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CBSE NET 2017 PAPER II

OPERATING SYSTEMS

In a paging system, it takes 30 ns to search translation Look-a-side Buffer (TLB) and 90 ns to access the main memory. If the TLB hit ratio is 70%, the effective memory access time is

- (1) 48ns
- (2) 147ns
- (3) 120ns
- (4) 84ns

Ans :- 2

Explanation:-

A 70 % ratio means that we find the desired page number in the TLB 70 % of the time. If it takes 30 ns to search the TLB and 90 ns to access memory, then a mapped-memory access takes 30+90 ns when the page number is in the TLB. If we fail to find the page number in the TLB(30), then we must first access memory for the page table and frame number(90ns) and then access the desired byte in the memory(90ns), for a total of 210ns. To find the effective memory access time, we weight each case by its probability,

$$\text{Effective access time} = 0.70 \times 120 + 0.30 \times 210$$

$$= 84 + 63 = 147 \text{ ns}$$

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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 deagram?
116. What is Mutex in operating system?
117. Explain Network operating system?
118. What do you mean by paging in operating system ?