17431

15116

3 Hours / 100 Marks Seat No. | | | | | | | | |

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.

Marks

1. Attempt any FIVE of the following : **20**

a) List any eight features of 8085 processor.

b) State the functions of the following pin of 8086 microprocessor

(i) ALE

(ii) $DT / \overline{R}$

(iii) HOLD

(iv) $m / \overline{IO}$

c) Name the different types of jump instructions used in 8086 assembly language program. (any eight)

d) State the steps involved in program development.

e) Write the program structure for writing program in assembly language with suitable comment.

f) Define MACRO. List any four advantages of it.

g) What do you mean by re-entrant procedures ? Write any assembly language program with re-entrant procedure.

Marks

2. Attempt any FOUR of the following : **16**

a) State the function of stock pointer and program counter in 8085 microprocessor.

b) Draw a neat labelled Architectural diagram of 8085 microprocessor.

c) Differentiate between minimum mode and maximum mode of 8086 microprocessor (Eight points).

d) Describe the generation of physical address in 8086. If CS = 2000 H, and IP = 1122 H, calculate the physical address generation.

e) State the functions of –

(i) Editor

(ii) Assembler

f) What are assembler directives ? Explain any two assembler directives.

3. Attempt any FOUR of the following : **16**

a) Draw and explain the interfacing of 8284 clock generator with 8086 microprocessor.

b) What is memory segmentation ? How it is done in 8086 microprocessor ?

c) Identify the addressing modes in following instructions

(i) MUL AL, BL

(ii) MOV AX, 2100 H

(iii) MOV AL, DS : [SI]

(iv) MOV AX, BX.

d) State and explain any four addressing modes of 8086 microprocessor with example.

e) Write an ALP for 8086 to find the largest number in an array. [Assume array size of 10]

f) Write an ALP for 8086 to perform BCD addition of two number [Assume suitable data]

Marks

4. Attempt any FOUR of the following : **16**

a) Draw the architecture of 8086 microprocessor and state the function of BIU.

b) List all the 16 bit registers of 8086 and write their function.

c) Explain Near CALL and Far CALL procedure.

d) Explain the following instructions of 8086

(i) DAA

(ii) XLAT

e) Write an ALP for 8086 to count the number of odd numbers in array. [Assume array size of 20 number]

f) Write an ALP to count the number of '1' in a number stored in accumulator.

5. Attempt any TWO of the following : **16**

a) (i) Draw flag register structure of 8086 and describe operation of each flag.

(ii) What is pipelining ? State its need and how it is done in 8086

b) Write an ALP to sort a array of 10 numbers in Ascending order.

c) Describe with suitable example how a parameter is passed on the stack in 8086 assembly language procedure.

Marks

6. Attempt any FOUR of the following : **16**

a) List the string related instructions of 8086 microprocessor and explain any two instructions.

b) Write the appropriate 8086 instructions to perform the following operation.

(i) Multiply AL register contents by 4 using shift instructions.

(ii) Move 2000 H into CS register.

c) Write an ALP for 8086 to multiply two 16 bit numbers.

d) Write an ALP to transfer a block of 50 numbers from 20000 H to 30000 H.

e) Write an ALP to multiply two 8 bit numbers using NEAR procedure.

f) What are the functions of CALL and RET instructions ? Write the syntax of CALL and RET instructions.