

CBSE NET JUNE 2012 PAPER III

Suppose that a given application is run on a 64-processor machine and that 70 percent of the application can be parallelized. Then the expected performance improvement using Amdahl's law is

- (A) 4.22
- (B) 3.22
- (C) 3.32
- (D) 3.52

Ans:-B

Explanation:-

According to Amdahl's law, in case of parallelization, if P is the proportion of the program that can be made parallel, then $(1-P)$ is the proportion that cannot be parallelized. Then the maximum speedup that can be achieved by using N processor is, $S(N) = 1/(1-P) + P/N$ where N refers to the no of processors, and P refers to the proportion that can be parallelized.

In the question above, no of processor, $N=64$

The proportion of the program that can be made parallel, $P = 70\% = 0.7$

So, substituting in the formula, we get, $1/(1-0.7) + 0.7/64 = 1/0.3 + 0.0109375 = 1.0.310975$
 $= 3.215$
 $= 3.22$

Therefore, the option is B.

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93. Multiple Processor Scheduling
94. What do you mean by Virtual Memory? Write down its advantages?
95. Compare Paging and Segmentation?
96. What is Process Scheduling, CPU Scheduling, Disk Scheduling? Explain Short, Medium and Long term Scheduler?
97. Explain concept of a process with its components ?
98. Explain the following in brief Contiguous and Linked list allocation for implementing file system?
99. Explain various Disk scheduling algorithms with Illustrations ?
100. Define process and thread. What is PCB ? Explain its various entries with their usefulness ?
101. Discuss advantages and disadvantages of the Buffer cache ?
102. Explain different types of OS with examples of each ?
103. What is an Operating System? Write down its desirable characteristics ?

104. Define a deadlock ? Write down the conditions responsible for deadlock? How can we recover from deadlock ?
105. What are the various services provided by Operating system ?
106. What do you mean by PCB? Where is it used? What are its contents? Explain.
107. What is Binary and Counting semaphores ?
108. What is File? What are the different File attribute and operations?
109. What are System call? Explain briefly about various types of system call provided by an Operating System?
110. Describe necessary conditions for deadlocks situation to arise.
111. What are points to be consider in file system design? Explain linked list allocation in detail?
112. Write a Semaphore solution for dining Philosopher's problem?
113. Consider the following page reference string:1,2,3,4,5,3,4,1,2,7,8,7,8,9,7,8,9,5,4,5.
How many page faults would occur for the following replacement algorithm, assuming four frames:a) FIFO b) LRU
114. Explain CPU schedulers in operating system?
115. Write the different state of a process with the help of Process state diagram?
116. What is Mutex in operating system?
117. Explain Network operating system?
118. What do you mean by paging in operating system ?