

EHB205E Introduction to Logic Design

Quiz 2

Duration: 45 Minutes

Grading: 1) 40%, 2) 60%,

Quiz is in closed-notes and closed-books format

For your answers please use the space provided in the exam sheet

GOOD LUCK!

1. Implement a 4-variable Boolean function $f(x_1, x_2, x_3, x_4) = \sum(2,4,5,7,8,9,11,13,15)$ using a **single 4-to-1 multiplexer** and minimal number of **two-input NOR gates**. Use x_1 and x_2 as select input lines in the multiplexer. Use only variables x_1, x_2, x_3, x_4 as inputs (**not their negated forms**).

2. Consider a sequential circuit shown below. It has three input A, B, and CLK and two outputs X and Y. **Obtain its truth table, and Boolean expressions** for X and Y.

