

When multiple processors are available, then the scheduling gets more complicated, because now there is more than one CPU which must be kept busy and in effective use at all times.

Load sharing revolves around balancing the load between multiple processors.

Multi-processor systems may be heterogeneous, (different kinds of CPUs), or homogenous, (all the same kind of CPU).

1. Approaches to Multiple-Processor Scheduling

Asymmetric multiprocessing: One processor is the master, controlling all activities and running all kernel code, while the other runs only user code.

Symmetric multiprocessing (SMP): Each processor schedules its own jobs, either from a common ready queue or from separate ready queues for each processor.

2. Processor Affinity

Soft affinity occurs when the system attempts to keep processes on the same processor but makes no guarantees.

Linux and some other OSes support hard affinity, in which a process specifies that it is not to be moved between processors.

3. Load Balancing

Obviously an important goal in a multiprocessor system is to balance the load between processors, so that one processor won't be sitting idle while another is overloaded.

4. Multicore Processors

Traditional SMP required multiple CPU chips to run multiple kernel threads concurrently. Recent trends are to put multiple CPUs (cores) onto a single chip, which appear to the system as multiple processors.

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58. What do you mean by Virtual Memory? Write down its advantages?
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60. What is Process Scheduling, CPU Scheduling, Disk Scheduling? Explain Short, Medium and Long term Scheduler?
61. Explain concept of a process with its components ?
62. Explain the following in brief Contiguous and Linked list allocation for implementing file system?
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64. Define process and thread. What is PCB ? Explain its various entries with their usefulness ?
65. Discuss advantages and disadvantages of the Buffer cache ?
66. Explain different types of OS with examples of each ?
67. What is an Operating System? Write down its desirable characteristics ?
68. Define a deadlock ? Write down the conditions responsible for deadlock? How can we recover from deadlock ?
69. What are the various services provided by Operating system ?
70. What do you mean by PCB? Where is it used? What are its contents? Explain.

71. What is Binary and Counting semaphores ?
72. What is File? What are the different File attribute and operations?
73. What are System call? Explain briefly about various types of system call provided by an Operating System?
74. Describe necessary conditions for deadlocks situation to arise.
75. What are points to be consider in file system design? Explain linked list allocation in detail?
76. Write a Semaphore solution for dining Philosopher's problem?
77. 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
78. Explain CPU schedulers in operating system?
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