

SIDDHARTH INSTITUTE OF ENGINEERING & TECHNOLOGY:: PUTTUR
(AUTONOMOUS)

B.Tech II Year I Semester Regular & Supplementary Examinations December-2023

COMPUTER ORGANIZATION & ARCHITECTURE

(Common to CSE, CSM, CIC, CAD, CCC, CAI & CSIT)

Time: 3 Hours

Max. Marks: 60

(Answer all Five Units 5 x 12 = 60 Marks)

UNIT-I

- | | | | | | |
|---|---|--|-----|----|----|
| 1 | a | Describe the Basic Operational Concepts of computer with neat diagram. | CO1 | L2 | 8M |
| | b | Differentiate between control unit and ALU. | CO1 | L2 | 4M |

OR

- | | | | | | |
|---|---|---|-----|----|----|
| 2 | a | Discuss any two instructions in each group of Data Transfer, Data Manipulation and Program Control Instructions with example. | CO1 | L2 | 6M |
| | b | What is Addressing Mode and List Different Addressing Modes. | CO1 | L3 | 6M |

UNIT-II

- | | | | | | |
|---|---|---|-----|----|-----|
| 3 | | Explain the Flow chart for Addition and Subtraction. | CO1 | L2 | 12M |
| | | OR | | | |
| 4 | a | Subtract 1101 and -1001 using 2's complement subtractions. | CO3 | L2 | 6M |
| | b | Discuss the overflow condition in addition and subtraction. | CO3 | L2 | 6M |

UNIT-III

- | | | | | | |
|---|---|---|-----|----|----|
| 5 | a | Draw and explain four bit parallel adder – subtractor circuit. | CO3 | L3 | 6M |
| | b | Discuss about binary increment with neat sketch. | CO3 | L2 | 6M |
| | | OR | | | |
| 6 | a | What is Hardwired Control? Explain in detail with a neat diagram. | CO6 | L2 | 8M |
| | b | Differentiate between Hardwired Control and Micro-programmed control. | CO6 | L2 | 4M |

UNIT-IV

- | | | | | | |
|---|---|---|-----|----|-----|
| 7 | | Give detailed notes on DMA transfers in computer system with neat sketch. | CO6 | L3 | 12M |
| | | OR | | | |
| 8 | a | What is cache memory What is hit and miss in the cache memory. | CO4 | L3 | 8M |
| | b | List and Explain different mapping in Cache memory | CO4 | L2 | 4M |

UNIT-V

- | | | | | | |
|----|---|--|-----|----|----|
| 9 | a | Explain the concept of 4 stage Pipelining with diagram. | CO5 | L2 | 6M |
| | b | Sketch the flowchart for floating point multiplication in arithmetic pipeline. | CO5 | L3 | 6M |
| | | OR | | | |
| 10 | a | Explain cross bar switch with neat sketch. | CO6 | L2 | 6M |
| | b | Explain 2D mesh network with neat diagram. | CO6 | L2 | 6M |

*** END ***

