Quiz 1 ***(CSE331L.1 – Asif Ahmed Neloy\_Fall’20)***

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*Time 20 minutes, Marks 10 (You need to answer all questions).*

1. **Explain DAA and write the asm code using the following example –**

**AL 27H and AL 35H**

**Ans:**

DAA means Decimal Adjust After BCD Addition. Basically, what it does it makes sure the addition of two packed BCD numbers comes out as a ‘legal’ BCD number.

It does the above through:  
 a. if lower hex digit of AL is greater than 9 or AF is set to 1 then 06H is added to AL.

b. if higher hex digit of AL is greater than 9 or CF is set to 1 then 60H is added to AL

; if AL 27h, BL 73h

ADD AL, BL; Here 27h+73h, so 9A, Here A> 9, so 06h is added to AL

DAA

; if AL 35h, BL 73h

ADD AL, BL; Here 35h+73h, so A8, Here A> 9, so 60h is added to AL

DAA

**2.** Explain the “**CMP**” and “**Test**” instruction from the following example. Also, write which one of these affect the flag register and why.

**CMP AL, 000h**

**TEST AL, 001h**

**Ans:**

CMP compares a source with destination. The sources or destination can be number, register or memory location. Both the source and destination cannot be memory location. It works by subtracting the source from the destination, and they are not changed, but the flags are used to indicate the result.

TEST ANDs the source and destination. Like the CMP the source and destination can be numbers, registers, or memory location, but the source and destination both cannot be memory location.

Both updates the flags, but not the operands.

; if AL 001h

CMP AL, 000h; compares AL with 000, then CF=1, ZF=0, SF=1

TEST AL, 001h; compares AL with 001, then PF, SF, ZF is updated

**End**