

Time for one T-state for 8086 is 320 ns.

MICRO-PROCESSOR & ASSEMBLY LANG. PROG.

Full marks: 70
Time: 3 Hours

AP01 → 78
AP02 → 56
AP03 → 34
AP04 → 12

Answer SIX Questions including Q.No.1 which is compulsory
The figures in the right hand margin indicate marks.

center
↑ above → the

Q1 Answer the following questions: (2 x 10)

- a) What dedicated operations are assigned to the CX, BX, AX? (5)
- b) Show how the double word 12345678H will be stored in memory starting at address A001. (5)
- c) If the current values in CS and IP are 0200 and 01AC respectively. What is the address of the next instruction? (5)
- d) What happens to the value of IP each time the 8086 fetches an instruction? (5)
- e) A data segment is to be located from address A000 to AFFFF, what value must be in to OS? (5)
- f) What is the function of 8259A chip? (5)
- g) How much time is required by 8085 microprocessor to execute the instruction MVI A, 08H? (5)
- h) Under which addressing mode the following two instruction comes. (5)

$2240 \times 10^{-9} s$
 $224 \times 10^{-8} s$
 $224 \times 10^{-6} s$
 $20.0024 ms$

(a) LDAXD - Register indirect
(b) CMA - Inverted
Does 8155 PPI has static RAM? If yes, what is its capacity? (5)
Yes 8155 PPI has 8-bit 256-word static RAM memory.

- i) What is the purpose of a software model for microprocessor? (5)
- j) Describe important feature of 8051 microcontroller. (5)

To generate A/D
Registers, Immediate Direct, Register Indirect, Based, Indexed Based, Indexed Based, Based Indexed with displacement

- Q3 a) Draw the schematic diagram of interfacing 8257 DMA controller to 8085. (5)
- b) Explain the READ & WRITE cycle of 8086 microprocessor (5)

- Q4 a) Explain the organization of 8085 CPU with neat diagram. (5)
- b) Write an assembly language program for 8086 microprocessor to add vectors containing 10 numbers of data. (5)

- Q5 a) Draw the timing diagram for memory write cycle of the 8085 microprocessor. (5)

- b) Write an assembly language program to generate a square wave of 1KHz frequency. (5)

- Q6 a) Explain how does nested CALL routine work. Explain how the stack gets modified to keep track of the nested CALL. (5)

- b) In synchronous data link control (SDLC) explain how loop transmission can be achieved by taking an example of one station? (5)

- Q7 a) Explain the function and use of 8255A PPI. (5)
- b) Describe different types of logic gates with their truth tables (5)

- Q8 Write short notes on any two: (5 x 2)
- a) A/D converter
- b) Interrupt and ISR
- c) Absolute decoding Vs Partial Decoding
- d) Interface of 8155 memory chip

(generating modes)

(AND, OR, NOT, NAND, NOR, XOR, XNOR)