

Name:

Number:

Quiz 1: Friday, 12:15-12:35 (08.11.2019)

Experiment 1 – Implementation of Boolean Functions and Gate-Level Minimization in VHDL

Q) For the function given in sum-of-minterms form,

$$F(A, B, C, D) = \Sigma(1, 4, 5, 7, 8, 10, 13, 15)$$

- 1) Complete the truth table for all possible inputs and corresponding outputs.
- 2) Complete the Karnaugh map according to truth table/minterms. (Complete the necessary names and numbers for rows and columns.)
- 3) Using K-Map for F, find the simplified expression for the output.

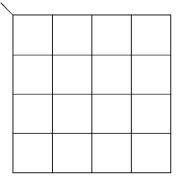
Α	В	С	D	Output (F)

Т.		
$\mathbf{F} =$		

4) Simplify the same function with don't care conditions,

$$d(A, B, C, D) = \Sigma(0, 2)$$

using the K-Map and find the simplest expression for F.



\mathbf{F} —			
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