

Th3 MICROPROCESSOR AND MICROCONTROLLER

Full Marks: 80

Time- 3 Hrs

Answer any **five** Questions including Q No.1& 2
Figures in the right hand margin indicates marks

1. Answer **All** questions 2 x 10
 - a. Differentiate between microprocessor and microcontroller.
 - b. Determine the total memory accessed by 8085 microprocessor.
 - c. Name different machine cycles of 8085 microprocessor and mention the number of T – states present in each machine cycle.
 - d. Define Stack Pointer (SP) and Program Counter (PC) of 8085 μ P?
 - e. Give 2 examples each of 2 – byte and 3 – byte instructions for 8085 μ P.
 - f. Name the non-maskable and non – vectored hardware interrupts of 8085 μ P.
 - g. Consider the following 8085 program.
MVI A, 25H
RRC
RRC
Find the content of accumulator, A after execution of this program.
 - h. What do @ and # signs indicate in 8051 μ C and where are they used?
 - i. Draw the internal RAM structure of 8051 μ C.
 - j. Show different bit positions of flag register in 8086 μ P.

2. Answer **Any Six** Questions. 6 x 5
 - a. Explain different addressing modes of 8085 μ P with examples.
 - b. Give 2 examples each for the following groups of instruction of 8085 μ P and explain their meaning.
 - i) Data Transfer ii) Arithmetic iii) Logic iv) Branching v) Machine Control
 - c. Draw the timing diagram for the instruction **MVI A, 67H**.
 - d. Explain the different bit positions of flag register in 8085 μ P. Given [A]=**58 H**, what will be content of flag register after execution of the following instruction?
ADI A, BCH
 - e. Explain the bit positions of control word of 8255 PPI for I/O and BSR Mode.
 - f. Differentiate between memory mapped I/O and I/O mapped I/O
 - g. Write an 8051 – assembly level language program to find the multiplication of 8-bit data present in two consecutive memory locations and store the result in next memory location.

- | | | |
|---|--|----|
| 3 | Draw the pin diagram of 8085 μ P and explain each pin briefly. | 10 |
| 4 | Explain the architecture of 8255 PPI with the help of its block diagram. | 10 |
| 5 | Write an 8085 – assembly language program to find the largest number in a given array of 10 numbers. | 10 |
| 6 | Draw the internal architecture of 8086 μ P and explain the function of each block briefly. | 10 |
| 7 | Write short notes (Any TWO).
I. Timer Mode (T_{MOD}) and Timer Control (T_{CON}) registers of 8051 μ C.
II. Direct Memory Access (DMA).
III. Software and Hardware Interrupts of 8085 μ P. | 10 |