

Discrete mathematics - Chapter Boolean Algebra practical work

Dr. Anh Tuan GIANG
January 18, 2019

ATTENTIONS

- Practical work duration: *13:30 - 16:00*.
- Using your own laptop to complete the code, then writing down your solution to paper with your full name, student ID and your signature. Submit your paper work to teacher before getting out of the class.

Computer Projects: write programs with these inputs and outputs.

1 PROBLEM 1

Construct a table listing the set of values of all 256 Boolean functions of degree three.

2 PROBLEM 2

Given the values of a Boolean function in n variables, where n is a positive integer, construct the sum-of-products expansion of this function.

3 PROBLEM 3

Given the table of values of a Boolean function of degree three, construct its K -map.

4 PROBLEM 4

Given a threshold value and a set of weights for a threshold gate and the values of the n Boolean variables in the input, determine the output of this gate.

5 PROBLEM 5

Given the table of values of a Boolean function, express this function using only the operators $+$ (the sum) and $^{\bar{\quad}}$ (the complement).