Write a short note on Array processors ?

Array processors are specialized computer systems designed to perform a large number of similar or identical operations simultaneously, making them ideal for high-performance computing applications such as image processing, scientific simulations, and data analytics.

Array processors are built around arrays of identical processing elements, each of which can execute instructions independently and in parallel. These processing elements are typically simple and optimized for specific types of computations, such as vector operations, matrix multiplication, or convolution.

The use of array processors can significantly speed up computations by exploiting the inherent parallelism in many computational tasks. For example, a matrix multiplication operation can be broken down into multiple smaller matrix multiplications, each of which can be executed simultaneously on different processing elements.

Array processors are also highly scalable, allowing additional processing elements to be added to the system to increase its processing power. This scalability makes them ideal for applications that require large amounts of processing power, such as weather forecasting or genetic analysis.

In recent years, the popularity of array processors has increased due to the rise of artificial intelligence and machine learning applications. Graphics processing units (GPUs) are a type of array processor that has become widely used for these applications due to their ability to efficiently perform large numbers of matrix operations, which are common in machine learning algorithms.

In summary, array processors are a powerful tool for high-performance computing applications, leveraging parallelism and scalability to perform large numbers of computations

quickly and efficiently.

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19. Write a short note on design of arithmetic unit ?
20. Write a short note on LRU algorithm ?
21. What is the format of Micro Instruction in Computer Architecture explain ?
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