

## Midterm #2: Stallings - Chapter 6 - Concurrency: Deadlock/Starvation

Study online at [quizlet.com/\\_4150w9](https://quizlet.com/_4150w9)

1. _____ allows the three necessary conditions by makes judicious choices to assure that the deadlock point is never reached.	Deadlock avoidance	16. A set of processes is _____ when each process is blocked awaiting an event that can only be triggered by another blocked process in the set.	deadlocked
2. _____ can be defined as permanent blocking of a set of processes that compete for system resources or communicate with each other.	Deadlock	17. _____ strategies are very conservative and solve deadlock by limiting access to resources and imposing restrictions on processes.	Deadlock prevention
3. A closed chain of processes, such that each process holds at least one resource needed by the next process in the chain is called _____.	circular wait	18. The strategy of deadlock _____ is to design a system in such a way that the possibility of deadlock is excluded	prevention
4. The _____ condition can be prevented by defining a linear ordering of resource types.	circular wait	19. The strategy of resource allocation denial is referred to as the _____.	banker's algorithm
5. The _____ condition can be prevented by requiring that a process request all of its required resources at one time and blocking the process until all requests can be granted simultaneously	hold and wait	20. Three conditions of policy must be present for a deadlock to be possible: mutual exclusion, no preemption, and _____.	hold and wait
6. Examples of _____ include processors, I/O channels, main, secondary memory, devices, and files, databases, and semaphores.	reusable resources	21. Three general approaches exist for dealing with deadlock: prevent, avoid, and _____.	detect
7. The faster form of interprocess communication provided in Unix is _____.	shared memory	22. True or False: All deadlocks involve conflicting needs for resources by two or more processes.	True
8. Inspired by co-routines, a _____ is a circular buffer allowing two processes to communicate on the producer-consumer model.	pipe	23. True or False: An atomic operation executes without interruption and without interference	True
9. The _____ is a directed graph that shows a state of the system of resources/processes, with each process/resource represented by a node.	resource allocation graph	24. True or False: An indirect method of deadlock prevention is to prevent the occurrence of circular wait.	False
10. The _____ of the system reflects the current allocation of resources to processes.	state	25. True or False: An unsafe state is one which there is at least one sequence of resource allocations to processes that does not result in a deadlock.	False
11. Once the processes have progressed into the _____, those processes will deadlock.	fatal region	26. True or False: A useful tool in characterizing the allocation of resources to processes is the resource allocation graph.	True
12. One of the most significant contributions of UNIX to the development of operating systems is the _____.	pipe	27. True or False: Deadlock avoidance is more restrictive than deadlock prevention.	False
13. Requested resources are granted whenever possible with _____.	deadlock detection	28. True or False: Deadlock avoidance requires knowledge of future process resource requests.	True
14. A _____ resource is one that can be created and destroyed.	consumable	29. True or False: Deadlock is permanent because none of the events are ever triggered.	True
15. A _____ resource is one that can be safely used by only one process at a time and is not depleted by that use.	reusable		

30.	<b>True or False:</b> For deadlock to occur, there must not only be a fatal region, but also a sequence of resource requests that has led into the fatal region.	True
31.	<b>True or False:</b> If access to a resource requires mutual exclusion, then mutual exclusion must be supported by the OS	True
32.	<b>True or False:</b> Interrupts, signals, messages, and information in I/O buffers are all examples of reusable resources.	False
33.	<b>True or False:</b> The dining philosophers' problem can be representative of problems dealing with the coordination of shared resources which may occur when an application includes concurrent threads of execution.	True
34.	<b>True or False:</b> The OS may preempt the second process and require it to release its resources if a process requests a resource that is currently held by another process	True
35.	<b>With _____ only one process may use a resource at a time; no process may access a resource that has been allocated to another process.</b>	mutual exclusion