

22415

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) State the function of following pins of 8086 microprocessor.
- i) $\overline{\text{ALE}}$
- ii) $\overline{\text{BHE}}$
- b) State the function of assembler in assembler language programming.
- c) List addressing modes of 8086.
- d) Write an ALP to subtract two 8 bit nos.
- e) Define procedure with its syntax.
- f) State the function of DAS instruction of 8086 with syntax.
- g) State the use of CF and AF Flags in 8086.

P.T.O.

- 2. Attempt any THREE of the following :** **12**
- a) Differentiate between NEAR and FAR procedure CALL.
(Write any four points)
 - b) Explain the concept of pipelining in 8086 with its advantages.
 - c) State the function of following assembler directives of 8086 with suitable example.
 - i) segment
 - ii) PROC
 - iii) Ends
 - iv) MACRO
 - d) Write classification of instruction set of 8086. Explain any two data transfer instruction with suitable example.
- 3. Attempt any THREE of the following :** **12**
- a) Draw functional block diagram of 8086 and describe its register organization.
 - b) Write ALP to find the sum of series of 10 number.
 - c) Write ALP to count length of string.
 - d) Explain Macro with syntax and one suitable example.
- 4. Attempt any THREE of the following :** **12**
- a) Differentiate between minimum and maximum mode of 8086 microprocessor. (Write an four valid points)
 - b) Write an ALP to count number of even and odd numbers in array.
 - c) Write ALP to find smallest number from given array of 10 numbers.
 - d) Explain Re-entrant and Recursive procedure with diagram.
 - e) Write an ALP to compare two strings without using string instructions.

5. Attempt any TWO of the following : 12

- a) Explain the physical address generation process in 8086.
Calculate the physical address for given.
- i) DS = 48ADH SI = 138DH
 - ii) CS = 7895H IP = 561EH
- b) List and explain in detail the program development steps in ALP.
- c) Identify the addressing modes for the following instructions.
- i) MOV CL, 34H
 - ii) MOV BX, [4100H]
 - iii) ADD AX, BX
 - iv) MOV AX, [BX+SI + 05H]
 - v) MOV CX, [SI]
 - vi) MOV DX, 1500H

6. Attempt any TWO of the following : 12

- a) Write an ALP to arrange numbers in ascending order in array.
- b) Write appropriate 8086 instruction to perform following operation.
- i) Rotate the contents of DX Register to Right by 2 times with (array).
 - ii) Add 100H to the contents of AX
 - iii) COPY 1250 H to DX Register
 - iv) Multiply the contents of AL by 06 H
 - v) Divide the contents of AL by BL
 - vi) Rotate the contents of AX to Left without (array) 2 times.
- c) Write an ALP for $Z = (P + Q) * (R+S)$ using procedure.
Draw flow chart of the same.
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