EE 2000 Logic Circuit Design
Semester B 2022/23

Assignment 1

The solutions must be handwritten (20% deduction if not), scanned and uploaded to CANVAS by 23:59 hours, Feb 10, 2023. Please do not use iPad to write the solution – treat this as practice for your examination and write on paper. **Please write your name and student No on the top of each answer sheet.**

1. Simplify the following logic expression using Boolean algebra. (15 marks)

$F = (D + C(AB)')'((AB)'(C + D)')'$

2. Use K-map to find all of the minimum SOP expressions and all of the minimum POS expressions of the following function. If there is more than one solution, label the solutions f_1, f_2,…

$$f(w, x, y, z) = \Sigma m(4,6,9,10,11,13) + \Sigma d(2,12,15)$$ (41 marks)

3. Use Quine-McCluskey method to find all of the minimum SOP expressions of the following function. If there is more than one solution, label the solutions f_1, f_2,…

$f(w, x, y, z) = \Sigma m(5, 7, 9, 11, 13, 14) + \Sigma d(2, 6, 10, 12, 15)$ (44 marks)