



Universidad Carlos III de Madrid  
Computer Science and Engineering Department  
Operating Systems Course



Answer the test in the next table. Each three wrong answers will rest 1 right answer.

NAME:

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	

**QUESTIONS**

1.- Paging is a memory-management scheme that...

- A) Involves breaking physical memory into fixed-sized blocks called pages and breaking logical memory into blocks of different size called frames.
- B) Stores the information regarding the allocation details of physical memory (frames allocated, frames available, total frames) in the translation look-aside buffer (TLB).
- C) Has the disadvantage of not allowing to share common code, being a drawback for time-sharing environments.
- D) When page tables are too large due to a large logical address space, the two-level algorithm can be used to split the page table into smaller pieces.

2.- Which of the following sentences is false?

- A) In pages, the valid-invalid bit is set by the Operating System
- B) If a swapping policy uses priority-based scheduling algorithms, it can be called "roll out, roll in"
- C) For simplicity of implementation for segmentation, segments have all the same size
- D) In the variable-partition scheme, initially, all memory is considered a large block of available memory for user processes, also called a hole

3.- Which of the following information is not stored in an i-node

- A) Owner ID
- B) Pointer to the current file read position
- C) The creation date
- D) The RWX bits

4.- Which of the following alternatives has a page table with a size related to the physical memory?

- A) Two-level page table scheme
- B) Hashed page table
- C) Inverted page table
- D) None of these alternatives

5.- Select the correct answer regarding the readers-writers problem.

- A) Readers can have concurrency while only one writer can perform any operation when it is being executed

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B) A reader can only be executed when there are no other readers that are waiting for execution.

C) If a reader performs a request while a writer is being executed, it will be executed the first after the write operation is finished.

D) When readers have priority, read operations can enter the critical section as long as there is another read in the critical section and no writer requests, because as soon as a writer appears it will be executed before any other read.

6.- Which are Readers-Writers problem conditions?

A) Any number of readers may read from data area concurrently.

B) Only a writer may modify information at once.

C) During a write no reader may perform a request.

D) All of the above.

7.- What is one problem with asynchronous cancellation?

A) The thread may not check often enough to see if it has been cancelled.

B) It is slower than synchronous cancellation.

C) The thread may be cancelled at an inopportune time (like when updating its data)

D) There are no risks with asynchronous cancellation.

8.- The four main object types defined by the Linux Virtual File System are:

A) inodes, files, superblocks, dentry (directory entry)

B) inodes, files, superblocks, partitions

C) vnodes, files, superblocks, mount tables

D) vnodes, files, superblocks, partitions

9.- Select the correct answer about PCB:

A) All information referred to a process is stored in its PCB.

B) When a process execution is finalized, the PCB is released.

C) Data can be shared in the PCB.

D) All the previous answers are incorrect.

10.- If in Round-Robin scheduling "q" equals infinity, we could say that this would be the same as:

A) Shortest job first

B) First to come first to serve

C) Both are correct

D) None of the above

11.- Select the incorrect process mode

A) User

B) Privileged

C) Register

D) Kernel

12.- A user with uid and gid = 12 = 1 is the owner of a file protection mode rwxr-x ---. Another user with uid and gid = 3 = 1 wants to run the file. Can you do it?

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- A) Every Time.
- B) Do Not Ever.
- C) Only if he puts the setuid bit.
- D) Only if he puts the bit getuid.

13.- Which one is the correct order for computer structure?

- A) hardware-services-kernel-system calls-system software
- B) hardware-kernel-services-system calls-system software
- C) hardware-kernel-system calls-services-system software
- D) hardware-kernel-system calls-system software-services

14.- Select the INCORRECT answer:

An interrupt handler (interrupt service routine)...:

- A) Executes an especific service.
- B) Determines address of service routine.
- C) Retrieves parameters sent by the user process.
- D) Transfers control to service routine.

15.- The bit of user/kernel modes:

- A) Is provided by the operating system
- B) Provides the ability to distinguish when a process can run privileged instructions.
- C) Is changed only at the startup of the system
- D) None of the previous answers are correct