# Hệ điều hành - But could you make it even better? The better your title, the more popular your

automotive engineerings (Trường Đại học Sư phạm Kỹ Thuật Thành phố Hồ Chí Minh)

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

Select one:

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

Avoid deadlock is less restrictive than preventing deadlock

Avoid deadlock requires prior knowledge of resource requirements

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

Virtual memory _____

Select one:

is large primary memory

is illusion of large primary memory

none

is secondary memory

A process executes with the following page reference string:

1 3 4 3 2 3 4 2 0 3 4 3 1 2 3 7 2 8 7 4 7 2 7 2 7 0 2 7 2 0 7 0 2

Taking the working set window size as 10, what will be the working set for the time instant t1, t2, and t3?

Select one:

t1: {0,2,1,3,4},  t2: {1,2,3,4,5,8},  t3: {0,2,7}

t1: {0,1,2,3,4},  t2: {1,2,4,7,8},  t3: {0,2,7}

t1: {0,1,2,3,4},  t2: {1,2,3,4,7,8},  t3: {0,2,7}

t1: {0,1,2,4},  t2: {1,2,3,4,7,8},  t3: {0,2,7}

Which of the following need not necessarily be saved on a Context Switch between processes?

Select one:

Translation look-aside buffer

Stack pointer

General purpose registers

Program counter

.Interrupt vector is ___

Select one:

a unique device number that is indexed by an address

None of the mentioned

an address that is indexed to an interrupt handler

a unique identity given to an interrupt

*Buddy system* là một sự thỏa hiệp giữa _____

Select one:

phân vùng cố định và phân vùng động

các tùy chọn còn lại đều sai

phân trang và phân đoạn

phân mảnh ngoại và phân mảnh nội

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:**

```
while(true){
  L1: ......
  L2: ......
  X = X + 1;
  Y = Y - 1;
  signal(S1);
  signal(S2);
}
```

**P2:**

```
while(true){
  L3: ......
  L4: ......
  Y = Y + 1;
  X = Y - 1;
  signal(S2);
  signal(S1);
}
```

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

Select one:

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

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

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

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

Insert two missing words to make the statement below correct:

Long-term schedulers are the Trả lời [ ] that select processes from the job queue and load them into memory for execution.

Multi-user systems place more than one job/program/task in the main memory of the main computer system. The jobs are of different users who are connected through terminals to the main computer. The jobs are scheduled by time-sharing technique.

Hãy chọn một:

Đúng

Sai

A type of systems software used on microcomputers is

Select one or more:

MS-DOS

Solaris

Androi

PC-DOS

From the user’s viewpoint, the operating system acts as a resource manager, control program, and virtual machine manager.

Hãy chọn một:

Đúng

Sai

Suppose there are 4 empty original page frames. The page reference string is:

0, 1, 3, 6, 2, 4, 5, 2, 5, 0, 3

If the CLOCK page replacement algorithm is used, the data in the page frames in order and the victim page at the last requirement are ____

( The asterisk (*) represents use-bit = 1 )

Select one:

Frames: 3*, 4*, 1, 0 Victim Page: 5

Frames: 2, 3*, 1, 5*  Victim Page: 0

Frames: 3*, 4, 5*, 0  Victim Page: 2

Frames: 3*, 4, 5, 0  Victim Page: 2

After receiving an interrupt from an I/O device, CPU _____

Select one:

hands over control of address bus and data bus to the interrupting device

halts for a predetermined time

branches off to the interrupt service routine after completion of the current instruction

branches off to the interrupt service routine immediately

Insert three missing characters to make the statement below correct:

A Trả lời includes information on the process's state

The virtual address space of a system is of the same size as the physical address space, the operating system designers decide to free the virtual memory entirely. Which one of the following is true?

Select one:

Implementation of multi-user support is no longer possible

Hardware support is no longer needed from MMU

CPU scheduling can be implement more efficient

Efficient organization the processor cache can be made.

.Which Operating System doesn’t support networking between computers?

Select one:

Windows NT

Windows 2000

Windows 95

Windows 3.1

As a resource manager, operating system controls the user activities, I/O access, and all other activities performed by the system.

Hãy chọn một:

- Đúng
- Sai

What is the minimum number of memory accesses needed in paging?

Select one:

- 3
- 5
- 4
- 2

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

Select one:

- 1
- 2
- tùy thuộc vào hệ thống
- 0

The requirements for solving a Critical Section problem are:

Select one or more:

- bounded waiting
- mutual exclusion
- progress

Multi-tasking systems place more than one job/program/task in the main memory of the system. The jobs are scheduled by time-sharing technique.

Hãy chọn một:

- Đúng
- Sai

Insert the missing word to make the statement below correct:

Trả lời [ ] is number of processes that complete their execution per time unit

In a system, there are three processes, P1, P2, and P3, divided into 32, 189, and 65 pages, respectively. If there are 115 frames in the memory, then the proportions in which the frames will be allocated to the processes are

Select one:

11, 72, 21

13, 76, 26

13, 72, 24

18, 70, 27

Every entry of a page in the page table may also have its protection bits. These protection bits are known as [ ]

Supervisor state is

Select one:

required to perform any I/O

only allowed to the operating system

entered by programs when they enter the processor

never used

Which of the following is non-preemptive?

Select one:

RR

MLFQ

MLQ

FCFS

Multi-programming places more than one job/program/task in the main memory.

Hãy chọn một:

Đúng

Sai

All the privileged instructions, that is, instructions that need to interact with hardware and resources, and therefore passed on to the OS for execution, are known as system calls.

Hãy chọn một:

Đúng

Sai

The 'Circular wait' condition can be prevented by

Select one:

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

all not correct

using thread

using pipe

The swap space is reserved in _____

Select one:

the hard disk

the main memory

none

any secondary storage

.Which is not the function of the Operating System ?

Select one:

Application management

Memory management

Disk management

Virus Protection

Consider the problem of creating two arrays a and b such that a [i] = f1(i) with 0 ≤ i <n and b [i] = g2(a [i]) with 0 ≤ i <n.

Suppose this problem is separated into two simultaneous processes A and B so that A computes array a and B calculates array b. The processes use two binary semaphores Sa and Sb, both initialized to 0. Array a is shared by the two processes. The code for the process is shown below.

```
Process A:                  Process B:
private i;                  private i;
for(i=0; i<n; i++){         for(i=0; i<n; i++){
   a[i] = f1(i);               EntryB(Sa,Sb);
   ExitA(Sa,Sb);               b[i] = g2(a[i]);
}                                 }
```

What are the correct codes for ExitA and EntryB ?

Select one:

ExitA(Sa, Sb) { V(Sa); P(Sb);} EntryB(Sa, Sb) { V(Sb); P(Sa);}

ExitA(Sa, Sb) { V(Sa); V(Sb);} EntryB(Sa, Sb) { P(Sa); P(Sb);}

ExitA(Sa, Sb) { P(Sb); V(Sa);} EntryB(Sa, Sb) { V(Sb); P(Sa);}

ExitA(Sa, Sb) { P(Sa); V(Sb);} EntryB (Sa, Sb) { P(Sb); V(Sa);}

Insert the missing word to make the statement below correct:

Trả lời [ ] time is amount of time to execute a particular process

Consider the following system with time quantumn = 2

| Process | Arrival Time | Burst time |
|---|---|---|
| P1 | 0 | 5 |
| P2 | 1 | 7 |
| P3 | 3 | 4 |

The sequence of completion of the processes using the FCFS and RR scheduling is

Select one:

FCFS: P1, P3, P2 RR: P1, P3, P2

FCFS: P1, P3, P2 RR: P1, P2, P3

FCFS: P1, P2, P3 RR: P1, P3, P2

FCFS: P1, P2, P3 RR: P1, P2, P3

Consider the following system:

| Process | Arrival Time | Burst time |
|---|---|---|
| P3 | 2 | 8 |
| P1 | 0 | 5 |
| P4 | 3 | 9 |
| P2 | 1 | 7 |

If preemptive SJF scheduling is performed what will be the average waiting time for the system?

Answer:

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

A, B và C

A và B

A và C

The collection of user program, data section, stack, and the associated attributes is called the _____

Select one:

wait state

running state

process environment

suspended state

Multi-programming is the central concept in operating system that originates all other concepts of operating system.

Hãy chọn một:

Đúng

Sai

.The first program that is executed when the computer is switched on is called

Select one:

bootstrap program

initializer

start program

bootloader

System generation is the process of configuring the OS according to the hardware and other specifications on a particular machine.

Hãy chọn một:

Đúng

Sai

From the system’s viewpoint, the operating system presents a friendly environment wherein the user can work efficiently.

Hãy chọn một:

Đúng

Sai

.Which file keeps commands to execute automatically when OS is started ?

Select one:

any batch file

command.com

autoexec.bat

config.sys

Kernel is the part wherein only essential modules of the operating system are placed.

Hãy chọn một:

Đúng

Sai

If the quantumn time used in the round-robin scheduling algorithm is more than the maximum time required to execute any process, then the algorithm will

Select one:

become to first come first serve

become to shortest job first

become to shortest remaining time

become to priority scheduling

An OS is a software that acts as an interface between the users and hardware of the computer system.

Hãy chọn một:

Đúng

Sai

Fixed partitioning method suffers from [ ] fragmentation.

.Direct Memory Access is used for ....

Select one:

High speed devices

Utilizing CPU cycles

Low speed devices

All of the mentioned

Layered architecture provides the modularity wherein there is a defined layer for each group of functionality.

Hãy chọn một:

Đúng

Sai

A page table entry provides [ ]

A process may transition to the Ready state by which of the following actions?

Select one:

Completion of an I/O event

Awaiting its turn on the CPU

Newly-admitted process

All of the above

System programs are utilities programs, which help the user and may call for further system calls.

Hãy chọn một:

- Đúng
- Sai

In a time-shared system, Round-Robin CPU scheduling is used.

Select one:

- 
The shortest Request time First (SRTF) technique is achieved by using medium-sized time slices.
- 
When employing very small time slices, the algorithm degenerates into the Last-In First-Out (LIFO) method.
- 
Performance is improved by employing extremely short time slices.
- 
When large time slices are used, the method degenerates into the First Come First Served (FCFS) algorithm.

The huge size of a page table is handled with the hierarchical page table structure or inverted page table structure.

Hãy chọn một:

- Đúng
- Sai

Which system call returns the PID of the terminated child process?

Select one:

- 
fork
- 
wait
- 
exit
- 
get

Belady’s anomaly is observed in the _____ algorithm

Select one:

- 
CLOCK
- 
LRU
- 

OPT

FIFO

A system has 3 processes sharing 4 resources of the same type. If each process needs up to 2 resources then deadlock

Insert two missing word to make the statement below correct:

In CPU scheduling, time taken for switching from one process to other is Trả lời

From the system's viewpoint, the operating system acts as an easy interface between the user and computer system.

Hãy chọn một:

Đúng

Sai

Match the following:

| List - I | List - II |
|---|---|
| (a) Spooling | (i) Allows several jobs in memory to improve CPU utilization |
| (b) Multiprogramming | (ii)Access to shared resources among geographically dispersed computers in a transparent way |
| (c)Time sharing | (iii) Overlapping I/O and computations |
| (d)Distributed computing | (iv)Allows many users to share a computer simultaneously by switching processor frequently |

codes:

| | (a) | (b) | (c) | (d) |
|---|---|---|---|---|
| (1) | (iii) | (i) | (ii) | (iv) |
| (2) | (iii) | (i) | (iv) | (ii) |
| (3) | (iv) | (iii) | (ii) | (i) |
| (4) | (ii) | (iii) | (iv) | (i) |

Select one:

(3)

(1)

(2)

(4)

Clear my choice

Trang tru? c

.How does the software trigger an interrupt ?

Select one:

Running an interrupt trigger program

Sending signals to CPU through bus

Executing a system program

Invoking a system call

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

Select one:

Specific processes cause deadlock

set of processes in the deadlock queue

set of deadlocked processes

All correct

The OS is generally in the [ ] memory addresses in the memory.

. Which is built directly on the hardware?.

Select one:

Operating system

Database system

Application Software.

Computer Environment.

Memory mapping through TLB is known as ___

Select one:

TLB mapping

associative mapping

none

physical mapping

The operating system which was most popular in 1981 is called

Select one:

MS-DOS

OS/360

PC-DOS

CP/M

Suppose there are 4 empty original page frames. The page reference string is:

1, 2, 3, 4, 2, 1, 5, 6, 2, 1, 2, 3, 7, 6, 3, 2, 1, 2, 3, 6

When using the LRU page replacement algorithm, how many referenced pages are in and not in the memory, respectively?

Select one:

hit = 11  miss = 9

ba tùy chọn còn lại đều không đúng

hit =  9  miss = 11

hit = 14  miss = 6

A virtual memory system uses the FIFO page replacement policy and allocates a fixed number of frames to the process. Consider the following statements:

P1: Increasing the number of page frames allocated to a process sometimes increases the page fault rate

P2: Some programs do not show local reference.

Which of the following is correct?

Select one:

Both P1 and P2 are correct and P2 is the reason for P1

Both P1 and P2 are wrong

P1 is wrong but P2 is right

Both P1 and P2 are correct and P2 is not the reason for P1

What is the semaphore initial value allows only one of many processes to enter its critical section ?

Select one:

0

8

4

1

A page table must be updated as soon as the [ ] address of a page changes.

In a paging scheme, 16-bit addresses are used with a page size of 512 bytes. If the logical address is 0000010001111101.

The physical address will be [ ] , if the frame address corresponding to the computed page number is 15.

The performance of Round Robin algorithm depends heavily on

Select one:

the I/O bursts of the process

the CPU bursts of the process

size of the process

the size of the time quantum

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

Consider the following system:

| Process | Arrival Time | Burst time |
|---|---|---|
| P0 | 2 | 3 |
| P1 | 3 | 1 |
| P2 | 4 | 2 |
| P3 | 0 | 7 |
| P4 | 1 | 5 |
| P5 | 5 | 1 |

If SRT scheduling is performed what will be the average waiting time of the processes?

Answer:

The process of initializing a microcomputer with its operating system is called ___

Select one:

Boot recording

Cold booting

Booting

Warm booting

Which of the following are loaded into main memory when the computer is booted ?

Select one:

internal command instructions

external command instructions

word processing instructions

utility programs

Consider the following scenario of processes:

| Process | Arrival Time | Burst time | Priority |
|---|---|---|---|
| P1 | 9 | 16 | 4 |
| P2 | 2 | 10 | 1 |
| P3 | 12 | 2 | 3 |
| P4 | 5 | 28 | 0 |
| P5 | 0 | 11 | 2 |

The waiting time of P5 using preemptive priority scheduling is

Select one:

26

47

38

23

The processes are classified into different groups in which of following scheduling algorithms?

Select one:

SJF

RR

các tùy chọn còn lại đều sai

MLQ

priority

Consider the code for P1 and P2 processes to access their critical section whenever needed, as shown below. The initial values of shared boolean variables S1 and S2 are randomly assigned.

```
P1:
while (S1 == S2) ;
Critica1 Section
S1 = S2;
```

```
P2:
while (S1 != S2) ;
Critica1 Section
S2 = not(S1);
```

Which of the following is a statement describing achieved properties?

Select one:

Progress and mutual exclusion

Neither Progress or not Mutual exclusion

Mutual exclusion but not progress

Progress but not mutual exclusion

Insert 6 missing characters to make the statement below correct:

```
The Windows CreateProcess() system call creates a new process. The equivalent

system call in UNIX is Trả lời
```

Larger the page size _____ will be the memory wastage.

Select one:

no effect

the less

none

the more

.Which of the following Operating systems is better for implementing a Client-Server network ?

Select one:

MS DOS.

Windows 2000

Windows 98

Windows 95

Fixed partitioning is a method of partitioning the memory at the time of _____

Select one:

compilation

none

system generation

run-time

An LRU can be implemented with three approaches: stack, counter, and matrix.

Hãy chọn một:

- Đúng
- Sai

***Thrashing*** take place when

Select one:

- a fault page happen
- Processes are in running state
- Processes frequently access pages not memory
- Processes are in waiting state

.Which is the first program run on a computer when the computer boots up ?

Select one:

- System operations
- Operating sytem
- None
- System program

Consider a system contains n processes and system uses the round-robin scheduling algorithm, which data structure is best suited for ready queue?

Select one:

- tree
- stack
- circular queue
- queue

Insert two missing words to make the statement below correct:

The Trả lời [ ] schedulers are the CPU schedulers that select a process from the ready queue and allocate the CPU to one of them

Pages and frames are [ ] in size.

A buddy system is a compromise between

Select one:

internal and external fragmentation

fixed and dynamic partitioning

paging and segmentation

none

_____ observes the working set of each process while executing and allocates the number of frames required by it.

Select one:

User

Operating system

Processor

Programmer