16.317: Microprocessor Systems Design I

Fall 2015

Lecture 9: Key Questions
September 23, 2015

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