

2055  
B.E. (Computer Science and Engineering)  
Fourth Semester  
CS-405: Computer Architecture & Organization

Time allowed: 3 Hours

Max. Marks: 50

**NOTE:** Attempt five questions in all, including Question No. I which is compulsory and selecting two questions from each Section.

x-x-x

- I    a    Discuss basic computer instruction formats. 2
- b    What is a carry look-ahead adder? 2
- c    What is a pipeline hazard? 2
- d    What is hit Ratio? 2
- e    What is Software interrupt? List the Software and Hardware interrupts of 8085 microprocessor. 2

Section A

- II    a    What is bus? Draw the figure to show how functional units are interconnected using a bus and explain it. 5
- b    What is Instruction Cycle? Briefly explain with state diagram. 5
- III   a    Define Addressing mode and explain the different types of basic addressing modes with examples. 7
- b    Compare RISC and CISC Characteristics. 3
- IV    a    Illustrate the binary division process through a numerical example. 6
- b    What is the function of control unit? Compare the Hardwired control unit and Micro Programmed control unit. 4

Section B

- V    a    Explain the following mapping techniques used for cache mapping i) Associative mapping ii) Direct mapping. 5
- b    What do you understand by virtual memory? Explain address mapping using pages. 5
- VI    a    Draw the block diagram of a DMA controller and explain its functioning. 6
- b    Explain the concept of Daisy Chaining Priority with suitable diagram. 4
- VII   a    What is meant by instruction pipeline? Explain four segment Instruction Pipeline. Give its timing diagram. 7
- b    What is Flynn's classification? 3

x-x-x