



Pre Test 03 - Đề kiểm tra lần 3

Hệ điều hành (Trường Đại học Sư phạm Kỹ Thuật Thành phố Hồ Chí Minh)



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1.

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:

critical exclusion

asynchronous exclusion

mutual exclusion

synchronous exclusion

2.

In the bakery algorithm to solve the critical section problem _____

Select one:

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

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

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 highest number is served next

3.

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

maximum

approximate

4.

For a Hold and wait condition to prevail _____

Select one:

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

5.

If no cycle exists in the resource allocation graph _____
Select one:

then the system will be in a safe state

none of the mentioned

then the system will not be in a safe state

all of the mentioned

6.

Which of the following is NOT true for plans to prevent and avoid deadlock?
Select one:

In the deadlock prevention, resource requests are always accepted if the resulting state is safe

Avoid deadlock is less restrictive than preventing deadlock

In the case of deadlock avoidance, resource requests are always granted if the resulting state is safe

Avoid deadlock requires prior knowledge of resource requirements

7.

Which one of the following is a visual (mathematical) way to determine the deadlock occurrence?
Select one:

starvation graph

none of the mentioned

resource allocation graph

inversion graph

8.

A system has 3 processes sharing 4 resources of the same type. If each process needs up to 2 resources then deadlock **may never happen**

9.

The number of resources requested by a process _____
Select one:

must exceed the total number of resources available in the system

must not 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

10.

To avoid deadlock _____
Select one:

inversion technique can be used

there must be a fixed number of resources to allocate

resource allocation must be done only once

all deadlocked processes must be aborted

11.

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

synchronizing

non – critical section

12.

What is a reusable resource?

Select one:

none of the mentioned

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

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

that can be shared between various threads

13.

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

Select one:

Mutual exclusion

All of the mentioned

Hold and wait

No preemption

14.

What is the deadlock handling method?

A. Use methods to ensure the system will never enter a deadlock state

B. Allow the system to enter deadlock state and then recover

C. Pretend that deadlock never happens in the system

Select one:

A và C

A, B và C

A

A và B

15.

A state is safe, if _____

Select one:

the state keeps the system protected and safe

all of the mentioned

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

the system does not crash due to deadlock occurrence

16.

What are the operations that can be invoked on a condition variable?

Select one:

hold & wait

wait & signal

signal & hold

continue & signal

17.

The downside of calling a deadlock detection algorithm for every request is:

Select one:

all correct

cost of deadlock detection algorithm due to memory consumption

Significant costs during calculation.

consumes excess time in requests allocated memory

18.

What is the initial value of the semaphore to allow only one of the many processes to enter their critical section.

8

1

0

16

19.

The two types of semaphore are binary & counting

20.

To avoid race condition, the number of processes that can be concurrently within their critical section is

Select one:

0

1

tùy thuộc vào hệ thống

2

21.

What are Spinlocks?

Select one:

Locks that avoid time wastage in context switches

CPU cycles wasting locks over critical sections of programs

Locks that work better on multiprocessor systems

All of the mentioned

22.

The 'Circular wait' condition can be prevented by
Select one:

all not correct

Define a linear order of resource types and enter the resource level

using thread

using pipe

23.

In UNIX, each process is identified by its _____
Select one:

Process Control Block

Process Identifier

None of the mentioned

Device Queue

24.

If the semaphore value is negative _____
Select one:

it is invalid

none of the mentioned

no operation can be further performed on it until the signal operation is performed on it

its magnitude is the number of processes waiting on that semaphore

25.

Which system call returns the PID of the terminated child process?
Select one:

get

wait

exit

fork

26.

Concurrent access to shared data may result in _____
Select one:

none of the mentioned

data inconsistency

data insecurity

data consistency

27.

Mutual exclusion implies that _____
Select one:

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

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

none of the mentioned

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

28.

To ensure no preemption, if a process is holding some resources and requests another resource that cannot be immediately allocated to it _____
Select one:

the process resumes execution without the resource being allocated to it

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

then all resources currently being held are preempted

then the process waits for the resources be allocated to it

29.

Which of the following statements is not correct for a solution to a critical section problem ?
Select one:

No assumptions may be made about speeds or the number of CPUs.

No two processes may be simultaneously inside their critical sections.

Processes running outside its critical section may block other processes.

Processes do not wait forever to enter its critical section.

30.

To avoid race condition, the number of processes that can be concurrently within their critical section is
Select one:

0

1

tùy thuộc vào hệ thống

2

31.

A deadlock eventually cripples system throughput and will cause the CPU utilization to _____
Select one:

drop

none of the mentioned

stay still

increase

32.

Those processes should be aborted on occurrence of a deadlock, the termination of which?
Select one:

all of the mentioned

is more time consuming

incurs minimum cost

safety is not hampered

33.

A procedure defined within a _____ can access only those variables declared locally within the _____ and its formal parameters.
Select one:

process, semaphore

process, monitor

semaphore, semaphore

monitor, monitor

34.

The content of the matrix Need is _____
Select one:

Max – Allocation

Max – Available

Allocation – Max

Allocation – Available

35.

The request and release of resources are _____
Select one:

special programs

system calls

command line statements

interrupts

36.

A monitor is a type of _____
Select one:

high level synchronization construct

semaphore

low level synchronization construct

none of the mentioned

37.

Bounded waiting implies that there exists a bound on the number of times a process is allowed to enter its critical section _____
Select one:

when another process is in its critical section

after a process has made a request to enter its critical section and before the request is granted

before a process has made a request to enter its critical section

none of the mentioned

38.

To avoid deadlock
Select one:

only allocate resources to processes holding resources

All deadlocked processes need to be removed

a set number of allocated resources are required

resource allocation needs to be done only once

39.

The two ways of aborting processes and eliminating deadlocks are _____
Select one:

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

All of the mentioned

Abort all deadlocked processes

Abort all processes

40.

The child process completes execution, but the parent keeps executing, then the child process is known as _____
Select one:

Dead

Body

Orphan

Zombie

41.

To _____ to a safe state, the system needs to keep more information about the states of processes.
Select one:

queue the process

abort the process

none of the mentioned

roll back the process

42.

Consider the two processes P1 and P2 accessing the shared variables X and Y protected by the binary semaphore S1 and S2 respectively, both initiated by 1. The pseudocode of P1 and P2 are follows:

P1:	P2:
while(true){	while(true){
L1:	L3:
L2:	L4:
X = X + 1;	Y = Y + 1;
Y = Y - 1;	X = Y - 1;
signal(S1);	signal(S2);
signal(S2);	signal(S1);
}	}

To avoid deadlock, the correct operations at L1, L2, L3, L4 are, respectively?

Select one:

wait(S2); wait(S1); wait(S1); wait(S2);

wait(S1); wait(S1); wait(S2); wait(S2);

wait(S1); wait(S2); wait(S2); wait(S1);

wait(S1); wait(S2); wait(S1); wait(S2);

43.

The requirements for solving a Critical Section problem are:

Select one or more:

mutual exclusion

progress

bounded waiting

44.

A crucial part of code must be accessed by two processes, P1 and P2. Consider the processes' use of the subsequent synchronization construct.



Here, common variables between w1 and w2 are initialized to false. Which of the following statements about the aforementioned concept is TRUE?

Select one:

It requires that processes enter the critical section in strict alternation

It does not prevent deadlocks but ensures mutual exclusion

It does not ensure bounded waiting

It does not ensure mutual exclusion

45.

A system is in the safe state if _____

Select one:

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

none of the mentioned

all of the mentioned

there exist a safe sequence

[Clear my choice](#)

46.

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

data consistency

aging

starvation

47.

Whenever a resource allocation request cannot be granted immediately, the deadlock detection algorithm is invoked. This will help identify:

Select one:

All correct

set of deadlocked processes

set of processes in the deadlock queue

Specific processes cause deadlock

48.

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:

4

2

3

1

49.

A system has three processes (P0, P1, and P2) and twelve magnetic tape drives. Process P0 needs ten tape drives, P1 needs four, and P2 needs nine.

☐

Which of the subsequent sequences is safe?
Select one:

P2, P0, P1

P1, P0, P2

P1, P2, P0

P0, P1, P2

50.

Which one of the following is the deadlock avoidance algorithm?
Select one:

karn's algorithm

elevator algorithm

round-robin algorithm

banker's algorithm

51.

Three resource types X, Y, and Z on a single processing system are shared by three processes. There are 5 of each category of resource. Think about the following example:

Process	Allocation	Max
	X Y Z	X Y Z
P0	1 2 1	1 0 3
P1	2 0 1	0 1 2
P2	2 2 1	1 2 0

☐

What process will be the LAST to be completed?
Select one:

None of the mentioned options, as the system is deadlock

P1

P2

P0

52.

The code for each P_i , $i = 0, 1, 2, 3, \dots, 9$ procedure is as follows.

```
do{
  P(mutex)
  {Critical Section}
  V(mutex)
} while(true)
```

With the exception of using $V(mutex)$ rather than $P(mutex)$, the code for P_{10} is identical.

With the mutex initialized to 1, what is the maximum number of processes that can ever be present inside the critical section?

Select one:

2

None of the mentioned

3

1

53.

The following software uses three binary semaphores and three concurrent processes. Initial values for the semaphores are $S_0 = 1$, $S_1 = 0$, and $S_2 = 0$.

```
Process P0
while(true)
{ wait(S0)
  print '0'
  signal(S1)
  signal(S2)
}
```

Process P1

```
wait(S1)
```

```
signal(S0)
```

Process P2

```
wait(S2)
```

```
signal(S0)
```

How frequently will P0 display "0"?

Select one:

Exactly thrice

Exactly once

Exactly twice

At least twice

54.

There is a deadlock state in the system with above RAG. This statement is

Select one:

true

impossible to decide.

unpredictable

false