16.317: Microprocessor Systems Design I

Spring 2015

Lecture 7: Key Questions February 9, 2015

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

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

- 3. **Example:** Given EAX = 00000005h and EBX = 0000FF02h, what are the results of the following instructions? Assume each instruction starts with the values shown above in EAX and EBX.
- a. MUL BL

b. MUL BH

c. IMUL BH

- d. DIV BL
- e. DIV BH

f. IDIV BH

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

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