CS3375: Computer Architecture
Spring 2020

Review #6 Solution

- Full name only: _____
- Release date: Mar 30th, 2020 (Monday)
- Due date: **Mar 30th, 2020 (Monday) before midnight**
- Total 5 points

1. In the datapath, there are two functional units in terms of combinational (elements that operate on data values) and sequential (elements that contain state or internal storage). In the combinational, the outputs depend only on the [?]. However, in the sequential, the output depends on both their [?] and [?].

[2 pts]

- Current inputs
- Inputs
- the contents of internal state

2. The performance of a machine is determined by instruction count (IC), clock cycles per instruction (CPI), and clock cycle time. Here, IC is determined by compiler and the [?]. CPI and the clock cycle time are determined by the implementation of the hardware.

[1 pt]

- Instruction Set Architecture

3. In a single cycle data path, every instruction begins on one clock edge and completes execution on the next clock edge. So the CPI is [?].

[1 pt]

- CPI = 1

4. [True or False]: In `beq $r1, $r2, offset`, the values of registers `r1` and `r2` are compared by using subtract operation.

[1 pt]

- True