



NARASIMHA REDDY ENGINEERING COLLEGE
(Autonomous)

Approved by AICTE, New Delhi & Affiliated to JNTUH, Hyderabad
Accredited by NAAC with A Grade, Accredited by NBA

IV B.Tech I Semester Supplementary Examinations, October/November-2019

COMPUTER ARCHITECTURE AND ORGANIZATION

**(Common to Electronics and Communication Engineering and Electronics and
Instrumentation Engineering)**

Time: 3 hours

Max. Marks: 70

Question paper consists of Part-A and Part-B

Answer ALL sub questions from Part-A

Answer any THREE questions from Part-B

PART-A (22 Marks)

- | | |
|--|-----|
| 1. a) What is the difference between the restoring and non-restoring method of division? | [4] |
| b) What are the types of micro operations? | [3] |
| c) What is a control word? | [3] |
| d) What is Memory system? Define Memory refreshing. | [4] |
| e) Define intra segment and inter segment communication. | [4] |
| f) What is bus arbitration? Explain. | [4] |

PART-B (3x16 = 48 Marks)

- | | |
|--|-----|
| 2. a) Explain the architecture of a basic Computer. | [6] |
| b) Distinguish between multiprocessors and multi computers. | [4] |
| c) Explain the Booth's algorithm for multiplication of signed two's complement numbers. | [6] |
| 3. a) Explain the Differences between CISC and RISC. | [8] |
| b) Discuss about Memory Reference Instructions. | [8] |
| 4. a) Explain the basic organization of a micro programmed control unit and the generation of control signals using micro program. | [8] |
| b) Describe the control unit organization with a separate Encoder and Decoder functions in a hardwired control. | [8] |
| 5. a) What do you mean by virtual memory? Discuss how paging helps in implementing virtual memory. | [8] |
| b) Discuss any six ways of improving the cache performance. | [8] |
| 6. a) Discuss about priority interrupt. | [8] |
| b) Explain about Input-output interface. | [8] |

Question Papers (CIA & SEE)

Mid exam question papers:



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DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING II-B.TECH I SEMESTER – I MID EXAMINATION SET - B

SUBJECT: Computer Organization and Architecture
MAX. MARKS: 10

DATE:
TIME: 2.00PM-3.30PM

ANSWER ANY TWO QUESTIONS

2*5=10M

| S.No | Question | CO | BL | POs |
|------|--|----|----|-----------------------------|
| 1. | a) Draw the figure to show how functional units are interconnected using a bus and explain. b) List and explain the functions of various components | 1 | 3 | PO1,PO3,PO11 PO2,PO2,PO5 |
| 2. | a) Explain about Stack Organization in detail. b) Discuss the generic Instruction types present in a computer system. | 1 | 4 | PO3,PO1,PO12 PO2,PO5,PO4 |
| 3 | a) Describe the Data Transfer and Manipulation. b) Explain the Instruction Formats. | 1 | 2 | PO2,PO4,PO5 PO1,PO3,PO6 |
| 4. | a) Elaborate the Floating Point Representation. b) Illustrate the Fixed Point Representation. | 2 | 4 | PO1,PO2,PO5 PO3,PO4,PO12 |



DEPARTMENT OF COMPUTER SCIENCE AND ENGINEERING
II-B.TECH I SEMESTER – II MID EXAMINATION
SET - B

SUBJECT: Computer Organization and Architecture

DATE:

MAX. MARKS: 10

TIME: 10.00AM-11.30PM

ANSWER ANY TWO QUESTIONS

$2^*5=10M$

| S.No | Question | CO | BL | POs |
|------|--|----|----|--------------|
| 1. | a) Compare horizontal and vertical organization. Give their advantages and disadvantages. | 3 | 3 | PO1,PO2,PO12 |
| | b) What do you understand by symbolic micro instruction? Give the typical field distribution of a symbolic micro instruction and explain the significance of each field. | 3 | 2 | PO2,PO1,PO5 |
| 2. | a) When a device interrupt occurs, how does the processor determine which device issued the interrupt? Explain. | 4 | 4 | PO3,PO2,PO11 |
| | b) Explain the Decimal Arithmetic unit. | 4 | 3 | PO1,PO5,PO4 |
| 3 | a) Discuss the CISC Characteristics. | 4 | 2 | PO2,PO4,PO6 |
| | b) List and explain the RISC Characteristics. | 5 | 3 | PO2,PO4,PO6 |
| 4. | a) Elaborate the Vector Processing and Array Processor. | 5 | 4 | PO1,PO2,PO5 |
| | b) Discuss the Characteristics of Multiprocessors. | 5 | 2 | PO3,PO4,PO12 |

Assignment Questions (2022-2023)



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DEPARTMENT OF CSE

II-B.TECH I SEMESTER- ASSIGNMENT: I

SUBJECT: COMPUTER ORGANIZATION AND ARCHITECTURE

| S.No | | Question | CO | BL | POs |
|------|----|--|----|----|--------------|
| 1. | a) | Define computer. Specify the different types of computers and their characteristics. | 1 | 4 | PO2,PO3,PO11 |
| | b) | Explain how the floating-point numbers are represented and used in digital arithmetic operations. Give an example. | 1 | 3 | PO2,PO3,PO5 |
| 2. | a) | What is a bus? Draw the figure to show how functional units are interconnected using a bus and explain. | 1 | 2 | PO4,PO2,PO12 |
| | b) | List and explain the functions of various components | 1 | 3 | PO1,PO5,PO6 |
| 3 | a) | Explain about Stack Organization in detail. | 1 | 2 | PO2,PO4,PO5 |
| | b) | Discuss the generic Instruction types present in a computer system. | 2 | 4 | PO4,PO3,PO6 |
| 4. | a) | Describe the Data Transfer and Manipulation. | 2 | 4 | PO3,PO2,PO6 |
| | b) | Explain the Instruction Formats. | 2 | 2 | PO3,PO4,PO11 |
| 5 | a) | Elaborate the Floating Point Representation. | 3 | 2 | PO4,PO3,PO12 |
| | b) | Illustrate the Fixed Point Representation. | 3 | 3 | PO2,PO4,PO7 |



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DEPARTMENT OF CSE

II-B.TECH I SEMESTER- ASSIGNMENT: 2

SUBJECT: COMPUTER ORGANIZATION AND ARCHITECTURE

| S.No | | Question | CO | BL | POs |
|------|----|---|----|----|--------------|
| 1. | a) | When a device interrupt occurs, how does the processor determine which device issued the interrupt? Explain. | 3 | 2 | PO2,PO2,PO11 |
| | b) | A DMA module is transferring the characters to memory using cycle stealing, from a device transmitting at 9600 bps. The processor is fetching instructions at the rate of 1MIPS. By how much will the processor be slowed down due to DMA activity? | 3 | 2 | PO2,PO2,PO5 |
| 2. | a) | Compare horizontal and vertical organization. Give their advantages and disadvantages. | 3 | 3 | PO4,PO2,PO12 |
| | b) | What do you understand by symbolic micro instruction? Give the typical field distribution of a symbolic micro instruction and explain the significance of each field. | 4 | 3 | PO1,PO5,PO6 |
| 3 | a) | When a device interrupt occurs, how does the processor determine which device issued the interrupt? Explain. | 4 | 2 | PO2,PO4,PO5 |
| | b) | Explain the Decimal Arithmetic unit. | 4 | 3 | PO4,PO3,PO6 |
| 4. | a) | Discuss the CISC Characteristics. | 4 | 4 | PO3,PO2,PO6 |
| | b) | List and explain the RISC Characteristics. | 5 | 2 | PO3,PO4,PO11 |
| 5 | a) | Elaborate the Vector Processing and Array Processor. | 5 | 2 | PO4,PO3,PO12 |
| | b) | Discuss the Characteristics of Multiprocessors. | 5 | 3 | PO2,PO4,PO7 |