Microprocessors

2007 November

Technology BCA

Semester 3

University Exam

Mangalore University

8

Credit Based Third Semester BCA Degree Examination
October / November 2007
MICROPROCESSORS

Time : 3 Hours

Max.Marks: 80

PART A

Note: Answer any TEN questions

1. a) Explain the difference between MOV BX, DATA instruction and MOV BX, OFFSET DATA instruction.

   b) What is wrong with the following instruction? Also identify the addressing mode.
   MOV BL, CX

   c) What is the difference between an AT and XT computer system?

   d) Given DS : 1000h, ARRAY= 1100h, BX = 0300h, SI = 0200h. Determine the address accessed by the following instruction.
   MOV ARRAY[BX + SI], DX.

   e) What is the purpose of IP register ?

   f) Choose an instruction that requires word ptr?

   g) Differentiate between NOT BX and NEG BX.

   h) Describe how LDS BX, [5300h] instruction operates?

   i) Which registers move onto the stack with PUSHA instruction?

   j) Which type of JMP instruction (far, short, near) assembler for the following:
   i)   If the distance is 0210h bytes.
   ii) If the distance is 0020h bytes.
   iii) If the distance is 10000h bytes.

   k) How does the IRET instruction differs from RET instruction?

   l) How many different interrupt types are available in the microprocessor?(2x10=20)

UNIT - I

2. a) Explain the different types of computer formats.

   b) With neat diagram explain the bus structure of a computer system.

   c) What is the purpose of segment register in real mode operation?   (5+5+5)

OF

3. a) Briefly explain the block diagram of a microprocessor based computer system.

   b) Write a note on word sized data format.

   c) Draw the diagram of PSW of 8086 and explain all conditional flags of 8086.

   d) Add any two 16 bit numbers and discuss the status of flags that are affected and reflected in the results.   (5+3+4+3)

UNIT - II

4. a) Define addressing modes. Explain with example any four types of data addressing modes.

    b) Discuss stack memory addressing modes.

    (10+5)

OR

5. a) What are the three program memory addressing modes?

    b) Differentiate between intersegment and intrasegment jump.

    c) What is displacement ? How does it determine the memory address in a MOV[2000h], al instruction? What do the symbol [ ] indicate?

    d) Explain PUSHA and POPF instruction.

    (5+2+3+5)

UNIT - III

6. a) Explain in detail the different types of shift instructions of 8086 with an example.

    b) Explain DAA instructions. What is its purpose?

    c) Write a program to add 2 BCD numbers and store the result in BX register.

    d) Explain the different forms of IN instructions.

    (4+3+4+4)

OR

7. a) How do you compare two bytes of data in 8086? Explain with an example.

    b) Write a program to generate N Fibonacci numbers.

    c) Given al= 48h. What will be the value of al after the execution of the following instruction.

    i.   SAR al, 01h

    ii. RCL al, 01h

    iii. ROR al, 01h

    (4+5+6)

UNIT - IV

8. a) Explain different CALL instructions of 8086 with an example.

    b) Explain the following:

    i.   WAIT   ii. NOP   iii. LOCK PREFIX

    (3+6+6)

    c) Discuss INT, INTQ, and INT 3

OR

9. a) Explain the following:

    i.   ESC   ii. BOUND   iii. ENTER and LEAVE

    b) Define interrupts, Interrupt Vector and Interrupt instructions. Discuss on INT3

    c) What is a procedure? How do you pass parameters to a procedure through stack? Explain.

    (4+5+6)

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