

17431

21819

3 Hours / 100 Marks

Seat No.

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- 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) Use of Non-programmable Electronic Pocket Calculator is permissible.
 - (7) 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**
- (i) List the general purpose register in 8085 micro processor.
 - (ii) State number of data lines and number of address lines used in 8086 microprocessor.
 - (iii) List any four addressing mode of 8086 microprocessor
 - (iv) Define flowchart and algorithm.
 - (v) State the use of following pin of 8085:
 - 1) HOLD
 - 2) ALE
 - (vi) List the names of segment register of 8086.
 - (vii) Give any two difference between NEAR and FAR procedure.

P.T.O.

(viii) Write instruction of 8086 microprocessor to:

- 1) Subtract 50H from the content of AX register.
- 2) Rotate the content of AX towards right by 2 bit position.

b) Attempt any TWO of the following:

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(i) State function of:

- 1) Editor
- 2) Assembler
- 3) Linker
- 4) Debugger

(ii) Describe the function of following directives:

- 1) DD
- 2) ASSUME
- 3) ORG
- 4) INCLUDE

(iii) Write an assembly program using recursive procedure to find factorial of a number.

2. Attempt any FOUR of the following:

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- a) Enlist interrupt pins of 8085 microprocessor with its function.
- b) State any eight features of 8086 microprocessor.
- c) Describe memory segmentation in 8086 microprocessor. Give any two advantages of segmentation.
- d) Draw the detailed architecture of 8085.
- e) Write 8086 instruction for following:
 - (i) Multiply AL by 4 using shift rotation.
 - (ii) Move 1234 H into DS register.
- f) Calculate physical address in following cases:
 - (i) CS = 79 FB H and IP = 8437 H
 - (ii) DS : 1 FABH, BX : 1A77H for MOV AX, (BX)

- 3. Attempt any FOUR of the following:** **16**
- a) Explain any two string instruction with example.
 - b) Draw and explain bus interface unit of 8086 microprocessor.
 - c) Draw the interfacing of 8288 Bus controller with 8086. List and explain interfacing signal.
 - d) Explain function of following instruction with one example.
 - (i) XLAT
 - (ii) LAHF
 - e) Write an assembly language program to find string length of a given string.
 - f) Draw flag register format of 8086. Explain trap and overflow flag.
- 4. Attempt any FOUR of the following:** **16**
- a) Differentiate between following instruction:
 - (i) AAA, AAM
 - (ii) Pop, Pop f
 - (iii) LDS, LES
 - (iv) ROL, RCL
 - b) State the function of process control instruction:
 - (i) STC
 - (ii) CMC
 - (iii) STD
 - (iv) CLD
 - c) Write an assembly language program to mask the lower nibble of 8 bit number.
 - d) Write an assembly language program to transfer block of 10 number from source ie. 2000 H to destination 3000 H (No overlapped block transfer).
 - e) Write an assembly language program to add two 8 bit BCD numbers.
 - f) Write an assembly language program to find largest number among block of data using macro.

- 5. Attempt any FOUR of the following:** **16**
- a) Write an assembly language program to reverse string computer programming for 8086.
 - b) Write an assembly language program to multiply two 16 bit numbers.
 - c) Write an assembly language program to sort an array of 10 numbers in descending order.
 - d) Explain any four rotation instruction with example.
 - e) Explain re-entrant procedure with help of schematic diagram.
 - f) Write differences between procedure and MACRO.
- 6. Attempt any TWO of the following:** **16**
- a) With neat diagram, describe minimum mode operation of 8086. List signals of maximum mode of 8086.
 - b) Write an assembly language program to count even number in an array of five 16-bit number. Also draw the flowchart for the same.
 - c) Write an assembly language program to add series of 5 number i.e. 8 bit using FAR procedure. Also draws the flowchart for the same.
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