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

B.Tech II Year I Semester Supplementary Examinations December-2021

COMPUTER ORGANIZATION & ARCHITECTURE

(Common to CSE & CSIT)

Time: 3 hours

Max. Marks: 60

PART-A

(Answer all the Questions 5 x 2 = 10 Marks)

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|---|----------|------------------------------------------------------------------|----|
| 1 | a | What is data transfer instructions. | 2M |
| | b | Draw the diagram for addition and subtraction of signed numbers. | 2M |
| | c | Draw the 4-bit incrementer. | 2M |
| | d | Explain the concept of page replacement algorithm. | 2M |
| | e | What are the classifications of parallel processing? | 2M |

PART-B

(Answer all Five Units 5 x 10 = 50 Marks)

UNIT-I

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| 2 | a | What is Computer Instructions and Explain about it? | 6M |
| | b | Write in detail about Program Control Instructions. | 4M |

OR

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| 3 | a | Explain about Instruction Execution Cycle with neat diagram. | 5M |
| | b | Write in detail about the Basic Operational Concepts with neat diagram. | 5M |

UNIT-II

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| 4 | Explain the logic behind carry look-ahead adder with its circuit diagram. | 10M |
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| 5 | Draw the H/W Flowchart and write algorithm for Division restoring with an example. | 10M |
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UNIT-III

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| 6 | a | Explain about three- state bus buffers with neat sketch. | 5M |
| | b | Write about binary increment with neat sketch. | 5M |

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| 7 | Explain about Address Sequencing with neat diagram. | 10M |
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UNIT-IV

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| 8 | What is Main Memory and what are the types in it, Explain in detail. | 10M |
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| 9 | What is Cache Memory? Explain in detail mapping functions. | 10M |
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UNIT-V

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| 10 | a | Define parallel processing. How one can achieve parallel processing with single CPU. | 5M |
| | b | Explain about characteristics of Multiprocessor. | 5M |

OR

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| 11 | a | Draw 8×8 omega switching network with explanation. | 5M |
| | b | Explain crossbar switch with neat sketch. | 5M |

END