XX–2004   Seat No._____

Second Year B. C. A. Examination
March / April – 2003
Modern Microprocessor & Assembly Language
(BCA - 204)

Time :   Hours]   [Total Marks :   **50**

1   Answer the following : (any **ten**)   **10**

   (i)   Differentiate between Compiles and Assembler.

   (ii)   Find out starting and ending addresses, if *DS* register contains *IA30H* in real mode addressing scheme.

   (iii) What is *END. ENDP* and *ENDS* directives.

   (iv)   Explain function of *BHE* pin of 8086 microprocessor.

   (v)   What is *OAH* function of *INT* 21*H* instruction ?

   (vi)   Write the width of data and address bus of 8086 microprocessor.

   (vii) Write down an instruction to mask upper four bits of *BH* register.

   (viii) Find out maximum number of memory locations that can be addressed by microprocessor with 32-address lines.

   (ix)   What is *ISA* and *EISA* bus ?

   (x)   List various *MOV* instructions, which are not supported by 8086 microprocessor.

   (xi)   What is *SHL* instruction ?

   (xii) Write down the content of *AX* register for the following instructions :

   MOV   AX, 08H

   XOR   AX, AX

2   Answer the following : (any **five**)   **10**

   (i)   List and explain all the segment registers available in 8086 through Pentium pro processor.

(ii) Explain various types of Read Only Memory.

(iii) Differentiate between *RISC* and *GISC* architecture

(iv) What is encoder ? Explain priority encoder with logical diagram and function table.

(v) Draw bus structure of 8085 microprocessor and explain all the system buses.

(vi) Differentiate between program visible and program invisible register. Give example of both.

(vii) Explain memory map of 6*HKB RAM* With necessary diagram, considering 2*H*-bit address line and 16-bit data lines.

3 Do as directed :   **10**
(i) Explain descriptor of 80286 and above microprocessor and segment register in protected mode memory addressing scheme.

(ii) Explain internal block diagram of 8086 microprocessor with necessary diagram.

OR

(i) Explain instruction pipeline with diagram. List and explain all the instruction pipeline hazards and explain any one solution.

(ii) Draw the pin-in and pin-out diagram for 8086 microprocessor and explain function of minimum mode pins.

4 Do as directed : (any **five**)   **10**
(i) Explain following directive with example :

(a) Title

(b) .Model.

(ii) Explain *CMP* instruction with example. Also write how it affects various flags.

(iii) Differentiate between macro and procedure.

(iv) Write an assembly language program to clear all general purpose register of 8086 microprocessor.

(v) Discuss effect on stack when CALL and RET are executed with necessary diagram. List any four conditional call instructions.

(vi) Discuss following addressing modes :

    (a) Immediate

    (b) Register Indirect.

(vii) Find out value of N for the following module, if frequency of the system is 8 MHz and required time delay is 3 msec.

```
        MOV     CX, N
        MOV     BX, 03
B-10 MOV        AX, CX
        NOP
        NOP
        NOP
        NOP
        LOOP    B-10
```

5   Write an assembly language program for the following :   **10**
(any **two**)

    (i) To find minimum from an array of five numbers, also print the output.

    (ii) To find whether given string is palindrome or not.

    (iii) To subtract two 16-bit numbers using macro.

    (iv) To find factorial of given numbers using procedure.

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