

University of New Brunswick

Computer Science

CS3853: Computer Architecture and Organization

Instructor: Joannah Nanjekye, jnanjeky@unb.ca

Due Date: July 31, 2024 — 11:59 PM

**ASSIGNMENT 2**

**Submission instructions:**

- Submit a pdf file to the Desire2Learn dropbox

**Problem 1.** Find the respective expressions for following Boolean functions using Karnaugh maps:

- $F(A,B,C) = \sum m(0, 1, 2, 3, 4, 6)$
- $F(A,B,C) = \sum m(0, 4, 6, 7)$
- $F(A, B, C, D) = \sum m(0, 1, 2, 5, 6, 7, 8, 10, 13, 15)$
- $F(w_1, w_2, w_3, w_4) = \prod m(0, 2, 3, 8, 9, 11, 15) + \sum d(4,5,6)$

**Problem 2.** Find the respective expressions for following Boolean functions using the Quine-McCluskey tabular algorithm:

- $F(A, B, C) = \sum m(0, 1, 2, 3, 4, 6)$
- $F(A,B,C,D,E) = \sum m(0,1,2, 3, 4, 6,12,14,15,16,17,18,20,24,28,30,31)$
- $F(A,B,C,D,E) = \sum m(3,5,6,9,10,11,13,19,21,22,23,25,26,27,29)$