

314321

25226

3 Hours / 70 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. **Attempt any FIVE of the following :** **10**
- a) List any four features of 8086 microprocessor.
 - b) Enlist program development steps of writing the program.
 - c) List different group of instructions in instruction set of 8086.
 - d) Describe symbol, variable and constant in 8086.
 - e) Define procedure and write it's syntax.
 - f) State functions of
 - i) $\overline{MN}/\overline{MX}$
 - ii) ALE pins of 8086
 - g) Write ALP for addition of two 8-bit numbers.

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- 2. Attempt any THREE of the following : 12**
- a) Explain physical address generation process with example.
 - b) Explain Assembly Language program development tools.
 - c) Explain any four FLAG manipulation instructions.
 - d) Write ALP to subtract two 8-bit signed numbers.
- 3. Attempt any THREE of the following : 12**
- a) Explain Recursive and re-entrant procedure.
 - b) Write ALP to test 8-bit number is positive or negative.
 - c) Write ALP to find smallest number from array of 10 numbers.
 - d) Compare NEAR and FAR call. (any four points)
- 4. Attempt any THREE of the following : 12**
- a) State functions of following pins of 8086.
 - i) READY
 - ii) $\overline{\text{WR}}$
 - iii) $\text{DT}/\overline{\text{R}}$
 - iv) $\overline{\text{DEN}}$
 - b) Write ALP for division of two 8-bit unsigned numbers.
 - c) Write ALP for sort and array of 10 numbers in Ascending order.
 - d) Define MACRO with example.
 - e) Write ALP to perform block transfer of 10 numbers.
- 5. Attempt any TWO of the following : 12**
- a) Explain concept of memory segmentation in detail.
 - b) Explain the following directives
 - i) PROC
 - ii) INCLUDE
 - iii) MACRO
 - iv) SEGMENT
 - v) EQU
 - vi) DUP

- c) Write assembly language instruction for the following
- i) Multiply AL by BL
 - ii) MOV 1200H in CS
 - iii) Add BX with AX
 - iv) Multiply AX by BL with sign number
 - v) Rotate left by 4 bit through carry AX register
 - vi) Load BP with 0100H

6. Attempt any TWO of the following :

12

- a) List and explain string instructions of 8086.
 - b) Identify addressing modes for following instructions
 - i) MOV AL, 50H
 - ii) MOV AX, [1234H]
 - iii) SUB AX, BX
 - iv) MOV AL, BL
 - v) ADD AL, [BX] [SI]
 - vi) NOP
 - c) Write ALP to reverse a string. Also draw flowchart for same.
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