**Which of the following are the thread synchronization primitives supported by solaris**

**i) Mutual exclusion ii) Semaphores iii) Signals iv) Condition variables**

Select one:

a. ii, iii and iv only

b. i, ii and iii only

c. All i, ii, iii and iv

d. i, ii and iv only

**A system has 3 processes P1, P2, P3 and 3 resources R1, R2, R3. R1 and R3 have 2 units, R2 has 1 unit. P1 holds one unit R1 and 1 unit of R3, and is claiming 1 unit of R2. P2 holds one unit R1 and 1 unit R2 and is requesting 1 unit of R3. P3 is holding 1 unit of R3 and is requesting 1 unit of R2. Graph the resource allocation for this case. Does a deadlock exist?**

Hãy chọn một:

Đúng

Sai

**The maximum amount of information that is available with one position of the disk access arm for a removal disk pack (without further movement of the arm with multiple heads) is**

Select one:

a. a plate of data

b. a cylinder of data

c. a track of data

d. a block of data

**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:

a. 3

b. 2

c. 4

d. 1

**Which of the following requires a device driver?**

Select one:

a. Cache

b. Disk

c. Register

d. Main memory

**Working set (t, k) at an instant of time, t, is**

Select one:

a. the set of k reference with high frequency

b. the set of k future references that the operating system will make

c. the set of pages that have been referenced in the last k time units

d. the set of future references that the operating system will make in the next 'K' time units

**Determine the number of page faults when references to pages occur in the following order : 1, 2, 4, 5, 2, 1, 2, 4. Assume that the main memory can accommodate 3 pages and the main memory already has the pages 1 and 2, with page 1 having been brought earlier than page 2. (LRU algorithm is used)**

Select one:

a. None of these

b. 3

c. 4.

d. 5

**Consider a system with four physical memory frames that are initially empty and the page references given below.**

**0 0 1 1 0 1 2 2 1 2 3 3 1 4 4 0 0 2 1 1 2 1 4 0 4 0 5 1**

**Show which references cause page faults and show which pages are in which frames at the end of the sequence of references using FIFO, LRU, and Second Chance page replacement. Assume that when there are empty frames, pages are loaded into the lowest available frame**

Answer 1 Chọn…

Answer 2 Chọn….

Answer 3 Chọn…

**Disk requests come to a disk driver for cylinders 10, 22, 20, 2, 40, 6 and 38, in that order at a time when the disk drive is reading from cylinder 20. The seek time is 6 ms per cylinder. If the scheduling algorithm is the closest cylinder next, then the total seek time will be**

**In a system with 32 bit virtual addresses and 1 KB page size, use of one-level page tables for virtual to physical address translation is not practical because of**

Select one:

a. the large amount of external fragmentation

b. the large computation overhead in the translation process

c. the large amount of internal fragmentation

d. the large memory overhead in maintaining page tables

**We can prevent deadlock by denying any one of those four necessary conditions. One method of denying the "wait for" conditions suggested by Havender requires that a process must request all of the resources it will need before the system lets it proceed. The system grants resources on an "all or none" basis. Discuss its disadvantages.**

**Có thể chọn nhiều đáp án**

Waste resources requested but not yet assigned

Relatively easy to implement

Indefinite postponement is possible

Relative efficient for execution. Once a process is initiated, it does not have to wait for more resources

Waste resources being accumulated for a request, but not yet assigned

**Consider the following heap : JOB1-50 FREE-150 JOB2-300 FREE-350 JOB3-600**

**The sequence of requests for blocks of sizes 300, 25, 125, 50 can be satisfied if we use**

Select one:

a. best fit, but not first fit

b. first fit, but not best fit

c. either first fit or best fit policy

d. None of these

**Which of the following are the major disadvantages of deadlock avoidance.**

i) Future resource requirements must be known

ii) Process can be blocked for long periods

iii) Inherent preemption losses

**An unpaged or read-ahead cache associates disk domains with the address of the read and continues for a specific length. The major disadvantage of unpaged cache is that**

Select one:

a. it allows cache domain to contain redundant data

b. its access time is greater than that of paged caching

c. it does not allow writes to be cached

d. read ahead cache domain blocks are necessarily fixed in size

**The maximum amount of information that is available with one position of the disk access arm for a removal disk pack (without further movement of the arm with multiple heads) is**

Select one:

a. a plate of data

b. a cylinder of data

c. a track of data

d. a block of data

**In which of the following relation, page to replace is chosen from among the frames allocated to that process.**

i) Fixed allocation, Local Scope

ii) Fixed allocation, Global Scope

iii) Variable allocation, Local Scope

iv) Variable allocation, Global Scope

**Numeric identifiers that may be stored with the process control block includes**

**i) Identifier of the process ii) Identifier of the process that created parent process iii) User identifier**

Select one:

a. i and ii only

b. i and iii only

c. All i, ii and iii

d. ii and iii only

**True or false :**

a. Shortest Time Remaining (preemptive) always has a lower average response time than Shortest Job First (non-preemptive).

b. Shortest Job First (non-preemptive) is fair.

c. The shorter the job, the better service it should receive.

d. Because Shortest Job First (non-preemptive) gives preference to short jobs, it is useful in timesharing.

**Thrashing occurs when:**

The scheduler flip-flops between two processes, leading to the starvation of others.

Two or more processes compete for the same region of shared memory and wait on mutex locks.

The sum of the working sets of all processes exceeds available memory.

Multiple processes execute in the same address space.

**Mutual exclusion is referred as …….**

Select one:

a. is found only in the windows NT operating system

b. prevents deadlock

c. requires semaphore to implement

d. if one process is in a critical region others are excluded

**The memory table includes which of the following information**

**i) The allocation of main memory to processes**

**ii) The allocation of secondary memory to processes**

**iii) An information needed to manage virtual memory**

Select one:

a. ii and iii only

b. i and iii only

c. All i, ii and iii

d. i and ii only

**In a system that does not support swapping \_\_\_\_\_\_\_\_\_\_\_\_**

a) the compiler normally binds symbolic addresses (variables) to relocatable addresses

b) the compiler normally binds symbolic addresses to physical addresses

c) the loader binds relocatable addresses to physical addresses

d) binding of symbolic addresses to physical addresses normally takes place during execution

**In a system that does not support swapping**

Select one:

a. the compiler normally binds symbolic addresses to physical address

b. the compiler normally binds symbolic addresses (variables) to relocatable addresses

c. the loader binds relocatable addresses to physical addresses

d. binding of symbolic addresses to physical addresses normally takes place during execution

**Which of the following is/are the restrictions on deadlock avoidance.**

i) The maximum resource requirement for each process must be stated in advance

ii) There must be fixed number of resources to allocate

iii) No process may exit while holding resources.

Đáp án : cả 3

**If a virtual memory system has 4 pages in real memory and the rest must be swapped to disk. Which of the following is the hit ratio for the following page address stream. Assume that memory starts emply. Use the First In First Out (FIFO) algorithm.**

Select one:

a.15%

b.10%

c.31%

d.25%

**A semaphore consists of which of the following elements.**

**i) Current value of the semaphore**

**ii) Process ID of the last process to operate on the semaphore**

**iii) Number of processes waiting for the semaphore value to be one**

Select one:

a. All i, ii and iii

b. i and ii only

c. i and iii only

d.ii and iii only

**A system uses 32-bit logical addresses, a 16K byte (214) page size, and 36-bit physical addresses (64 GB memory). What is the size of the page table?**

Trả lời

a. 24 entries

b. 218 entries

c. 222 entries

d. 214 entries

**A file server uses a form of locking as a concurrency control technique. When a file is locked by a client, all attempts to use or lock the file by other clients are prevented by the server. A potential problem exists if a client requests a lock on a file and then crashes. This situation could result in the file being locked indefinitely.**

**To prevent this from occurring, the file server starts a time whenever it sets a lock. If the timer runs out before the file is unlocked the server assumes that the client has crashed and releases the lock. Which of the following is (are) true of this strategy?**

Select one:

a. It will fail to guarantee the prevention of indefinite lockout

b. It will guarantee mutual exclusion.

c. It provides a solution to the problem of preventing indefinite lockout.

d. It may result in interleaved access to a file by two or more clients.

**With respect to ………………………. , in virtually all operating systems each process is assigned a unique numeric identifier, which may simply be an index into the primary process table.**

Select one:

a. Process control information

b. Process identification

c. Processor state information

d. Processor sate identification

**Disk requests come to a disk driver for cylinders 10, 22, 20, 2, 40, 6 and 38, in that order at a time when the disk drive is reading from cylinder 20. The seek time is 6 ms per cylinder. The total seek time, if the disk arm scheduling algorithm is first-come-first-served is**

Select one:

a. 876 ms

b. 900 ms

c. 360 ms

d. 850 ms

**In a paged segmented scheme of memory management, the segment table itself must have a page table because**

Select one:

a. the processor's description base register points to a page table

b. segment tables point to page tables and not to the physical location of the segment

c. each segment is spread over a number of pages

d. the segment is spread over a number to hit in one page

**Consider following page trace : 4,3,2, 1,4,3,5,4,3,2, 1,5**

**Number of page faults that would occur if FIFO page replacement algorithm is used with. Number of frames for the Job M=3, will be**

**Consider a logical address space of 8 pages of 1024 words mapped into memory of 32 frames. How many bits are there in the logical address?**

Select one:

a. 9 bits

b. 15 bits

c. 11 bits

d. 13 bits

**Fixed partitions**

Select one:

a. are very common in current operating systems

b. are most used on large mainframe operating systems

c. are very efficient in memory utilization

d. are very inefficient in memory utilization

**Mutual exclusion problem occurs between**

Select one:

a. none of these

b. processes that do not use the same resource

c. two disjoint processes that do not interact

d. processes that share resources

**Which of the following is/are the reasons for the process suspension**

**i) The operating system needs to release sufficient main memory to bring in a process that is ready to execute.**

**ii) The operating system may suspend a background or utility process or a process that is suspected for causing a problem.**

**ili) A user may wish to suspend execution of a program for purposes of debugging or in connection with the use of resource.**

Select one:

a. ii and iii only

b. All i, ii and iii

c. i and iii only

d. i and ii only

**Disk requests come to a disk driver for cylinders 10, 22, 20, 2, 40, 6 and 38, in that order at a time when the disk drive is reading from cylinder 20. The**

**seek time is 6 ms per cylinder. If the scheduling algorithm is the closest cylinder next, then the total seek time will be**

Select one:

a. 900 ms

b. 876 ms

c. 850 ms

d. 360 ms

**Consider a set of n tasks with known runtimes rl, f2, . m to be run on a uniprocessor machine. Which of the following processor scheduling) algorithms will result in the maximum throughout ?**

select one.

a. Highest-Response-Ratio-Next|

b. Shortest-Job-First

c. kouno kobin

d. Fistcome First Semed

**... is a memory management scheme that permits the physical address space of a process to be noncontiguous.**

Select one:

a. Paging

b. Segmentation

c. main memory

d. Virtual memory

**m' processes share in resources of the same type. The maximum need of each process doesn't exceed in and the sum all the their maximum needs is always less than m + n. In this set up**

Select one:

a. deadlock can never occur

b. deadlock may occur

c. deadlock has to occur

d. None of these

**Using a larger block size in a fixed block size file system leads to**

Select one:

a. better disk throughput and better disk space utilization

b. poorer disk throughput and poorer disk space utilization

c. poorer disk throughput but better disk space utilization

d. better disk throughput but poorer disk space utilization