16.317: Microprocessor Systems Design I

Fall 2014

Lecture 9: Key Questions
September 22, 2014

1. Describe the operation of the compare instruction.

2. Complete the following table that describes the different x86 condition codes.

Mnemonic (cc)	Condition tested	Status flag setting for true condition
O		
NO		
B, NAE, C		
NB, AE, NC		
S		
NS		
P, PE		
NP, PO		
E, Z		
NE, NZ		
BE, NA		
NBE, A		
L, NGE		
NL, GE		
LE, NG		
NLE, G		

3. Describe the operation of the conditional move instruction.

4. Describe the operation of the SETcc instruction. How can this instruction be used?

5. **Example:** Show the results of the following instructions, assuming that (100H) = 0001H, (102H) = 0003H, (104H) = 1011H, (106H) = 1011H, (108H) = ABCDH, (10AH) = DCBAH

   What complex condition does this sequence test?

```
MOV     AX, [100H]
CMP     AX, [102H]
SETLE   BL
MOV     AX, [104H]
CMP     AX, [106H]
SETE    BH
AND     BL, BH
MOV     AX, [108H]
CMP     AX, [10AH]
SETNE   BH
OR      BL, BH
```