Seat No: _____ Enrollment No: _____

PARUL UNIVERSITY

FACULTY OF ENGINEERING & TECHNOLOGY

B.Tech, summer 2022-23 Examination

Semester: 4 **Date: 27/03/2023**

Subject Code: 203105253 **Time: 02:00 pm to 04:30 pm**

Subject Name: Computer Organization & Architecture **Total Marks: 60**

Instructions:

1. All questions are compulsory.
2. Figures to the right indicate full marks.
3. Make suitable assumptions wherever necessary.
4. Start new question on new page.

Q.1 **Objective Type Questions** - (Fill in the blanks, one word answer, MCQ-not more than Five in case of MCQ) (All are compulsory) (Each of one mark) **(15)**

1. Which of the following is a type of architecture used in the computers nowadays?
   a) Microarchitecture b) Harvard Architecture
   c) Von-Neumann Architecture d) System Design
2. Which of the architecture is power efficient?
   a) RISC b) ISA c) IANA d) CISC
3. What does VLIW stands for?
   a) Very Long Instruction Width b) Very Large Instruction Word
   c) Very Long Instruction Width d) Very Long Instruction Word
4. Which of the following is the full form of CISC?
   a) Complex Instruction Sequential Compilation
   b) Complete Instruction Sequential Compilation
   c) Computer Integrated Sequential Compiler
   d) Complex Instruction Set Computer
5. What does ISO stands for?
   a) International Software Organization b) Industrial Software Organization
   c) International Standards Organization d) Industrial Standards Organization
6. To reduce the memory access time we generally make use of _____
7. The VLIW architecture follows _____ approach to achieve parallelism.
8. In CISC architecture most of the complex instructions are stored in _____
9. _____and _____ are the different type/s of generating control signals.
10. The bit used to signify that the cache location is updated is _____
11. A disk-drive can transfer data directly to and from the RAM.-true/false
12. ROM is secondary memory. True/false
13. Virtual memory is faster than RAM, because it has no physical limitation. .-true/false
14. The 4 stages in the machine-instruction-cycle are: fetch-execute-encode-store. .-true/false
15. Cache memory is usually considerably smaller than RAM. .-true/false

Q.2 Answer the following questions. (Attempt any three) **(15)**

A) Explain the following terms: a)SPA b)SNA c)SZA d)SZE
B) Explain different types of Interrupts
C) Write a note on subroutines.
D) Explain the characteristics of RISC and CISC

Q.3 A) Explain Instruction cycle **(07)**

B) Explain 4 bit incrementer with a necessary diagram **(08)**

OR

B) Explain four types of instruction formats **(08)**

Q.4 A) List and explain different types of shift microoperation. **(07)**

OR

A) Explain all memory reference instruction in detail. **(07)**

B) Describe the significance of parallel processing with example **(08)**