

2007 COCHIN UNIVERSITY OF SCIENCE & TECHNOLOGY

B.TECH ELECTRICAL AND ELECTRONICS ENGINEERING COMPUTER ARCHITECTURE AND ORGANISATION

MAY 2007

**TIME: 3 HOUR
MARK: 90**

**ANSWER ANY SIX QUESTION
ALL QUESTIONS CARRY EQUAL MARKS**

MARK [6*15]

- 1 a. What is addressing mode? Explain any five different addressing modes supported by a typical microprocessor
- b. Explain Booth's algorithm for multiplication. Show the Booth's method for the multiplication of 0111 x 0011
- 2 a. With the help of a neat diagram and example, explain the working of a typical micro programmed control unit
- b. Explain organisation of a typical processor with bit slice
- 3 a. Explain the working of dynamic memory. Why dynamic memory is more suitable for computer RAM
- b. What is cache memory? Explain set associative mapping in cache memory
- 4 a. Write short note on virtual memory
- b. What is paging? Explain how paging can be implemented in CPU to access virtual memory
- c. Draw the organisation of a typical hard disk drive
- 5 a. Explain DMA with suitable diagrams
- b. What is interrupt? Explain how interrupts are handled by processors
- 6 a. Write short notes on vectored interrupts
- b. Explain RS-232 serial port standard
- c. Explain the working of a typical dot matrix printer
- 7 a. Draw the architecture of Intel 8085 microprocessor. Explain each component in detail
- b. Explain different control signals of 8085 microprocessor
- 8 a. Explain the design of CPU section with buffers and latches
- b. Explain the interrupt structure of 8085 microprocessor
- 9 a. What are the different addressing modes supported by 8085 microprocessor? Explain each with examples
- b. Write an assembly language program for 8085 to multiply two 8-bit numbers
- 10 a. Draw the timing diagram for the 8085 instruction STA 2002H
- b. Explain how memory is interfaced with 8085 microprocessor
- c. Write short notes on
 - i) I/O mapped I/O
 - ii) memory mapped I/O