17431

11819

3 Hours / 100 Marks Seat No. | | | | | | | | |

Instructions : (1) All Questions are *compulsory.*

(2) Answer each next main Question on a new page.

(3) Illustrate your answers with neat sketches wherever necessary.

(4) Figures to the right indicate full marks.

(5) Assume suitable data, if necessary.

(6) Mobile Phone, Pager and any other Electronic Communication devices are not permissible in Examination Hall.

Marks

1. (A) Attempt any SIX of the following : **12**

(a) List any four salient features of 8085 microprocessor.

(b) State the functions of following pins of 8086 microprocessor :

(i) ALE

(ii) M/$\overline{IO}$

(c) State two examples of each, immediate and based indexed addressing modes.

(d) Define the following terms :

(i) Algorithm

(ii) Flow chart

(e) Draw the flag register format of 8085 microprocessor.

(f) Describe the functions of General purpose registers of 8086 microprocessor.

(g) Write any two differences between NEAR and FAR procedure.

(h) Write assembly language instructions of 8086 microprocessor for –

(i) Rotate the contents of BX register by 4

(ii) Transfer 1234H to DS register.

(B) Attempt any TWO of the following : **8**

(a) State the functions of following program development tools :'

(i) Editor

(ii) Assembler

(b) Explain the following assembler directives :

(i) DW

(ii) EQU

(iii) SEGMENT

(iv) END

(c) Explain re-entrant procedures with suitable example.

2. Attempt any FOUR of the following : **16**

(a) State the function of following pins of 8085 microprocessor :

(i) READY

(ii) HOLD

(iii) SID

(iv) $\overline{RD}$

(b) Draw a neat labelled architecture of 8086 microprocessor.

(c) Describe Physical Address generation in 8086. If CS = 2135 H and IP = 3478 H. Calculate Physical Address.

(d) Explain the function of stack pointer and program counter of 8085 microprocessor.

(e) Explain any four string instructions with suitable example.

(f) Compare 8085 and 8086 microprocessor with respect to

(i) Number of data lines

(ii) Number of address lines

(iii) Registers

(iv) Pipelining

3. Attempt any FOUR of the following : 16

(a) Explain DAA instruction with suitable example.

(b) Explain the concept of memory segmentation in 8086.

(c) Differentiate between minimum mode and maximum mode of 8086 microprocessor. (4 points)

(d) Explain four rotate instructions with their syntax, operation and example.

(e) Write an assembly language program to find largest number from array of 10 numbers.

(f) Describe the concept of pipelining in 8086 microprocessor.

4. Attempt any FOUR of the following : 16

(a) Explain the following instructions with suitable examples :

(i) ADC

(ii) XCHG

(iii) MUL

(iv) AND

(b) Identify addressing modes of following instructions :

(i) ADD CX, DX

(ii) MOV BX, 1378H

(iii) MOV CX, [BP][SI]

(iv) MOV [4321H], CL

(c) Write an assembly language programme to perform addition of two 16-bit numbers.

(d) Write an assembly language program to sort an array of 10 numbers in ascending order.

(e) Write an assembly language program to multiply two 16-bit unsigned numbers.

(f) Explain MACRO with suitable example. List four advantages of it.

5. Attempt any FOUR of the following : **16**

(a) Write an assembly language program to find length of a string.

(b) Write an assembly language program to multiply two 8-bit unsigned numbers.

(c) Write an assembly language program to add two 8-bit BCD numbers.

(d) Describe any four arithmetic instructions with example.

(e) Differentiate between procedure and Macro. (any 4 points)

(f) Write an assembly language program for sum of series of 05 numbers using procedure.

6. Attempt any TWO of the following : **16**

(a) Describe minimum mode operation of 8086 microprocessor with neat diagram.

(b) Write an assembly language program to find reverse order of a given string. Also, write algorithm and draw flowchart.

(c) Explain with suitable example how parameters are passed on the stack. Also, list out different parameter passing ways in procedure.
