EECE.3170: Microprocessor Systems Design I
Fall 2016

Lecture 6: Key Questions
September 16, 2016

1. (Review) Describe the operation of the MOVSX/MOVZX instructions.

2. Assume: AX = 0x0100, DX = 0x8100, (0x100) = 0x00, (0x101) = 0xFF. What are the results of the following instructions?
a. MOVSX EBX, AX

b. MOVSX EBX, DX

c. MOVZX EBX, DX

d. MOVSX EBX, BYTE PTR [0x100]

e. MOVSX EBX, WORD PTR [0x100]

3. Explain the operation of the XCHG instruction.

4. Explain the operation of the LEA instruction.

5. **Example:** Given the initial memory state below:

	Lo			Hi
0x528000	50	88	31	A3
0x528004	B2	FF	0F	7D
0x528008	07	D0	BE	22
0x52800C	11	96	00	14

Show the results of the following short instruction sequence.

```
MOV     EAX, 0x528000
MOV     EBX, [EAX+2]
XCHG    BL, BH
LEA     EDX, [EAX+8]
MOV     ECX, [EDX-3]
```