Printed Pages : 3

NEC-409

(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 131409

Roll No.

B. Tech.

(SEM. IV) THEORY EXAMINATION, 2014-15

INTRODUCTION TO MICROPROCESSOR

Time : 3 Hours] [Total Marks : 100

1 Attempt any FOUR questions of the following : 4×5=20

a. Explain the evolution of microprocessor in brief. Determine the result of A after the execution of the following program-

```
MVI A, 13H      ADI 41 H
INR A           ADD A
XRA A
```

b. How instruction cycle, machine cycle and clock cycle are related? Explain them with proper sketches?

c. Write ALP to load A with 40 H & subtract 29 H from it. Multiply the result by 2 & store the result in the Register L.

d. Explain the difference between (1) RAM and ROM (2) SIM and RIM.

e. Explain the Memory mapped I/O and Peripheral Mapped I/O.

2 Attempt any FOUR questions of the following : **4×5=20**

a. List the four operations commonly performed by the MPU.

b. What is flag? Explain each flag of 8085 microprocessor.

c. How many address lines are necessary to address 8 K byte of memory?

d. What is function of accumulator?

e. What is transparent latch, and why it is necessary to use a latch with output device?

f. If the clock frequency is 5 MHZ, how much time is required to execute an instruction of 18-T states?

3 Attempt any two questions of the following : **2×10=20**

a. Explain the interrupts used in 8085 briefly. What is the difference between 8085 & 8086?

b. With a neat diagram describe the internal architecture of 8085. State the function of each block shown.

c. What is the difference between Maximum and Minimum mode of operation in 8086?

4 Attempt any two questions of the following: **2×10=20**

a. Discuss internal block diagram of 8237 and explain the operating mode of 8237 A.

b. Explain the advantages of dividing memory into segments. How is the 20 bit physical address for memory generated? Explain with example.

c. Discuss the following.

1. Instruction cycle and Machine cycle
2. T-states with typical timing diagram.

5 Attempt any TWO questions of the following : **2×10=20**

a. Discuss the various logic devices used in interfacing circuits.

b. Explain the function of the following instructions :
   1. SIM
   2. PUSH
   3. DAA
   4. XCHG
   5. CALL

c. Draw the timing diagram of the following instruction :
   1. ADD B
   2. CALL 2050 H.
