COE 205 Term 032
Computer Organization and Assembly Language Programming

Home Work # 2

Question 1:

Mention the different addressing modes of the 8086 processor. Then show how the physical address is calculated in each case.

Question 2:

Let :

AX = 00FFH BX = 0010H CX= FFFEH DX = 1000H
SI = FFBFH DI = 0002H BP = 0200H SP = 0300H
DS = BCFEH ES = 3000H CS = EC4FH SS = 4000H
IP = 24FCH

1 - Suppose the following directives are declared in the data segment. Variables are stored in the order they are given in the data segment starting at offset 4000H. Show the logical and Physical addresses of the allocated memory and the corresponding hexadecimal content.

```
.DATA
    X DB 125, -18
    DW 0AAFEH
    T EQU 'KFUPM'
    Text DB 'COE 205','$'
```

Variable	Effective Address	Content	Variable	Effective Address	Content

2 - Determine the physical starting and ending addresses of the code segment, the data segment and stack segments.

3 - Determine the address of the next instruction to be fetched from memory.

4 - Write the result of each of the following operations and show their effects on the flags.

```
MOV AX, Word Ptr X + 2
ADD AX, BX

MOV AL, Byte Ptr X + 1
ADD AL, BL

MOV AX, Word Ptr X + 2
SUB AX, BX
INC BX
INC AX
DEC BX
```

Question 3:

Write a program that reads two decimal numbers from the keyboard. Each number should have 2 digits. The program adds the two numbers and displays the result on the screen. Consider each number to be stored in a word sized location.