Homework 9

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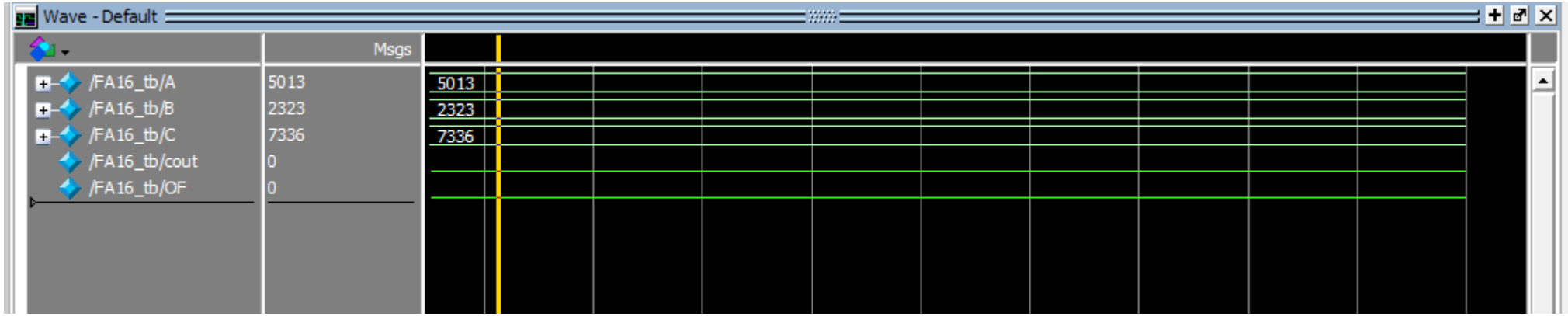
Problem 2 Test Bench Wave Form



Problem 3

- Synchronous
  - Control
  - W Register
  - 16 8-bit registers
  - PC
- Combinatorial
  - Instruction Memory
  - Instruction Register
  - ALU
  - Next Addr

Problem 4

```
Info: 332140 No Setup paths to report
Info: 332140 No Hold paths to report
Info: 332140 No Recovery paths to report
Info: 332140 No Removal paths to report
Info: 332140 No Minimum Pulse Width paths to report
Info: 332102 Design is not fully constrained for setup requirements
Info: 332102 Design is not fully constrained for hold requirements
Info:        Quartus Prime Timing Analyzer was successful. 0 errors, 6 warnings
Info: 293000 Quartus Prime Full Compilation was successful. 0 errors, 20 warnings
```

Problem 5

```
332140 No Hold paths to report
332140 No Recovery paths to report
332140 No Removal paths to report
332148 Timing requirements not met
332146 Worst-case minimum pulse width slack is -3.000
332102 Design is not fully constrained for setup requirements
332102 Design is not fully constrained for hold requirements
       Quartus Prime Timing Analyzer was successful. 0 errors, 6 warnings
293000 Quartus Prime Full Compilation was successful. 0 errors, 15 warnings
```