Functional View:

The functional view of a computer system describes the system's behavior and function, regardless of its internal structure or organization. It defines the purpose and capabilities of the system and how it interacts with its environment.

The functional view can be divided into four major components:

1. Input/Output (I/O): This component is responsible for communication between the computer system and the external environment. It includes devices such as keyboards, mice, displays, and network interfaces.
2. Memory: This component stores data and instructions for the CPU to process. It includes main memory, such as RAM, as well as secondary storage devices like hard drives.
3. Central Processing Unit (CPU): This component executes instructions and controls the operation of the computer system. It includes the arithmetic logic unit (ALU), control unit, and registers.
4. System Interconnect: This component connects the other components of the system and facilitates communication and data transfer between them. It includes buses, switches, and other networking hardware.

Structural View:

The structural view of a computer system describes the physical components and their organization that implement the system's functional behavior. It defines how the system is built and how its components are interconnected.

The structural view can be divided into four major components:

1. Input/Output (I/O) Devices: These are the physical devices that allow input and output operations to occur, such as keyboards, mice, and printers.
2. Memory Devices: These are the physical components that store data and instructions, such as RAM, hard drives, and flash memory.
3. Central Processing Unit (CPU): This is the physical component that executes instructions and controls the operation of the computer system.
4. System Interconnect: This includes the physical components that connect the other components of the system, such as buses, switches, and cables.

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15. Cache Mapping

16. Addition and subtraction in fixed point numbers
17. PCI Bus
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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 format of Micro Instruction in Computer Architecture explain ?
23. What is the layout of pipelined instruction in Computer Architecture ?
24. Explain the following interfaces in Detail:PCI Bus, SCSI Bus, USB Bus
25. What is Memory Organization ? Discuss different types of Memory Organization in Computer System.
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27. Write short note on improving cache performance methods in detail ?
28. What is Multiprocessor ? Explain inter process communication in detail ?
29. Briefly explain the concept of pipelining in detail ?
30. Discuss the following in detail: RISC architecture, Vector processing ?
31. Define the instruction format ? Explain I/O System in detail ?
32. Explain the design of arithmetic and logic unit by taking on example ?
33. Explain how addition and subtraction are performed in fixed point number ?
34. Explain different modes of data transfer between the central computer and I/O device ?
35. Differentiate between Serial and parallel data transfer ?
36. 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.
37. 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.

38. Explain hardwired microprogrammed control unit ? What is address sequencer circuit ?
39. Explain how a stack organized computer executes instructions? What is Stack?
40. Draw and explain the memory hierarchy in a digital computer. What are advantages of cache memory over main memory?
41. What is Associative memory? Explain the concept of address space and memory space in Virtual memory.
42. What is Paging? Explain how paging can be implemented in CPU to access virtual memory.
43. Explain SIMD array processor along with its architectural diagram ?
44. Write short notes on
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