

Time: 20 Minutes

Marks: 15

Name:

Student ID:

Please answer all the following questions:

Q1. Implement the logic circuit to add three binary digits i.e. 0, 1, and 1 using half-adders.

5

Q2. Implement the following logic circuits using **NAND** gate **only**.

10

(a) $F = (A \oplus B)C + AB$

(b) $F = AB + C$



