ST. ANN'S COLLEGE OF ENGINEERING & TECHNOLOGY:: CHIRALA

Assignment Questions

Subject : COMPUTER ORGANIZATION **Branch : CSE**
Regulations : R16 **Year-Sem : II-II**

UNIT-I

1. a) Write various ways to improve the clock rate.
   b) What is optimizing compiler?
2. a) Write a short note on bus structures used in computer system.
   b) What is the use of pipelining and superscalar operations?
3. What are the functional units of a computer system? Explain the way of handling information by each of them.
4. Discuss the generations of computers based on the development technologies used to fabricate the processors, memories an I/O units.
5. Write about various general purpose registers involved in the typical computer System.
6. "System software is responsible for coordination of all activities in a computing system"-Justify this statement with the functionalities of it.
7. Explain the importance of instruction set in measuring the performance of a computer system.
8. Discuss various computer types with their applications in real world environment.
9. What is the role of Processor clock, clock rate in the performance of computer system? Explain.
10. Suppose two numbers located in memory are to be added. What are the functional units of digital computer system will carry out this? Explain how.

UNIT-2

1. a) With an example write about relative addressing.
   b) Write short notes on additional addressing modes.
2. Differentiate the instruction execution for adding 'n' numbers using Straight line sequencing and branching.
3. Write short notes on shift and rotate instructions.
4. Write about various means by which data are transferred between memory of a computer and outside world.
5. Write the subroutines for parameter passing through registers.
6. a) Give example for left and right shift operations.
   b) List basic input and output operations.
7. What is register transfer notation? Write and explain these notations to three addresses, two-address, single address and zero-address instruction types.
8. Illustrate the concept of assembly directives with an assembly language Program.
9. In how many ways the location of an operand is specified in an instruction?
   Explain each mode with suitable examples.
10. Explain the role of Stack and Queue in computer program equation.

UNIT-3

1. a) Differentiate post-indexed and pre-indexed addressing with write back policy.
   b) How to determine branch target address?
2. Differentiate relative and absolute addressing modes for branch instructions
3. What is the format of arithmetic instruction in assembly language? Elaborate variants of OP code in it.
4. Write in detail, about register operands, immediate operands of arithmetic and logic instructions.
5. Write in detail, about and shifted immediate operands of arithmetic and logic instructions.
6. a) Discuss load/store instructions for multiple operands.
7. Write the instruction format of ARM.
8. What are the conditional branch instructions? Explain each with an example.
9. How to perform AND, OR, and XOR logic instructions? Give Example.
10. How to perform NAND, NOR logic instructions? Give example.

UNIT-4

1. a) What is the use of PCI bus in a computer system?
   b) Write about the transfer of control between programs through interrupts.
2. How to meet device characteristics and addressing objectives by USB? Explain.
3. Explain the usage of daisy chains and priority in simultaneous interrupt handling.
4. Explain typical read operation with various data transfer signals on the PCI bus.
5. Write about two different approaches for bus arbitration.
6. a) What do you mean by vectored interrupts?
   b) What is bus arbitration?
7. What are the main phases involved in the operation of SCSI bus.
8. List the functionalities of I/O interface. Draw and explain a combined input/output interface circuit.
9. Discuss the implementation of nested interrupts to handle multiple devices.
10. Explain the importance of handshake control for data transfer in asynchronous bus.

UNIT-5

1. a) Write the major functionalities of disk controllers?
   b) Differentiate logical and physical addresses.
2. Write about flash memory and read only memories. Explain their applications.
3. Write about locality of preference, write-through protocol, copy-back protocol and early restart protocol in cache memory.
4. Explain how large storage can be implemented with optical disks.
5. Discuss the possible methods for specifying the placement of memory blocks in cache.
6. a) Differentiate static and dynamic RAMs.
   b) How to encode bits using Manchester encoding?
7. Relate the access speed, size and cost of various memories in memory hierarchy system.
8. "RAID disks offers excellent performance and large &reliable storage"- Justify this statement through various levels.
9. What are the possible configurations of ROM? Explain with advantages and Disadvantages.
10. Write about organization accessing of data on a disk? Elaborate the role of operating systems and disk controllers in it.

UNIT-6

1. a) Explain 3 steps a processor perform to execute instruction.
   b) What is micro programmed control and micro routines?
2. Explain the Single bus organization of the data path inside a processor.
3. Explain the following.
   a) Micro program sequencing. b) Micro instructions with next address field.
4. Explain the following.
   a) Role of MDR in fetching a word from memory.

   b) Control sequence that implements unconditional branch instructions.
5. Explain the Block diagram of a complete processor.
6. a) Write short notes on wide-branch addressing.
   b) Explain basic organization of micro programmed control unit.
7. Explain the Basic operation of micro programmed control unit.
8. Explain the following.
   a) Input and output gating of ALU. b) Storing a word in memory.
9. Explain Conditional branching micro program.
10. Explain the following.
    a) Vertical /horizontal organization of micro instructions. b) Fetching a word from memory.

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Assignment Questions(short answer)

Subject : COMPUTER ORGANIZATION **Branch : CSE**
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UNIT-I

1. Difference between architecture and organization
2. Define software
3. What is performance?
4. What is program counter?
5. Write significance of control unit?

UNIT-II

1. List different types of instructions?
2. Define Addressing mode?
3. Define stack? specify applications
4. Define queue? what are the operations associated with queue?
5. Explain DATAIN and DATAOUT operations?

UNIT-III

1. What is branching?
2. What is immediate addressing?
3. List logical operations?
4. What is displacement addressing?
5. List arithmetic operations?

UNIT-IV

1. What is interrupt? Specify its types?
2. What is interface?
3. What is cycle stealing in DMA?
4. Differentiate synchronous and asynchronous DRAM
5. Define PCI?

UNIT-V

1. What is mapping? List mapping techniques.
2. Write about flash memory?
3. Define Interface?
4. Write a bout magnetic storage?
5. Differentiate SRAM and DRAM?

UNIT-VI

1. Define micro operation?
2. Differentiate hardwired and micro programmed control?
3. Define instruction?
4. What is address sequencing?
5. What is micro program sequencing?

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Slip Test Questions

Subject : COMPUTER ORGANIZATION **Branch : CSE**
Regulations : R16 **Year-Sem : II-II**

UNIT-I

1. a) Write various ways to improve the clock rate.
   b) What is optimizing compiler?
2. "System software is responsible for coordination of all activities in a computing system"-Justify this statement with the functionalities of it.
3. What is the role of Processor clock, clock rate in the performance of computer system? Explain.
4. Draw the connections between the processor and main memory and explain the basic operational concepts

UNIT-II

1. a) With an example write about relative addressing.
   b) Write short notes on additional addressing modes.
2. Explain the role of Stack and Queue in computer program equation.
3. a) Give example for left and right shift operations.
   b) List basic input and output operations.
4. Illustrate the concept of assembly directives with an assembly language Program.

UNIT-IV

1. a) What is the use of PCI bus in a computer system?
   b) Write about the transfer of control between programs through interrupts.
2. How to meet device characteristics and addressing objectives by USB? Explain.
3. Define DMA and draw the two – channel DMA Controller and Explain it.
4. Explain typical read operation with various data transfer signals on the PCI bus.

UNIT-V

1. a) Write the major functionalities of disk controllers?
   b) Differentiate logical and physical addresses.
2. Write about locality of preference, write-through protocol, copy-back protocol and early restart protocol in cache memory.
3. a) Differentiate static and dynamic RAMs.
   b) How to encode bits using Manchester encoding?
4. Explain briefly about Associative –mapped and Set-Associative mapped Cache.