

DR. BABASAHEB AMBEDKAR TECHNOLOGICAL UNIVERSITY, LONERE

Regular & Supplementary Winter Examination – 2023

Course: B. Tech. Branch: Computer Engineering and Allied Semester: III

Subject Name & Code: Computer Architecture & Organization (BTCOC304)

Max. Marks: 60

Date:09/01/2024

Duration: 3 Hr.

Instructions to the Students:

- 1 All the questions are compulsory.
- 2 The level of question/expected answer as per OBE or the Course Outcome (CO). on which the question is based is mentioned in () in front of the question.
- 3 Use of non-programmable scientific calculators is allowed.
- 4 Assume suitable data wherever necessary and mention it clearly.

(Level/CO) Marks

Q.1) Solve Any Two of the following.

12

- | | | |
|--|------------|---|
| A) Explain top level view of computer components with neat labelled diagram? | Understand | 6 |
| B) Describe the Fetch-Decode-Execute cycle in the CPU. Explain the role of each stage in the execution of the instructions cycle? | Understand | 6 |
| C) Discuss the role of buses in computer organization. Explain the different types of buses and their functions? | Understand | 6 |

Q.2) Solve Any Two of the following.

12

- | | | |
|---|------------|---|
| A) Discuss the assembly language programming. How does it differ from a high-level programming language? | Remember | 6 |
| B) Describe the concept of Addressing Modes. Give the list of addressing modes and explain-
a) Register Indirect Addressing Mode
b) Direct Addressing Mode | Understand | 6 |
| C) Write a short note on-
1) RISC
2) CISC | Understand | 6 |

Q.3) Solve Any Two of the following.

12

- | | | |
|--|------------|---|
| A) Explain Integer representation in detail? | Understand | 6 |
| B) Represent the decimal values 12, -10 and 15 assigned eight-bit numbers in the following binary formats-
a) Signed magnitude
b) 1's Complement
c) 2's Complement | Analyze | 6 |
| C) Subtract $(11011)_2 - (10011)_2$ using 1's complement & 2's complement method. | Analyze | 6 |

Q.4) Solve Any Two of the following. **12**

- | | | |
|---|------------|---|
| A) Write a short note on-
1) RAM
2) ROM | Remember | 6 |
| B) Explain RAID memory in detail? | Understand | 6 |
| C) Explain the magnetic Disk. Discuss the advantages and disadvantages of magnetic disk using as a storage medium? | Understand | 6 |

Q.5) Solve Any Two of the following. **12**

- | | | |
|---|------------|---|
| A) What is instruction pipelining, and what advantages does it offer in modern processors? | Understand | 6 |
| B) Explain the Microprogrammed Control Unit? | Remember | 6 |
| C) Differentiate between Interrupt driven I/O & Programmed I/O? | Understand | 6 |

***** End *****