

16.317: Microprocessor Systems Design I

Fall 2012

Lecture 8: Key Questions

September 21, 2012

1. Explain the general operation of the AND, OR, XOR, and NOT instructions.

2. **Example:** Show the state of AL after each instruction in the following sequence:

```
MOV AL, 55H
AND AL, 1FH
OR AL, C0H
XOR AL, 0FH
NOT AL
```

3. Explain the operation of shift instructions. What is the difference between SHR and SAR?

4. **Example:** Given AL = 15H, CL = 03H, and CF = 0, show the state of AL and CF after each instruction in the sequence below:

```
SHL AL, 1  
SHR AL, CL  
SAL AL, 5  
SAR AL, 2
```