22232

3 Hours / 70 Marks Seat No. | | | | | | | | |

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.