PSG COLLEGE OF TECHNOLOGY, COIMBATORE - 641 004

Department of Computer Applications

MCA 2

18MX25 - Microprocessors and Embedded Systems

Open Book Tutorial

1. What is byte swapping?

2. How pipelining is implemented in X86?

3. Identify the addressing modes for the following. A) MOV AH, 47H B) MOV AX,[BX] C) MOV AH,[1234H].

4. Which signals of X86 are used to select the memory and how?

5. What will be the length of the instruction MOV CX,[08ABH]?

6. What is the purpose of queue in BIU of 8086 microprocessor?

7. Write a 8086 program to fill 1000D byte block of memory in extra segment beginning at address BLOCK with data byte 20H.

8. a)What is a machine code? Generate machine code for the following instruction. (5)

   MOV BX, [SI + DI+65h]

9. Suppose you had a different processor that was designed and operated similarly to the 8086/8088 architecture with the following differences: All of the registers are 8-bit registers, and the physical address (PA) is a 10-bit number. Given what you know about the 8086/8088 architecture, what would be the size of the total addressing space on this new device?

10. Given what you know about 8086/8088 addressing, what would be the size of the "offset window" at each segment location through which you could address memory?
11. Write a program to add a data byte located at offset 0500H in 2000H segment to another data byte available at 0600H in the same segment and store the result at 0700H in the same segment.
12. Write a mnemonics for the instruction to load register DI with the base address of a data table starting at location TABLE.

13. Write 8086 program to fill the 1000D –byte block of memory in extra segment beginning at address BLOCK with the data byte 20H
14. Identify the addressing mode for each of the following instructions:
    a) MOV AH,15H
    b) MOV AH, [BP +2]
    c) MOV AH, [BP +SI]
    d) MOV AH, arr[BX]
15. Write the physical memory accessed by the following instructions if BP=2C30H, CS= B3FFH DS=E000, SS=5D27H and ES=52B9H
    a) MOV[BP], AL
    b) Logical address D470H in ES
    c) Logical address 2D90H in SS
    d) Logical address 103FH in DS