Name: _____ Box: _____ Date: _____

HW12

(10 points) Describe the effect that a single stuck-at-0 fault (i.e. regardless of what it should be, the signal is always 0) would have for the signals shown below, in the single-cycle datapath in Figure 4.17, on page 265. Note that the ALUOp signal is two bits in size, LSB and MSB refer to the least-significant and most-significant respectively. Which instructions if any, will not work correctly? Explain why.

1. RegWrite = 0

2. ALUOp (LSB) = 0

3. ALUOp (MSB) = 0

4. Branch = 0

5. MemRead = 0

6. MemWrite = 0

Datapath for reference: