

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

- ```
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?