

314321

12526

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) 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) List the program development steps.
 - c) State the use of STC and CMC instruction of 8086.
 - d) Write an ALP to add two 8-bit numbers.
 - e) Define procedure and write it's syntax.
 - f) Define Stack Pointer (SP) and Base Pointer (BP) registers of 8086.
 - g) Compare MUL and IMUL instructions of 8086. (Two points)

P.T.O.

2. Attempt any THREE of the following : 12
- Explain memory segmentation in 8086 and list its advantages.
 - Explain assembly language program development tools.
 - Explain with example any four logical instruction of 8086.
 - Write an ALP to count number of 1's in 16-bit number.
3. Attempt any THREE of the following : 12
- Draw and explain the flag register of 8086.
 - Write an ALP to find length of string.
 - Write an ALP to subtract two BCD numbers.
 - Write an assembly language program to solve $P = X^2 + Y^2$ using procedure. (X and Y are 8-bit numbers)
4. Attempt any THREE of the following : 12
- Draw the functional block diagram of 8086 with all labels.
 - Write an ALP to check whether a given 8-bit number is odd or even.
 - Write an ALP to check whether a given 8-bit number is positive or negative.
 - Explain Re-Entrant and Recursive procedure with diagram.
 - Compare procedure and macros. (Four points)
5. Attempt any TWO of the following : 12
- Define Logical and effective address. Describe how 20-bit physical address is generated in 8086. If CS = 15ACH and IP = 8B21H. Calculate the physical address.
 - Explain use of assembler directives :
 - EQU
 - DB
 - DW
 - EVEN
 - SEGMENT
 - ENDS

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[3]

Marks

- c) Write an appropriate 8086 instruction to perform following operation:
- i) Rotate the contents of BX register towards right by 2 bits.
 - ii) Rotate the contents of AX register towards left by 4 bits.
 - iii) Move 3000H in BX register.
 - iv) Compare AX with CX.
 - v) Increment the content of DX by 1.
 - vi) Signed division of BL and AL.

6. Attempt any TWO of the following :

12

- a) Explain any six addressing modes of 8086 with suitable example.
 - b) Explain any four string instructions of 8086 with suitable example.
 - c) Write an ALP to reverse a string. Also draw flowchart for same.
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