



(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 :  $4 \times 5 = 20$
- 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
  - How instruction cycle, machine cycle and clock cycle are related? Explain them with proper sketches?
  - 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.
  - Explain the difference between (1) RAM and ROM (2) SIM and RIM.
  - Explain the Memory mapped I/O and Peripheral Mapped I/O.

- 2** Attempt any FOUR questions of the following :  $4 \times 5 = 20$
- List the four operations commonly performed by the MPU.
  - What is flag? Explain each flag of 8085 microprocessor.
  - How many address lines are necessary to address 8 K byte of memory?
  - What is function of accumulator?
  - What is transparent latch, and why it is necessary to use a latch with output device?
  - 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 :  $2 \times 10 = 20$
- Explain the interrupts used in 8085 briefly. What is the difference between 8085 & 8086?
  - With a neat diagram describe the internal architecture of 8085. State the function of each block shown.
  - What is the difference between Maximum and Minimum mode of operation in 8086?
- 4** Attempt any two questions of the following:  $2 \times 10 = 20$
- Discuss internal block diagram of 8237 and explain the operating mode of 8237 A.
  - Explain the advantages of dividing memory into segments. How is the 20 bit physical address for memory generated? Explain with example.
  - Discuss the following.
    - Instruction cycle and Machine cycle
    - T-states with typical timing diagram.

- 5 Attempt any TWO questions of the following :  $2 \times 10 = 20$
- 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.

---