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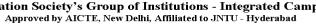


### SCHOOL OF ENGINEERING DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

**Semester: ODD UNIT-I** Academic Year: 2020-2021 **SHORT ANSWER** Year/ Section: II / A,B&C

- 1. Define digital computer?
- What is Common Bus System
- 3. List various registers in a computer along with their purpose (basic computer registers)
- 4. What is direct and indirect address explains?
- 5. What is a control unit?
- 6. What is pipeline register? What is the use of it? Explain in detail?
- 7. How do you map micro operation to a micro instruction address?
- 8. List the register-reference instructions?
- 9. List the of memory reference instructions.
- 10. Draw the block diagram of control unit?







Semester: ODD **UNIT-I** Academic Year: 2020-2021 **LONG ANSWER** Year/ Section: II / A,B&C

- 1. Explain various arithmetic micro-operations with hardware configuration.
- 2. Discuss about arithmetic circuit with an examples.
- 3. Explain about Logic and Shift Micro Operations with suitable Diagrams.
- 4. Design arithmetic Logic Unit.
- 5. List and explain different types of computer instructions. Also provide their formats.
- 6. What is instruction cycle?

(OR)

Draw and explain about the instruction cycle state diagram.

- 7. List and explain the register-reference instructions.
- 8. With the help of examples, explain in detail various types of memory reference instructions.
- 9. Briefly explain instruction cycle and interrupt cycle.
- 10. Explain briefly about input-output configuration.
- 11. Draw the interconnection structure of commonly used register connected to common bus.
- 12. Explain the block diagram of a control unit.





Academic Year : 2020-2021

UNIT-II
SHORT ANSWER

Semester : ODD
Year/ Section: II / A,B&C

- 1. Explain immediate addressing mode with example?
- 2. Explain about the condition field of micro operation?
- 3. Explain about the branch field of micro operation?
- 4. Discuss the significance of micro program sequencer?
- 5. List different types of addressing modes.
- 6. Describe One address Instruction Format.
- 7. Describe two address Instruction Format.
- 8. Describe Three address Instruction Format.
- 9. Describe Zero address Instruction Format.
- 10. List out Data Transfer Instructions.
- 11. Explain Status Bit Conditions

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**Semester: ODD UNIT-II** Academic Year: 2020-2021 **SHORT ANSWER** Year/ Section: II / A,B&C

1. Discuss about functioning of micro programmed control unit.

2. Diagrammatically, explain the process of selection of address for control memory.

3. Explain the following terms

- 1. Control word
- 2. Micro instruction
- 3. Micro program
- 4. Hardwired control
- 4. Explain the following terms
  - 1. Pipeline register
  - 2. Control address register
  - 3. Control memory
  - 4. Sequencer
- 5. With the help of a block diagram explain computer configuration
- 6. Explain about decoding of micro operation fields of micro instruction with diagram.
- 7. With the help of diagram, explain the organization of micro program sequencer for a control memory.
- 8. Discuss about various types of Instruction Formats.
- 9. What is Addressing Mode? Explain different types of addressing modes with example.
- 10. Explain about Data Transfer and Data Manipulation Instructions.







Academic Year : 2020-2021

UNIT-III
SHORT ANSWER

Semester : ODD
Year/ Section: II / A,B&C

- 1. What is floating point and fixed point representations?
- 2. Convert decimal 41. 6875 into binary
- 3. Explain about 9's and 10's Compliments.
- 4. Convert octal (175)<sub>8</sub> into Hexa –decimal
- 5. Convert octal 736.4 to decimal
- 6. Find (72532-03250) using 9's complements
- 7. Find the subtraction of 3250and 72532 using 10's complement
- 8. What is BCD?
- 9. Draw the flowchart for Addition and subtraction.
- 10. Draw BCD addition circuit
- 11. Draw BCD addition circuit
- 12. What is overflow and underflow?

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## DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Academic Year : 2020-2021

UNIT-III
LONG ANSWER

Semester : ODD
Year/ Section: II / A,B&C

- 1. Explain about fixed point representations with example.
- 2. Define each of the following number system.
  - a) Decimal
  - b) Binary
  - c) Octal
  - d) Hexadecimal
- 3. Convert (465.0647)<sub>8</sub> into binary, decimal and hexadecimal equivalents.
- 4. Convert 1101101.1011 into its octal, decimal and hexadecimal equivalents.
- 5. Explain how a binary number can be converted to an octal and a hexadecimal number.
- 6. Convert  $(19.625)_{10}$  into its binary, octal and hexadecimal equivalents.
- 7. Convert  $(10A4.249)_{16}$  into its binary, octal and decimal equivalents
- 8. Convert the following numbers,
  - a) 10101100111.0101 to Base 10
  - b)  $(153.513)_{10} = ()_8$
  - c) Given that  $(292)_{10} = (1204)_{b}$  determine 'b'.
- 9. What are the different types of complements? Explain.
- 10. Multiply 10111 with 10011 using Booth's algorithm.
- 11. Explain the addition and subtraction in BCD with hardware configuration.
- 12. Draw the flowchart for add and subtract operations and explain?
- 13. Explain the algorithm for adding and subtracting numbers in signed 2's complement representation?
- 14. Discuss the procedure for multiplication algorithm?
- 15. Discuss about Booth Multiplication algorithm with example.
- 16. Represent the flowchart for multiplication of floating point Numbers?
- 17. Discuss about Decimal Arithmetic Circuit with examples.



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# SCHOOL OF ENGINEERING DEPARTMENT OF COMPUTER SCIENCE & ENGINEERING

Academic Year : 2020-2021

UNIT-IV
SHORT ANSWER

Semester : ODD
Year/ Section: II / A,B&C

1. What is DMA?

- 2. What is the advantage of handshaking method over strobe control?
- 3. What is strobe control?
- 4. What is interrupt initiated mechanism in data transfer
- 5. What is daisy-chain method?
- 6. Explain I/O bus vs Memory bus
- 7. What is Isolated I/O vs Memory mapped I/O
- 8. What is priority interrupt?
- 9. What IOP? What is the use of it?
- 10. How many types of data transfer are there? What are their disadvantages?

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**Semester: ODD UNIT-IV** Academic Year: 2020-2021 **LONG ANSWER** Year/ Section: II / A,B&C

- 1. Explain the significance of input output interface?
- Explain the connection of I/O bus to input output devices?
- 3. Explain the following
  - a) I/O command
- b) data input command
- 4. Discuss the purpose of IOP?
- 5. What is the difference between isolated I/O and memory- mapped I/O? What are the advantages and disadvantages of each?
- 6. Explain the techniques used to achieve asynchronous data transfer?
- Represent the block diagram and timing diagram for destination initiated strobe control for data transfer? Explain?
- 8. Explain the block diagram, timing diagram and sequence of events for destination initiated transfer using handshaking?
- 9. Explain daisy-chaining priority and parallel priority interrupt?
- 10. Discuss the block diagram of DMA controller with diagram?
- 11. Explain DMA transfer in a computer system?
- 12. Describe the block diagram of a computer with I/O processor?
- 13. How the communication occurs between CPU IOP? Explain?

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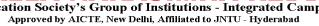
Academic Year : 2020-2021

UNIT-V
SHORT ANSWER

Semester : ODD
Year/ Section: II / A,B&C

- 1. Explain the memory hierarchy in a computer system?
- 2. What is meant by a bootstrap loader? Explain?
- 3. How many 128 \* 8 RAM chips are needed to provide a memory capacity of 2048 bytes?
- 4. Discuss the typical ROM chip with a diagram?
- 5. How many chips are needed to provide a memory capacity of 16K bytes?
- 6. What is the significance of auxiliary memory devices?
- 7. Explain the memory address map for microcomputer?
- 8. Represent and explain associative memory of m word, n cells per word?
- 9. Explain the basic operations of the cache?
- 10. Explain the procedure of writing into cache?
- 11. Explain the Parallel Processing?
- 12. What is pipelining? Explain it?
- 13. Show space-time diagram for pipeline. Explain with an example?
- 14. Explain arithmetic pipeline?
- 15. Explain vector processing?
- 16. Explain Array Processors?
- 17. Describe the characteristics of multiprocessors?
- 18. Explain four segment pipelining?
- 19. What are the benefits of multiprocessor organization?
- 20. Give the timing diagram of instruction pipeline?







Semester : ODD **UNIT-V** Academic Year: 2020-2021 **LONG ANSWER** Year/ Section: II / A,B&C

- 1. What is meant by cache initialization? Explain?
- Explain the block diagram of associative diagram?
- **Explain Instruction Pipeline?**
- What is meant by instruction pipeline? Explain four segment Instruction Pipeline
- 5. Explain RISC Pipeline Vector Processing?
- 6. What is pipelining? Explain pipeline processing with an example?
- 7. Explain RISC pipeline in detail?
- 8. Differentiate b/w Arithmetic Pipeline & Instruction Pipeline?
- 9. Diff b/w Parallel Processing and RISC Pipeline Vector Processing?
- 10. Discuss the difference between tightly coupled multiprocessors and loosely coupled multiprocessors from the viewpoint of hardware organization and programming techniques?
- 11. What is meant by interconnection structures? Explain?
- 12. Explain how inter processor communication can be achieved?
- 13. Explain daisy-chain arbitration procedure?
- 14. Discuss the parallel arbitration procedure?