

16.317: Microprocessor Systems Design I

Fall 2012

Lecture 7: Key Questions

September 19, 2012

1. Describe the 80386DX flags.
2. Describe the operation of the ADD, ADC, and INC instructions.
3. Describe the operation of the SUB, SBB, DEC, and NEG instructions.

4. Given the following initial state:

- $AX = 1234H$
- $BL = ABH$
- Memory location $SUM = 00CDH$

Show the results of each step of the following instruction sequence. Be sure to track the carry flag throughout the sequence:

```
ADD AX, [SUM]
ADC BL, 05H
NEG BL
SUB AX, 12H
INC WORD PTR [SUM]
```

5. Describe the operation of the MUL and IMUL operations.

6. Describe the operation of the DIV and IDIV operations.