In computer architecture, micro-instructions are low-level instructions used to implement higher-level machine instructions. The format of a micro-instruction varies depending on the specific architecture, but typically includes several fields that specify the control signals necessary to execute the instruction.

The basic format of a micro-instruction consists of the following fields:

1. Control Field
2. Address Field
3. Conditional Field
4. Next Address Field

1. Control Field:

The control field specifies the control signals necessary to execute the instruction, such as the source and destination registers, the operation to be performed, and the next address to be executed.

2. Address Field:

The address field specifies the memory address of the micro-instruction. This field is used by the control unit to fetch the next micro-instruction from memory.

3. Conditional Field:

The conditional field specifies whether the current instruction should be executed based on a specific condition, such as a comparison between two registers or a flag bit in a status

register.

4. Next Address Field:

The next address field specifies the memory address of the next micro-instruction to be executed. This field is used by the control unit to determine the next micro-instruction to fetch from memory.

The format of micro-instructions can vary depending on the architecture and the complexity of the instructions being executed. Some architectures may include additional fields, such as a field for specifying the number of cycles required to execute the instruction, or a field for specifying the type of memory access required.

Micro-instructions are typically stored in a control memory or control store, which is a type of memory that contains the microcode necessary to execute the machine instructions. During execution, the control unit fetches the appropriate micro-instruction from the control memory and executes it, using the control signals specified in the control field to perform the necessary operations.

Related posts:

1. Structure of Desktop computers
2. Logic Gates
3. Register Organization
4. Bus structure in Computer Organization
5. Addressing modes

6. Register Transfer Language
7. Numerical problem on Direct mapping
8. Registers in Assembly Language Programming
9. Array in Assembly Language Programming
10. Net 31
11. How to start with GNU Simulator 8085
12. Cache Updating Scheme
13. Cache Memory
14. Principle of Cache Memory
15. Cache Mapping
16. Addition and subtraction in fixed point numbers
17. PCI Bus
18. Booths Algorithm
19. Write a short note on design of arithmetic unit ?
20. Write a short note on Array processors ?
21. Write a short note on LRU algorithm ?
22. What is the layout of pipelined instruction in Computer Architecture ?
23. Explain the following interfaces in Detail:PCI Bus, SCSI Bus, USB Bus
24. What is Memory Organization ? Discuss different types of Memory Organization in Computer System.
25. Computer Organization Q and A
26. Write short note on improving cache performance methods in detail ?
27. What is Multiprocessor ? Explain inter process communication in detail ?
28. Briefly explain the concept of pipelining in detail ?
29. Discuss the following in detail: RISC architecture, Vector processing ?
30. Define the instruction format ? Explain I/O System in detail ?
31. Explain the design of arithmetic and logic unit by taking on example ?

32. Explain how addition and subtraction are performed in fixed point number ?
33. Explain different modes of data transfer between the central computer and I/O device ?
34. Differentiate between Serial and parallel data transfer ?
35. Explain signed magnitude, signed l’s complement and signed 2’s complement representation of numbers. Find the range of numbers in all three representations for 8 bit register.
36. If cache access time is lOOns, main memory access time is 1000 ns and the hit ratio is 0.9. Find the average access time and also define hit ratio.
37. Explain hardwired microprogrammed control unit ? What is address sequencer circuit ?
38. Explain how a stack organized computer executes instructions? What is Stack?
39. Draw and explain the memory hierarchy in a digital computer. What are advantages of cache memory over main memory?
40. What is Associative memory? Explain the concept of address space and memory space in Virtual memory.
41. What is Paging? Explain how paging can be implemented in CPU to access virtual memory.
42. Explain SIMD array processor along with its architectural diagram ?
43. Write short notes on
44. Draw the functional and structural views of a computer system and explain in detail ?
45. Explain general register organization.
46. Compare and contrast DMA and I/O processors ?
47. Define the following: a) Flynn’s taxonomy b) Replacement algorithm
48. Explain the various pipeline vector processing methods ?
49. Describe the language features for parallelism ?
50. What are different addressing modes? Explain them.
51. Explain any page replacement algorithm with the help of example ?

52. What is mapping? Name all the types of cache mapping and explain anyone in detail.
53. Explain arithmetic pipeline ?
54. Write short notes on, a) SIMD, b) Matrix multiplication c) Instruction format
55. Differentiate: a) Maskable and non-maskable interrupt b) RISC and CISC
56. Computer Organization Previous Years Solved Questions
57. Booths algorithm to muliyiply +5 and -15