

Tribhuvan University
Institute of Science and Technology
2079
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Bachelor Level / First Year / Second Semester / Science
Computer Science and Information Technology (CSC162)
(Microprocessor)
(NEW COURSE)

Full Marks: 60
Pass Marks: 24
Time: 3 hours.

Candidates are required to give their answers in their own words as far as practicable.
The figures in the margin indicate full marks.

Section A

Long answer questions.

Attempt any TWO questions.

(2×10=20)

1. Explain instruction cycle, machine cycle and T-states. Draw timing diagram of fetch and execute of LDA instruction with brief description. (3 + 7)
2. Draw a well labeled block diagram of 8086 microprocessor. Explain its Register organization. (6 + 4)
3. Explain the working of LHL and DAA instruction of 8085. An array containing 5 elements is stored from memory location 4000h to 4004h; write an assembly language program for 8085 microprocessor to find largest element of array and store in memory location 4005h. (3+7)

Section B

Short answer questions:

Attempt any EIGHT questions:

(8×5=40)

4. What is ALE? Explain the role of ALE in address/data bus De-multiplexing in 8085 with suitable diagram. (1+4)
5. What do you mean by Isolated I/O? Explain basic DMA operation in brief. (2+3)
6. What is flag? Explain all the flags present in 8085 microprocessor. (5)
7. Write an assembly language program for 16 bit microprocessor to count and display number of occurrence of letter 'o' in string "Microprocessor organization". (5)
8. What is Descriptor? Explain the use of descriptor in logical to physical address conversion in 80286 microprocessor. (1+4)
9. What is mean by addressing mode? Explain different addressing modes in 8085 microprocessor. (1 +4)
10. What are various functional units of 80386 microprocessor? Explain function of each unit. (1 + 4)
11. What are different modes of parallel I/O? Differentiate between synchronous serial communication and asynchronous serial communication. (1 +4)
12. Write short notes on : (2×2.5=5)
 - a. RS-232
 - b. Interrupts