If no cycle exists in the resource allocation graph \_\_\_\_\_\_\_\_\_\_\_\_

Select one:



then the system will be in a safe state



then the system will not be in a safe state



~~none of the mentioned~~



all of the mentioned

A minimum of \_\_\_\_\_ variable(s) is/are required to be shared between processes to solve the critical section problem.

Select one:



two



three



one



four

Process synchronization can be done on \_\_\_\_\_\_\_\_\_\_

Select one:



software level



both hardware and software level



none of the mentioned



hardware level

.Every time a request for allocation cannot be granted immediately, the detection algorithm is invoked. This will help identify \_\_\_\_\_\_\_\_\_\_\_\_

Select one:



the set of processes that have been deadlocked



all of the mentioned



the set of processes in the deadlock queue



the specific process that caused the deadlock

The child process completes execution, but the parent keeps executing, then the child process is known as \_\_\_\_\_\_\_\_\_\_

Select one:



Body



Zombie



Orphan



Dead

All unsafe states are \_\_\_\_\_\_\_\_\_\_\_\_

Select one:



fatal



deadlocks



none of the mentioned



not deadlocks

For a deadlock to arise, which of the following conditions must hold simultaneously?

Select one:



Hold and wait



No preemption



All of the mentioned



Mutual exclusion

For Mutual exclusion to prevail in the system \_\_\_\_\_\_\_\_\_\_\_\_

Select one:



there must be at least one resource in a sharable mode



at least one resource must be held in a non sharable mode



all of the mentioned



the processor must be a uniprocessor rather than a multiprocessor

Which one of the following is a synchronization tool?

Select one:



socket



pipe



thread



semaphore

(Sai 1 Câu) 🡪 đúng hết

If a process is executing in its critical section, then no other processes can be executing in their critical section. What is this condition called?

Select one:



synchronous exclusion



asynchronous exclusion



mutual exclusion



critical exclusion

The process to be aborted is chosen on the basis of the following factors?

Select one:



all of the mentioned



process is interactive or batch



priority of the process



how long the process has computed

If the wait for graph contains a cycle \_\_\_\_\_\_\_\_\_\_\_\_

Select one:



then a deadlock exists



then a deadlock does not exist



then the system is in a safe state



either deadlock exists or system is in a safe state

A system is in a safe state only if there exists a \_\_\_\_\_\_\_\_\_\_\_\_

Select one:



safe sequence



safe allocation



safe resource



all of the mentioned

The child process can \_\_\_\_\_\_\_\_\_\_

Select one:



never have another program loaded into it



never be a duplicate of the parent process



cannot have another program loaded into it



be a duplicate of the parent process

Cascading termination refers to termination of all child processes if the parent process terminates \_\_\_\_\_\_

Select one:



None of the mentioned



Abnormally



Normally or abnormally



Normally

What is a reusable resource?

Select one:



that can be used by one process at a time and is not depleted by that use



that can be shared between various threads



none of the mentioned



that can be used by more than one process at a time

What are Spinlocks?

Select one:



Locks that work better on multiprocessor systems



CPU cycles wasting locks over critical sections of programs



All of the mentioned



Locks that avoid time wastage in context switches

A system is in the safe state if \_\_\_\_\_\_\_\_\_\_\_\_

Select one:



all of the mentioned



none of the mentioned



there exist a safe sequence



the system can allocate resources to each process in some order and still avoid a deadlock

A deadlock avoidance algorithm dynamically examines the \_\_\_\_\_\_\_\_\_\_ to ensure that a circular wait condition can never exist.

Select one:



system storage state



operating system



resource allocation state



resources

Deadlock prevention is a set of methods \_\_\_\_\_\_\_\_\_\_\_\_

Select one:



to ensure that all of the necessary conditions do not hold



to ensure that at least one of the necessary conditions cannot hold



to recover from a deadlock



to decide if the requested resources for a process have to be given or not

The number of resources requested by a process \_\_\_\_\_\_\_\_\_\_\_\_

Select one:



must always be equal to the total number of resources available in the system



must always be less than the total number of resources available in the system



must not exceed the total number of resources available in the system



must exceed the total number of resources available in the system

Given a priori information about the \_\_\_\_\_\_\_\_ number of resources of each type that maybe requested for each process, it is possible to construct an algorithm that ensures that the system will never enter a deadlock state.

Select one:



minimum



maximum



approximate



average

A semaphore is a shared integer variable \_\_\_\_\_\_\_\_\_\_

Select one:



that can not drop below zero



that can not be more than zero



that can not be more than one



that can not drop below one

Which is the process of invoking the wait operation?

Select one:



waiting for another process to complete before it can itself call the signal operation



none of the mentioned



stopped until the next process in the queue finishes execution



suspended until another process invokes the signal operation (bị đình chỉ cho đến khi một quá trình khác gọi hoạt động tín hiệu)

In the bakery algorithm to solve the critical section problem \_\_\_\_\_\_\_\_\_\_\_\_

Select one:



each process is put into a queue and picked up in an ordered manner



each process gets a unique number and the one with the highest number is served next



each process receives a number (may or may not be unique) and the one with the lowest number is served next



each process gets a unique number and the one with the lowest number is served next

In UNIX, the return value for the fork system call is \_\_\_\_\_ for the child process and \_\_\_\_\_ for the parent process.

Select one:



A Negative integer, Zero



Zero, A nonzero integer



Zero, A Negative integer



A nonzero integer, Zero

Restricting the child process to a subset of the parent’s resources prevents any process from \_\_\_\_\_\_\_\_\_\_

Select one:



under-loading the system by very less CPU utilization



overloading the system by creating a lot of sub-processes



overloading the system by using a lot of secondary storage



crashing the system by utilizing multiple resources

An edge from process Pi to Pj in a wait for graph indicates that \_\_\_\_\_\_\_\_\_\_\_\_

Select one:



Pj is waiting for Pi to release a resource that Pj needs



Pj is waiting for Pi to leave the system



Pi is waiting for Pj to release a resource that Pi needs



Pi is waiting for Pj to leave the system

To \_\_\_\_\_\_\_ to a safe state, the system needs to keep more information about the states of processes.

Select one:



abort the process



none of the mentioned



roll back the process



queue the process

A situation where several processes access and manipulate the same data concurrently and the outcome of the execution depends on the particular order in which access takes place is called \_\_\_\_\_\_\_\_\_\_\_\_

Select one:



aging



starvation



race condition



data consistency

What are Multithreaded programs?

Select one:



not at all prone to deadlocks



more prone to deadlocks



lesser prone to deadlocks



none of the mentioned

Mutual exclusion can be provided by the \_\_\_\_\_\_\_\_\_\_

Select one:



binary semaphores



both mutex locks and binary semaphores



mutex locks



none of the mentioned

Each request requires that the system consider the \_\_\_\_\_\_\_\_\_\_\_\_\_ to decide whether the current request can be satisfied or must wait to avoid a future possible deadlock.

Select one:



resources currently available



resources currently allocated to each process



future requests and releases of each process



processes that have previously been in the system

For a Hold and wait condition to prevail \_\_\_\_\_\_\_\_\_\_\_\_

Select one:



A process must be holding at least one resource and waiting to acquire additional resources that are being held by other processes



None of the mentioned



A process must be not be holding a resource, but waiting for one to be freed, and then request to acquire it



A process must hold at least one resource and not be waiting to acquire additional resources

(đúng hết)

When several processes access the same data concurrently and the outcome of the execution depends on the particular order in which the access takes place is called \_\_\_\_\_\_\_\_

Select one:



critical condition



dynamic condition



essential condition



race condition

A deadlock avoidance algorithm dynamically examines the \_\_\_\_\_\_\_\_\_\_ to ensure that a circular wait condition can never exist.

Select one:



resources



operating system



resource allocation state



system storage state

In UNIX, each process is identified by its \_\_\_\_\_\_\_\_\_\_

Select one:



Device Queue



None of the mentioned



Process Control Block



Process Identifier

For non sharable resources like a printer, mutual exclusion \_\_\_\_\_\_\_\_\_\_\_\_

Select one:



must exist



may exist



must not exist



none of the mentioned

The wait-for graph is a deadlock detection algorithm that is applicable when \_\_\_\_\_\_\_\_\_\_\_\_

Select one:



all resources have multiple instances



all resources have a single 7 multiple instances



all resources have a single instance



all of the mentioned

What is the disadvantage of invoking the detection algorithm for every request?

Select one:



excessive time consumed in the request to be allocated memory



all of the mentioned



considerable overhead in computation time



overhead of the detection algorithm due to consumption of memory

A parent process calling \_\_\_\_\_ system call will be suspended until children processes terminate.

Select one:



exit



wait



fork



exec

The child process can \_\_\_\_\_\_\_\_\_\_

Select one:



never have another program loaded into it



never be a duplicate of the parent process



cannot have another program loaded into it



be a duplicate of the parent process

Each request requires that the system consider the \_\_\_\_\_\_\_\_\_\_\_\_\_ to decide whether the current request can be satisfied or must wait to avoid a future possible deadlock.

Select one:



future requests and releases of each process



resources currently available



processes that have previously been in the system



resources currently allocated to each process

Which of the following conditions must be satisfied to solve the critical section problem?

Select one:



Mutual Exclusion



Bounded Waiting



Progress



All of the mentioned

The data structures available in the Banker’s algorithm are \_\_\_\_\_\_\_\_\_\_\_\_

Select one:



Available



All of the mentioned



Allocation



Need

The monitor construct ensures that \_\_\_\_\_\_\_\_\_\_\_\_

Select one:



the queue has only one process in it at a time



all of the mentioned



n number of processes can be active at a time within the monitor (n being greater than 1)



only one process can be active at a time within the monitor

For sharable resources, mutual exclusion \_\_\_\_\_\_\_\_\_\_\_\_

Select one:



is not required



may be or may not be required



is required



none of the mentioned

To ensure no preemption, if a process is holding some resources and requests another resource that cannot be immediately allocated to it \_\_\_\_\_\_\_\_\_\_\_\_

Select one:



then all resources currently being held are preempted



the process resumes execution without the resource being allocated to it



then the process waits for the resources be allocated to it



the process keeps sending requests until the resource is allocated to it

A monitor is a module that encapsulates \_\_\_\_\_\_\_\_\_\_

Select one:



procedures that operate on shared data structure



synchronization between concurrent procedure invocation



all of the mentioned



shared data structures

A deadlock can be broken by \_\_\_\_\_\_\_\_\_\_\_\_

Select one:



abort one or more processes to break the circular wait



abort all the process in the system



preempt all resources from all processes



none of the mentioned

Which one of the following is the deadlock avoidance algorithm?

Select one:



karn’s algorithm



elevator algorithm



round-robin algorithm



banker’s algorithm

When high priority task is indirectly preempted by medium priority task effectively inverting the relative priority of the two tasks, the scenario is called \_\_\_\_\_\_\_\_\_\_

Select one:



priority removal



priority modification



priority inversion



priority exchange

The wait operation of the semaphore basically works on the basic \_\_\_\_\_\_\_ system call.

Select one:



hold()



stop()



block()



wait()

Restricting the child process to a subset of the parent’s resources prevents any process from \_\_\_\_\_\_\_\_\_\_

Select one:



under-loading the system by very less CPU utilization



crashing the system by utilizing multiple resources



overloading the system by creating a lot of sub-processes



overloading the system by using a lot of secondary storage

The content of the matrix Need is \_\_\_\_\_\_\_\_\_\_\_\_

Select one:



Allocation – Available



Max – Allocation



Allocation – Max



Max – Available

What is the drawback of banker’s algorithm?

Select one:



in advance processes rarely know how much resource they will need



resource once available can disappear



all of the mentioned



the number of processes changes as time progresses

The segment of code in which the process may change common variables, update tables, write into files is known as \_\_\_\_\_\_\_\_\_\_\_\_

Select one:



program



synchronizing



critical section



non – critical section

What is the solution to starvation?

Select one:



the number of rollbacks must be included in the cost factor



all of the mentioned



the number of resources must be included in resource preemption



resource preemption be done instead

(đúng hết)

If deadlocks occur frequently, the detection algorithm must be invoked \_\_\_\_\_\_\_\_

Select one:



rarely & frequently



none of the mentioned



frequently



rarely

Deadlock prevention is a set of methods \_\_\_\_\_\_\_\_\_\_\_\_

Select one:



to recover from a deadlock



to decide if the requested resources for a process have to be given or not



to ensure that at least one of the necessary conditions cannot hold



to ensure that all of the necessary conditions do not hold

The two ways of aborting processes and eliminating deadlocks are \_\_\_\_\_\_\_\_\_\_\_\_

Select one:



Abort all deadlocked processes



Abort one process at a time until the deadlock cycle is eliminated



Abort all processes



All of the mentioned

A monitor is a module that encapsulates \_\_\_\_\_\_\_\_\_\_

Select one:



procedures that operate on shared data structure



synchronization between concurrent procedure invocation



shared data structures



all of the mentioned

Which of the following condition is required for a deadlock to be possible?

Select one:



a process may hold allocated resources while awaiting assignment of other resources



all of the mentioned



no resource can be forcibly removed from a process holding it



mutual exclusion

The child process completes execution, but the parent keeps executing, then the child process is known as \_\_\_\_\_\_\_\_\_\_

Select one:



Dead



Orphan



Body



Zombie

Mutual exclusion implies that \_\_\_\_\_\_\_\_\_\_\_\_

Select one:



none of the mentioned



if a process is executing in its critical section, then all the resources of the system must be blocked until it finishes execution



if a process is executing in its critical section, then no other process must be executing in their critical sections



if a process is executing in its critical section, then other processes must be executing in their critical sections

For non sharable resources like a printer, mutual exclusion \_\_\_\_\_\_\_\_\_\_\_\_

Select one:



must not exist



may exist



none of the mentioned



must exist

All unsafe states are \_\_\_\_\_\_\_\_\_\_\_\_

Select one:



none of the mentioned



deadlocks



not deadlocks



fatal

Concurrent access to shared data may result in \_\_\_\_\_\_\_\_\_\_\_\_

Select one:



data insecurity



data inconsistency



none of the mentioned



data consistency

A computer system has 6 tape drives, with ‘n’ processes competing for them. Each process may need 3 tape drives. The maximum value of ‘n’ for which the system is guaranteed to be deadlock free is?

Select one:



1



2



4



3

For a system to be deadlock free, Sum of max need of processes < No. of processes + No. of resources 3n < n + 6 => 2n < 6 => n < 3 so the maximum value of n for which the system is guaranteed to be deadlock free is 2 [ n is less than 3 means max value for n is 2 ]

A monitor is characterized by \_\_\_\_\_\_\_\_\_\_\_\_

Select one:



all of the mentioned



an identifier



the number of variables in it



a set of programmer defined operators

Cascading termination refers to termination of all child processes if the parent process terminates \_\_\_\_\_\_

Select one:



Abnormally



None of the mentioned



Normally



Normally or abnormally

If the resources are always preempted from the same process \_\_\_\_\_\_\_\_\_\_ can occur.

Select one:



aging



Starvation (Một tiến trình gọi là trì hoãn vô hạn định (Indefinite postponement hay Starvation) nếu nó bị trì hoãn một khoảng thời gian dài lặp đi lặp lại trong khi hệ thống đáp ứng cho những tiến trình khác. Nguyên nhân có thể do Scheduling tệ, khiến cho process có độ ưu tiên thấp không bao giờ được xử lý.)



system crash



deadlock

The disadvantage of a process being allocated all its resources before beginning its execution is \_\_\_\_\_\_\_\_\_\_\_\_

Select one:



None of the mentioned



Low resource utilization



Very high resource utilization



Low CPU utilization

Semaphore is a/an \_\_\_\_\_\_\_ to solve the critical section problem.

Select one:



hardware for a system



special program for a system



integer variable



none of the mentioned

The content of the matrix Need is \_\_\_\_\_\_\_\_\_\_\_\_

Select one:



Max – Allocation



Allocation – Available



Max – Available



Allocation – Max

With \_\_\_\_\_\_\_\_\_\_\_\_\_ only one process can execute at a time; meanwhile all other process are waiting for the processor. With \_\_\_\_\_\_\_\_\_\_\_\_\_\_ more than one process can be running simultaneously each on a different processor.

Select one:



Multiprogramming, Multiprocessing



Multiprogramming, Uniprocessing



Uniprogramming, Multiprocessing



Multiprocessing, Multiprogramming

With Uniprogramming only one process can execute at a time; meanwhile all other processes are waiting for the processor. With Multiprocessing more than one process can run simultaneously each on different processors. The Uniprogramming system has only one program inside the core while the Multiprocessing system has multiple processes inside multiple cores. The core is one which executes instructions and stores data locally into registers.

If no cycle exists in the resource allocation graph \_\_\_\_\_\_\_\_\_\_\_\_

Select one:



then the system will not be in a safe state



then the system will be in a safe state



all of the mentioned



none of the mentioned

The number of resources requested by a process \_\_\_\_\_\_\_\_\_\_\_\_

Select one:



must exceed the total number of resources available in the system



must always be equal to the total number of resources available in the system



must always be less than the total number of resources available in the system



must not exceed the total number of resources available in the system

Which process can be affected by other processes executing in the system?

Select one:



cooperating process



parent process



child process



init process

If a process is executing in its critical section, then no other processes can be executing in their critical section. What is this condition called?

Select one:



synchronous exclusion



mutual exclusion



critical exclusion



asynchronous exclusion

In UNIX, the return value for the fork system call is \_\_\_\_\_ for the child process and \_\_\_\_\_ for the parent process.

Select one:



A Negative integer, Zero



A nonzero integer, Zero



Zero, A Negative integer



Zero, A nonzero integer

For an effective operating system, when to check for deadlock?

Select one:



at fixed time intervals



none of the mentioned



every time a resource request is made



every time a resource request is made at fixed time intervals

The data structures available in the Banker’s algorithm are \_\_\_\_\_\_\_\_\_\_\_\_

Select one:



All of the mentioned



Need



Available



Allocation

(sai 1 cau)

Given a priori information about the \_\_\_\_\_\_\_\_ number of resources of each type that maybe requested for each process, it is possible to construct an algorithm that ensures that the system will never enter a deadlock state.

Select one:



average



minimum



approximate



Maximum

The request and release of resources are \_\_\_\_\_\_\_\_\_\_\_

Select one:



special programs



system calls



command line statements



interrupts

A parent process calling \_\_\_\_\_ system call will be suspended until children processes terminate.

Select one:



wait



exit



exec



fork

A state is safe, if \_\_\_\_\_\_\_\_\_\_\_\_

Select one:



all of the mentioned



the system does not crash due to deadlock occurrence



the system can allocate resources to each process in some order and still avoid a deadlock



the state keeps the system protected and safe

A system is in a safe state only if there exists a \_\_\_\_\_\_\_\_\_\_\_\_

Select one:



safe sequence



safe allocation



safe resource



all of the mentioned

The child process can \_\_\_\_\_\_\_\_\_\_

Select one:



cannot have another program loaded into it



never have another program loaded into it



never be a duplicate of the parent process



be a duplicate of the parent process

The resource allocation graph is not applicable to a resource allocation system \_\_\_\_\_\_\_\_\_\_\_\_

Select one:



with multiple instances of each resource type



with a single instance of each resource type



single & multiple instances of each resource type



none of the mentioned

A situation where several processes access and manipulate the same data concurrently and the outcome of the execution depends on the particular order in which access takes place is called \_\_\_\_\_\_\_\_\_\_\_\_

Select one:



race condition



aging



starvation



data consistency

(đúng hết)

The wait-for graph is a deadlock detection algorithm that is applicable when \_\_\_\_\_\_\_\_\_\_\_\_

Select one:



all of the mentioned



all resources have a single instance



all resources have a single 7 multiple instances



all resources have multiple instances

Which one of the following is the deadlock avoidance algorithm?

Select one:



elevator algorithm



karn’s algorithm



banker’s algorithm



round-robin algorithm

The code that changes the value of the semaphore is \_\_\_\_\_\_\_\_\_\_\_\_

Select one:



critical section code



remainder section code



non – critical section code



none of the mentioned

For sharable resources, mutual exclusion \_\_\_\_\_\_\_\_\_\_\_\_

Select one:



may be or may not be required



is not required



none of the mentioned



is required

A deadlock avoidance algorithm dynamically examines the \_\_\_\_\_\_\_\_\_\_ to ensure that a circular wait condition can never exist.

Select one:



operating system



resource allocation state



system storage state



resources

Deadlock prevention is a set of methods \_\_\_\_\_\_\_\_\_\_\_\_

Select one:



to ensure that at least one of the necessary conditions cannot hold



to recover from a deadlock



to ensure that all of the necessary conditions do not hold



to decide if the requested resources for a process have to be given or not

When several processes access the same data concurrently and the outcome of the execution depends on the particular order in which the access takes place is called \_\_\_\_\_\_\_\_

Select one:



essential condition



dynamic condition



critical condition



race condition

When high priority task is indirectly preempted by medium priority task effectively inverting the relative priority of the two tasks, the scenario is called \_\_\_\_\_\_\_\_\_\_

Select one:



priority removal



priority modification



priority exchange



priority inversion

A deadlock eventually cripples system throughput and will cause the CPU utilization to \_\_\_\_\_\_

Select one:



none of the mentioned



increase



drop



stay still

A monitor is a type of \_\_\_\_\_\_\_\_\_\_\_\_

Select one:



none of the mentioned



low level synchronization construct



high level synchronization construct



semaphore

The segment of code in which the process may change common variables, update tables, write into files is known as \_\_\_\_\_\_\_\_\_\_\_\_

Select one:



program



critical section



non – critical section



synchronizing

Which of the following condition is required for a deadlock to be possible?

Select one:



a process may hold allocated resources while awaiting assignment of other resources



no resource can be forcibly removed from a process holding it



mutual exclusion



all of the mentioned

A deadlock can be broken by \_\_\_\_\_\_\_\_\_\_\_\_

Select one:



preempt all resources from all processes



none of the mentioned



abort all the process in the system



abort one or more processes to break the circular wait

The child process completes execution, but the parent keeps executing, then the child process is known as \_\_\_\_\_\_\_\_\_\_

Select one:



Body



Zombie



Dead



Orphan

The data structures available in the Banker’s algorithm are \_\_\_\_\_\_\_\_\_\_\_\_

Select one:



Available



All of the mentioned



Need



Allocation

Restricting the child process to a subset of the parent’s resources prevents any process from \_\_\_\_\_\_\_\_\_\_

Select one:



under-loading the system by very less CPU utilization



crashing the system by utilizing multiple resources



overloading the system by creating a lot of sub-processes



overloading the system by using a lot of secondary storage

What is the solution to starvation?

Select one:



the number of rollbacks must be included in the cost factor



resource preemption be done instead



all of the mentioned



the number of resources must be included in resource preemption

Given a priori information about the \_\_\_\_\_\_\_\_ number of resources of each type that maybe requested for each process, it is possible to construct an algorithm that ensures that the system will never enter a deadlock state.

Select one:



maximum



minimum



average



approximate

If no cycle exists in the resource allocation graph \_\_\_\_\_\_\_\_\_\_\_\_

Select one:



none of the mentioned



then the system will be in a safe state



then the system will not be in a safe state



all of the mentioned

In UNIX, each process is identified by its \_\_\_\_\_\_\_\_\_\_

Select one:



Process Control Block



Device Queue



Process Identifier



None of the mentioned

What are Multithreaded programs?

Select one:



none of the mentioned



more prone to deadlocks



lesser prone to deadlocks



not at all prone to deadlocks

For a deadlock to arise, which of the following conditions must hold simultaneously?

Select one:



Mutual exclusion



Hold and wait



No preemption



All of the mentioned

Which one of the following is a synchronization tool?

Select one:



semaphore



socket



thread



pipe

.A minimum of \_\_\_\_\_ variable(s) is/are required to be shared between processes to solve the critical section problem.

Select one:



two



one



four



three

(đúng hết)