COE 205, Term 101

Computer Organization & Assembly Programming

HW# 2

# Show the content of the memory allocated based on the following directives, assuming that the first byte is allocated at address 0000H in the data segment.

*I DB -1, 255*

*DW 0FAh*

*DD -250*

*J DB `24`*

*K EQU 24*

*DW `24`*

*DW offset J*

*DB 2 dup (2,4,2 dup(`24`))*

# Suppose that you have the following initial content of the registers and memory locations, assuming that variables i and j are defined as byte variables:

AX=F2E9H BX=0002H CX=08A0H DX=F1E0H

SI =0016H DI =0010H BP=C2E1H SP =1330H

DS =1EC0H ES =2FF4H CS=3FDFH SS =5000H

IP =E731H

Memory Address (hex) Contents (hex)

2000: i 0010 1E

0011 3F

0012 BC

j 0013 58

0014 30

0015 8A

0016 D3

0017 F7

0018 00

## Show the contents of the registers and memory locations modified after the execution of each of the following instructions. Use the initial content of the registers and memory locations for the execution of each instruction. Furthermore, specify the addressing modes of the source and destination operands in each instruction.

### ADD AX, [BX+16]

### MOV BH, Byte PTR i+4

### ADD CL, [SI-2]

### MOV BYTE PTR [BX+DI+1], -1

### MOV Word PTR i, offset j

### MOV DX, [BX][SI]

## Determine the starting and ending addresses of the code segment. What is the physical address of the next instruction to be fetched from memory.

## Determine the physical address of the source operand in the following instruction:

MOV AX, [BX+DI+1]

## Show the contents of AX, BX, and the flags (O,S,Z,A,P, and C) at the end of executing the ADD instruction

MOX AX, ABCEH

MOV BX, 4816H

ADD BX, AX

## Show the contents of AX, BX, and the flags (O,S,Z,A,P, and C) at the end of executing the SUB instruction

MOX AX, 6A57H

MOV BX, 74DAH

SUB AX, BX