Printed Pages: 2 **NEC503**

Paper Id	1	3	0	5	2	0	**Roll No.**										

B. TECH
(SEM-V) THEORY EXAMINATION 2018-19
MICROPROCESSORS

Time : 3 Hours ***Max. Marks : 100***

Note : *Be precise in your answer. In case of numerical problem assume data wherever not provided*

SECTION – A

1. Attempt all parts of the following questions: **2×10=20**

a) What are interrupts? List the interrupts of 8085.

b) What is memory segmentation?

c) List the function of two DMA signals HOLD and HLDA.

d) What is the difference between Subroutine and Macro?

e) Explain 8086 Flags?

f) List the function of LOCK and BHE pins used in 8086.

g) Explain following instructions with suitable example (i) ROL (ii) SAR used in 8086.

h) What are Assembler directives?

i) Explain Program Counter and Stack Pointer?

j) Write the difference between subroutine and macro.

SECTION B

2. Attempt any three parts of the following questions: **3×10=30**

a) Explain 8253/54 Programmable Interval/timer with its schematic diagram. Also explain its different modes of operation.

b) Describe the various addressing modes used in 8086 also describe with examples how the 20-bit physical address is calculated from the 16-bit logical address?

c) Write an assembly language program to arrange the following numbers in descending order: 23H, 7CH, 52H, BAH, 9AH, 4AH, EAH, CAH, D0H, AFH, If the numbers are stored from memory location 2100H. Store the result at memory location starting from 2300H.

d) Explain the flags of 8085 microprocessor. Give the flag status when following operations are performed. **(i) 51H+A9H (ii) 2EH XOR 5AH (iii) 76H AND A4H (iv) EFH-A9H**

e) Write an assembly language program to convert 51 BCD in binary. Assume that the BCD number is stored in memory location 2100H, and store the result at memory location 2300H.

SECTION C

Attempt any one part of the following question: 1×10=10

3. (a) Draw and explain the Timing diagram of MVI A, A2H..

(b) Explain the operation of the following instructions: -
(i) LDAX (ii) LHLD (iii) ADI (iv) MVI (v) SUI
(vi) XCHG (vii) RAR (viii) HLT (ix) DI (x) DCX

Attempt any one part of the following question: 1×10=10

4. (a) Draw and explain the maximum mode system of 8086 microprocessor.

(b) Write assembly language program for the addition of two 16-bit numbers considering carry. The numbers are stored in the memory starting from 2500H. Store the result of addition and carry from the memory location starting from 2525H.

Attempt any one part of the following question: 1×10=10

5. (a) Draw the interfacing diagram for interfacing 8259 with 8086.

(b) Draw and explain the timing diagram of Opcode fetch machine cycle for 8086 microprocessor.

Attempt any one part of the following question: 1×10=10

6. (a) What is addressing modes? List different addressing modes of 8086 and explain each of them with an example.

(b) Draw the schematic and internal block diagram of 8257 DMA controller. Explain the working of DMA controller with the help of block diagram.

Attempt any one part of the following question: 1×10=10

7. (a) Draw and explain the architecture of 8085 microprocessor.

(b) Draw the interfacing diagram to interface 8086 with 16K*8 memory.