

## 2008 COCHIN UNIVERSITY OF SCIENCE & TECHNOLOGY

### **B.TECH ELECTRICAL AND ELECTRONIC ENGINEERING COMPUTER ARCHITECTURE AND ORGANISATION**

APRIL 2008

**TIME: 3 HOUR  
MARK: 90**

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

**MARK [ 6\*15 ]**

- 1 a. Explain the importance of microinstruction with example. Hence explain pre fetching of microinstruction
- b. Discuss about the idea behind the logic design of fast address and fast multiplication
- 2 a. Write short notes on following:
  - i)Booth's algorithm
  - ii)Emulation
  - iii)Floating point arithmetic
  - iv)Bit-slice processors
- b. Discuss briefly about instruction execution cycle and sequencing of control signal with an example
- 3 a. Write short notes on different secondary memories and its standards
- b. Discuss about implementation of virtual memory and cache memory. What are its importance?
- 4 a. Briefly explain following terms:
  - i) Multiple memory modules and its interleaving
  - ii) Replacement algorithms
  - iii) Memory mapping function
- b. Explain the internal organisation of semi conductor RAM memories
- 5 a. Describe the concept of interrupts and vectored interrupts in handling I/O devices
- b. Explain various bus scheduling and bus arbitration schemes in I/O interfacing
- 6 a. Write short notes on following:
  - i)Serial and parallel I/O interfacing standards
  - ii)Daisy chaining
- b. Discuss briefly about DMA
- 7 a. Explain the interrupt structure of 8085
- b. Describe the architecture of 8085 with its functional diagram
- 8 a. Explain how 8085 handle multiple interrupts
- b. What are microprocessors ? Explain with a typical block diagram of the architecture of a 8 bit microprocessor
- 9 a. Explain various addressing modes in 8085
- b. Explain the instruction set of 8085
- 10 a.Explain how address decoding for memory and I/O is done in 8085. Hence compare memory mapped I/O and I/O mapped I/O techniques
- b. Write an assembly language program to perform 16 bit addition in minimum number of steps