

314321

24225

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.
(5) 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 salient features of 8086 microprocessor.
 - b) State the function of Assembler directives.
 - c) List addressing mode of 8086 microprocessor (Any four).
 - d) Describe the model of assembly language programming.
 - e) Define procedure and write its syntax.
 - f) State the function of following pins of 8086 microprocessor. :-
 - i) $M / \overline{IO}$
 - ii) $MN / \overline{MX}$
 - g) Write an ALP to add two 8 bit numbers.
- 2. Attempt any THREE of the following :** **12**
- a) Explain the concept of memory segmentation with neat diagram.
 - b) Explain program development steps of 8086 microprocessor.
 - c) Explain any four logical instruction of 8086 microprocessor.
 - d) Write an ALP to add two 8 bit BCD numbers.

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- 3. Attempt any THREE of the following :** **12**
- a) Explain the concept of pipelining of 8086 microprocessor with neat diagram.
 - b) Write an ALP for sum of series of five 8 bit numbers.
 - c) Write an ALP to find largest number in array of 5 elements.
 - d) Compare procedure and Macro (four points)
- 4. Attempt any THREE of the following :** **12**
- a) Differentiate between minimum and maximum mode of 8086. (four points)
 - b) Write an ALP for multiplication of two 8 bit signed numbers.
 - c) Write an ALP to perform block transfer of 10 numbers.
 - d) Describe re-entrant and recursive procedure with example.
 - e) Explain Macro with suitable example.
- 5. Attempt any TWO of the following :** **12**
- a) Define logical and effective address. Describe physical address generation in 8086 microprocessor. If CS = 2135 H and IP = 3478H then calculate physical address.
 - b) Explain following assembler directives :-
 - i) DB
 - ii) DD
 - iii) DUP
 - iv) EQU
 - v) END
 - vi) SEGMENT

- c) Write assembly language instruction of 8086 microprocessor to :-
- i) Multiply AL by 05H
 - ii) Move 1234H in DS register
 - iii) Add AX with BX
 - iv) Signed division of AX by BL
 - v) Rotate the contents of AX towards left by 4 bits through carry.
 - vi) Load SP register with FFOOH.

6. Attempt any TWO of the following :

12

- a) Explain DAA and CMP instruction of 8086.
 - b) Identify addressing modes for the following instructions :-
 - i) Mov AL, 46H
 - ii) Mov BX, [1234H]
 - iii) ADD AX, BX
 - iv) Mov AL, [SI]
 - v) ADD AL, [BX] [SI]
 - vi) Mov AX, 60H [BX] [SI]
 - c) Write an ALP for $Z = (P + Q) * (R + S)$ using macro.
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