

22415

22232

3 Hours / 70 Marks

Seat No.

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- Instructions :**
- (1) All Questions are *compulsory*.
 - (2) Illustrate your answers with neat sketches wherever necessary.
 - (3) Figures to the right indicate full marks.
 - (4) Assume suitable data, if necessary.

Marks

1. Attempt any FIVE of the following :

10

- (a) State the functions of following pins of 8086 Microprocessor :
 - (i) ALE
 - (ii) M/\overline{IO}
- (b) State the function of STC and CMC Instruction of 8086.
- (c) List the program development steps for Assembly Language Programming.
- (d) Define MACRO with its syntax.
- (e) Write an ALP to Add two 16 bit numbers.
- (f) State two examples of each, Immediate and based indexed Addressing modes.
- (g) State the use of OF and AF Flags in 8086.

2. Attempt any THREE of the following :

12

- (a) Differentiate between NEAR and FAR CALLS.
- (b) Explain the concept of memory segmentation in 8086.
- (c) State the Assembler Directives used in 8086 and describe the function of any two.



- (d) Identify the Addressing modes for the following instructions :
- (i) MOV CL, 34 H
 - (ii) MOV BX, [4100 H]
 - (iii) MOV DS, AX
 - (iv) MOV AX, [SI + BX + 04]

3. Attempt any THREE of the following : 12

- (a) Explain the concept of pipelining in 8086 microprocessor with diagram.
- (b) Write an ALP to perform block transfer operation of 10 numbers.
- (c) Write an ALP to subtract two BCD number's.
- (d) Compare procedure and macros (4 points).

4. Attempt any THREE of the following : 12

- (a) Differentiate between minimum mode and maximum of 8086 microprocessor.
- (b) Write an ALP for sum of series of 05 number's.
- (c) Write an ALP to find Largest number from array of 10 number's.
- (d) Describe re-entrant and Recursive procedure with diagram.
- (e) Explain MACRO with suitable example. List four advantages of it.

5. Attempt any TWO of the following : 12

- (a) Define logical and effective address. Describe Physical address generation in 8086. If CS = 2135 H and IP = 3478H, calculate Physical Address.
- (b) Explain the following assembler directives :
 - (i) DB (ii) DW (iii) EQU (iv) DUP (v) SEGMENT (vi) END
- (c) Explain with suitable example the Instruction given below :
 - (i) DAA (ii) AAM

6. Attempt any TWO of the following :**12**

- (a) Write an appropriate 8086 instruction to perform following operation :
- (i) Rotate the contents of BX Register towards right by 4 bits.
 - (ii) Rotate the contents of AX towards left by 2 bits.
 - (iii) Add 100 H to the contents of AX Register.
 - (iv) Transfer 1234 H to DX Register.
 - (v) Multiply AL by 08 H.
 - (vi) Signed division of BL and AL.
- (b) Explain Addressing modes of 8086 with suitable example.
- (c) Write an ALP to transfer 10 bytes of data from one memory location to another, also draw the flow chart of the same.
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