TEXAS INTERNATIONAL COLLEGE

MID-TREMINAL EXAM - 2024

Bachelor Level (B.Sc. CSIT) **Semester: 2nd Semester**

Subject: Microprocessor(CSC167)

Full Mark: 60 Time: 3 hours Pass Mark :30

SET A

GROUP A

Attempt any two questions: (2 x 10 = 20)

1. Draw the internal architecture of the 8085 microprocessor and explain each block in detail.
2. Explain LXI and CMP instruction. Write an assembly language program for 8-bit microprocessor to sort an array of size 10 starting from memory location 5000H to 5009H in Ascending order.
3. Explain instruction cycle, machine cycle and T-states. Draw timing diagram of fetch and execute of LDA instruction with brief description.

Group "B"

Attempt any eight questions: (8 x 5 = 40)

1. Define Addressing mode. Explain various types of addressing modes available in 8086 microprocessor with examples.
2. Define microprocessor. Explain various components of microprocessor with necessary figures.
3. Define pipelining. Explain how pipelining is achieved in 8086 microprocessor.
4. Write an assembly language program to find the sum of 10 numbers stored at memory location from C050H. Store the sum at 9000H and carry at 9001H memory locations.
5. What is the use of $AD_7 - AD_0$ in 8085 microprocessor? Explain address de-multiplexing process in 8085 microprocessor with suitable diagram.
6. What is mean by memory interfacing? Interface 4K EPROM and 8K RAM with 8085 microprocessor. (Draw the labeled diagram)
7. What is CALL operation? How does it differ with JUMP operation?
8. Draw a logic diagram showing generation of memory and I/O read/write control signals in 8085 microprocessor.
9. Write short notes on (any two):
   a) Program Counter
   b) Von-Neumann Architecture
   c) Assembler directives

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SET B

GROUP A

Attempt any two questions: (2 x 10 = 20)

1. Draw the internal architecture of the 8086 microprocessor and explain each block in detail.
2. Explain LDAX and XCHG instruction. Write an assembly language program for 8-bit microprocessor to sort an array of size 10 starting from memory location 5000H to 5009H in Descending order.
3. Explain instruction cycle, machine cycle and T-states. Draw timing diagram of IN instruction with brief description.

Group "B"

Attempt any eight questions: (8 x 5 = 40)

1. What is system bus? Explain different types of system bus in detail.
2. Define Addressing mode. Explain various types of addressing modes available in 8085 microprocessor with examples.
3. Differentiate between I/O-mapped I/O and memory-mapped I/O.
4. What is the purpose of DMA transfer. Describe the working mechanism of DMA.
5. Define stack. Explain PUSH and POP operation in 8085 μP with an example.
6. Write an assembly language program to add two 16-bit numbers stored at memory location 2500H and 2502H. And store the result in 2504H and 2505H.
7. What do you mean by flag. Explain various flags available in 8085 microprocessor with an example.
8. What is mean by memory interfacing? Interface 8K EPROM and 4K RAM with 8085 microprocessor. (Draw the labeled diagram)
9. Explain different types of instruction group of 8085 with examples.