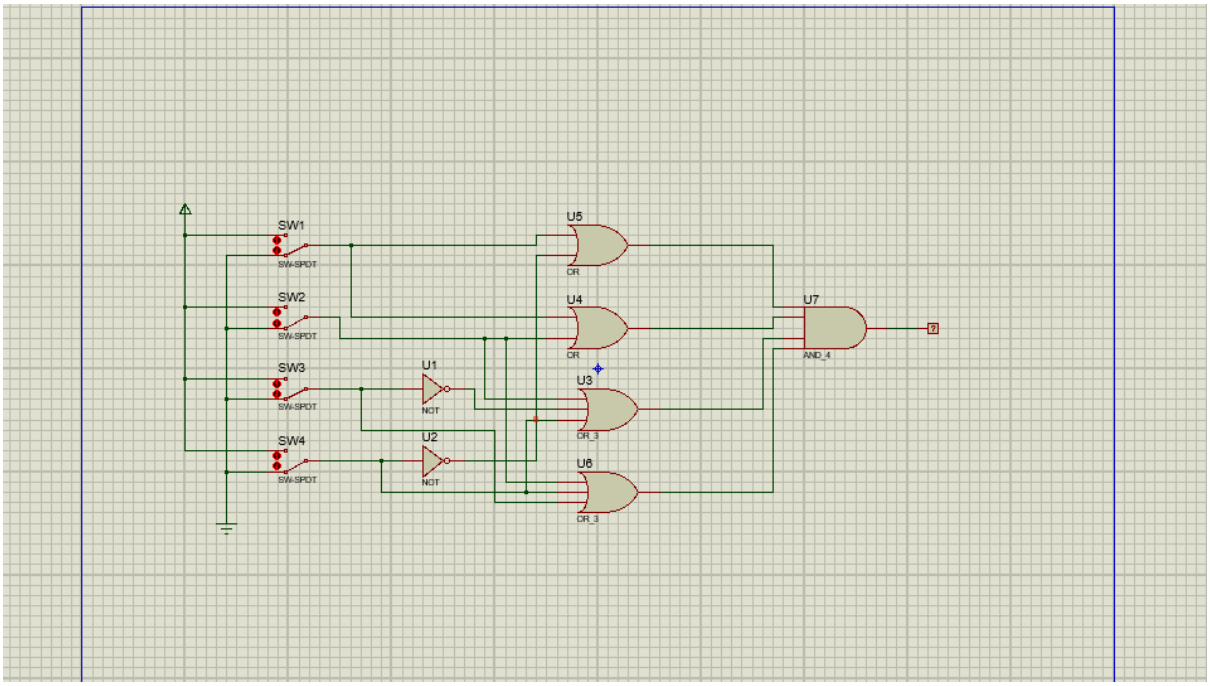
1. Boolean function :

F = AD’ + ABC + ABC’ + BCD + BC’D + AB’CD’

2. Based on the boolean function, fill in the points on the map karnaugh of the following!

		AB			
		00	01	11	10
CD	00	0	1	1	1
	01	0	0	1	0
	11	0	1	1	0
	10	0	0	1	1

3. Simplify boolean functions : **F = AD’ +AB + BC’D + BCD**
4. Create logic gates based on your boolean function! Picture in the box below!



Attempt 5

1. Table boolean function

A	B	C	D	F
0	0	0	0	1
1	0	0	0	0
0	1	0	0	0
1	1	0	0	1
0	0	1	0	1
1	0	1	0	1
0	1	1	0	0
1	1	1	0	0
0	0	0	1	1
1	0	0	1	1
0	1	0	1	0
1	1	0	1	1
0	0	1	1	1
1	0	1	1	0
0	1	1	1	1
1	1	1	1	0

2. Based on the boolean function, fill in the points on the map karnaugh of the following!

		AB			
		00	01	11	10
CD	00	1	0	1	0
	01	1	0	1	1
	11	1	1	0	0
	10	1	0	0	1

3. Simplify boolean functions : **F = A'B' + A'CD + ABC' + AC'D + CD'**
4. Create logic gates based on your boolean function! Picture in the box below!