#### DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING CS T36 / COMPUTER ORGANIZATION & ARCHITECTURE

# <u>UNIT-I</u>

# 2 MARKS

- 1. What are the functional units of Computer?
- 2. Explain MAR MDR?
- 3. What is General Purpose Register?
- 4. Define Program Counter and Instruction Register?
- 5. What is Bus?
- 6. Define software, & types of Software?
- 7. Define Compiler?
- 8. What is Pipelining?
- 9. What is CISC and RISC?
- 10. Define Big Endian and little Endian?
- 11. What is Memory operation?
- 12. What is Addressing modes?
- 13. What is Effective addressing?
- 14. What are the types of Addressing modes?
- 15. What is Source Program and Object program?
- 16. Describe Basic Performance Equation?
- 17. Explain some of the operations performed by Instruction?
- 18. What is Data Register?
- 19. What is meant by multi computer?
- 20. Write about RAM
- 21. Write about Cache Memory
- 22. What is byte addressability?
- 23. What is an instruction format?
- 24. Write about types of computer instructions
- 25. What is Address Register?

- 1. Describe In Detail About Functional Units of computer ?
- 2. Discuss in detail about basic operational concepts on instruction?
- 3. Explain in detail about Instruction & Instruction sequencing?
- 4. Discuss about Addressing modes with example?
- 5. Discuss about Assembly language?
- 6. Explain in detail about Subroutines?
- 7. Explain in detail about Shift & Rotate Instructions?
- 8. Discuss in detail about Basic input output operation?





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## UNIT-II

### 2 MARKS

- 1. Write about IA-32?
- 2. List out the various register of IA- 32 Register structure
- 3. Write about General purpose registers
- 4. Write about floating point registers
- 5. What is Segment registers
- 6. Define Instruction pointer
- 7. Write about status registers
- 8. What is EFLAGS Register
- 9. Write about ESP register and EBP register
- 10. Write about the Index Registers
- 11. List the various addressing modes of IA-32
- 12. What is immediate mode? Give example
- 13. Write about IA-32 Instruction
- 14. What is One byte instruction?
- 15. What is immediate mode encoding?
- 16. In which situation a program flow control changes.
- 17. Write about Conditional jump instruction
- 18. Write about Unconditional Jump Instruction
- 19. What is the use of Compare Instructions?
- 20. What is Logical Shift instruction?
- 21. List out the various logical shift instruction
- 22. List out the various rotate instruction
- 23. What is memory mapped I/O?
- 24. How block transfer instruction operates

## **Î1 MARKS**

- 1. Write in detail about ia-32 registers.
- 2. Explain ia-32 addressing modes
- 3. Explain ia-32 instructions
- 4. Write about ia-32 assembly language
- 5. Explain i/o operation in ia-32
- 6. Write about the other instructions that are available in ia-32
- 7. Write in detail about subroutines in ia-32?



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### <u>UNIT-III</u> 2 MARKS

- 1. Give the organization of single bus structure?
- 2. What is memory mapped I/O?
- 3. What are the various mechanisms for implementing I/O operations
- 4. Define ISR
- 5. What constitute the device's interface circuit?
- 6. What is the purpose of interrupt acknowledgement signal?
- 7. Define interrupt latency?
- 8. Give a typical scenario assuming that interrupts are enabled?
- 9. What are vectored interrupts?
- 10. What are privileged instructions & privilege exception?
- 11. What are the two independent mechanisms for controlling interrupt requests?
- 12. Define Multitasking?
- 13. What are the uses of interrupts in OS?
- 14. What does an exception occur when the processor is in trace mode?
- 15. What is time slicing?
- 16. What is DMA? Write the advantages of DMA.
- 17. What is cycle stealing & block or burst mode?
- 18. What is bus arbitration with its types?
- 19. Define Master & Slave?
- 20. Define full handshake. List the two advantages of a full handshake.
- 21. What is the difference between serial port and parallel port?
- 22. Define SCSI?
- 23. What are the different categories of SCSI bus signals?
- 24. Name and give purpose of widely used bus standards?
- 25. Distinguish between isolated and memory mapped I/O?

- 1. Explain about Programmed I/O And Memory Mapped I/O
- 2. Explain about Interrupts With Neat Diagram.
- 3. What is DMA? Explain in detail.
- 4. What are interface circuits? Explain
- 5. Explain about Buses in detail.
- 6. Discuss PCI, SCSI, USB?
- 7. Explain the use of interrupts in operating system



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# UNIT-IV

## 2 MARKS

- 1. What is DDR SDRAM?
- 2. What is replacement algorithm?
- 3. Describe the memory hierarchy?
- 4. What is write-back or copy back protocol?
- 5. What is write-through protocol?
- 6. What are the two aspects of locality of reference? Define them.
- 7. What is cache memory?
- 8. Differentiate flash devices and EEPROM devices.
- 9. Differentiate static RAM and dynamic RAM?
- 10. What is MMU?
- 11. Define memory access time?
- 12. What is Translation Look aside Buffer? Or what is TLB?
- 13. Define Locality of Reference.
- 14. Give the features of a ROM cell
- 15. What is virtual memory and what are the benefits of virtual memory?
- 16. Differences between cache memory and virtual memory
- 17. Differentiate asynchronous DRAM with synchronous DRAM?
- 18. What are the two registers involved in data transfer between the memory and the processor?
- 19. What is memory interleaving?
- 20. What is Ram Bus technology?
- 21. What is cache memory?
- 22. What is meant by internal and external fragmentation?

- 1. Describe in detail the concepts of memory.
- 2. Describe in detail about Semiconductor RAM memories
- 3. Describe in detail about Read-Only Memories
- 4. What is cache memory? Describe in detail.
- 5. Explain different types of mapping functions in cache memory
- 6. Explain in detail the concept of Virtual Memory
- 7. Discuss in detail about the secondary storage devices
- 8. Discuss the following Interleaving, Hit rate and Miss penalty, Pre-fetching





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# <u>UNIT-V</u>

- 1. What do you mean by micro-operation?
- 2. Define Processor.
- 3. What is Data path?
- 4. What is meant by program counter?
- 5. Define IR?
- 6. What is micro program?
- 7. What do you mean by hardwired control unit?
- 8. Define microinstruction?
- 9. List the two techniques used for grouping of control signals
- 10. Write down the steps to execute an instruction.
- 11. Define fetch step.
- 12. What is meant by execution phase?
- 13. Define MAR, MDR?
- 14. Define register transfer and list out the signals used to do it.
- 15. Write down the control sequence for Move (R1), R2.
- 16. Write down the steps to transfer the content of register R1 to register R4.
- 17. Define multiphase clocking.
- 18. Define MFC signal.
- 19. Write down the steps to execute Add (R3), R1 instruction.
- 20. Define register file.
- 21. Define interrupt?
- 22. Define instruction cycle.
- 23. Define Hardwired control?
- 24. What is the difference between hardwired control and micro' programmed control memory?
- 25. Define multi-cycle?
- 26. Explain load-store architecture?
- 27. How do you measure the speed of a pipeline?
- 28. How do you calculate the performance of the pipeline?
- 29. Define Hit ratio.
- 30. What is the difference between macro and microinstructions?
- 31. Explain coprocessor function?
- 32. What is control word?
- 33. Define control store.
- 34. Why it is need of pre fetch instruction?
- 35. What is meant by micro programmed control?



- 1. Explain about Single bus organization of the Data path inside a processor:
- 2. List and explain the steps involved in the execution of a complete execution.
- 3. Explain multiple bus organization in detail. OR Explain the execution of a three operand instruction using multiple bus organization
- 4. Explain the various design methods of hardwired control unit.
- 5. Draw and explain the block diagram of a complete processor
- 6. Explain micro programmed control unit. What are the advantages and disadvantage of it? OR With a neat diagram explain the internal organization of a processor. (Apr 11)
- 7. Explain how control signals are generated using micro programmed control
- 8. Explain the concepts of Pipelining.
- 9. Write short notes on Pipeline performance
- 10. Define hazard. What are types of hazards?
- 11. Explain Instruction Hazards in detail.
- 12. Write in detail about the influence of Pipelining on Instruction Sets
- 13. Explain in detail about Superscalar operation.