Started on	Monday, 16 January 2023, 9:00 PM
State	Finished
Completed on	Monday, 16 January 2023, 10:05 PM
Time taken	1 hour 5 mins
Grade	**11.10** out of 15.00 (**74**%)

Question **1**

Partially correct

Mark 0.67 out of 1.00

Select the correct statements about hard and soft links

Select one or more:

- [ ] a. Deleting a soft link deletes only the actual file
- [ ] b. Soft link shares the inode of actual file
- [x] c. Soft links can span across partitions while hard links can't ✔
- [x] d. Deleting a hard link deletes the file, only if link count was 1 ✔
- [ ] e. Hard links increase the link count of the actual file inode
- [ ] f. Hard links enforce separation of filename from it's metadata in on-disk data structures.
- [ ] g. Hard links can span across partitions while soft links can't
- [ ] h. Soft links increase the link count of the actual file inode
- [x] i. Deleting a soft link deletes the link, not the actual file ✔
- [x] j. Hard links share the inode ✔
- [ ] k. Deleting a soft link deletes both the link and the actual file
- [ ] l. Deleting a hard link always deletes the file

Your answer is partially correct.

You have correctly selected 4.
The correct answers are: Soft links can span across partitions while hard links can't, Hard links increase the link count of the actual file inode, Deleting a soft link deletes the link, not the actual file, Deleting a hard link deletes the file, only if link count was 1, Hard links share the inode, Hard links enforce separation of filename from it's metadata in on-disk data structures.

Question **2**

Correct

Mark 1.00 out of 1.00

When you turn your computer ON, you are often shown an option like "Press F9 for boot options". What does this mean?

a. The choice of the boot loader (e.g. GRUB or Windows-Loader)
b. The choice of which OS to boot from
c. The choice of booting slowly or fast
d. The BIOS allows us to choose the boot device, the device from which the boot loader will be loaded ✔

The correct answer is: The BIOS allows us to choose the boot device, the device from which the boot loader will be loaded

Question **3**

Partially correct

Mark 0.67 out of 1.00

Order the following events in boot process (from 1 onwards)

BIOS	1	✔
Shell	5	✖
Boot loader	2	✔
OS	3	✔
Login interface	6	✖
Init	4	✔

Your answer is partially correct.

You have correctly selected 4.
The correct answer is: BIOS → 1, Shell → 6, Boot loader → 2, OS → 3, Login interface → 5, Init → 4

Question **4**

Partially correct

Mark 0.60 out of 1.00

Select all the correct statements about two modes of CPU operation

Select one or more:

- [x] a. The software interrupt instructions change the mode from user mode to kernel mode and jumps to predefined location simultaneously ✔
- [ ] b. Some instructions are allowed to run only in user mode, while all instructions can run in kernel mode
- [x] c. There is an instruction like 'iret' to return from kernel mode to user mode ✔
- [ ] d. The two modes are essential for a multiprogramming system
- [x] e. The two modes are essential for a multitasking system ✔

Your answer is partially correct.

You have correctly selected 3.
The correct answers are: The two modes are essential for a multiprogramming system, The two modes are essential for a multitasking system, There is an instruction like 'iret' to return from kernel mode to user mode, The software interrupt instructions change the mode from user mode to kernel mode and jumps to predefined location simultaneously, Some instructions are allowed to run only in user mode, while all instructions can run in kernel mode

Question **5**

Correct

Mark 1.00 out of 1.00

Is the terminal a part of the kernel on GNU/Linux systems?

- (●) a. no ✔ wrong
- ( ) b. yes

The correct answer is: no

Question **6**

Partially correct

Mark 0.50 out of 3.00

Select correct statements about mounting

Select one or more:

- [ ] a. Mounting makes all disk partitions available as one name space
- [ ] b. On Linuxes mounting can be done only while booting the OS
- [x] c. It's possible to mount a partition on one computer, into namespace of another computer. ✔
- [x] d. The existing name-space at the mount-point is no longer visible after mounting ✔
- [x] e. The mount point can be a file as well ✖
- [ ] f. The mount point must be a directory
- [ ] g. Mounting deletes all data at the mount-point
- [x] h. In operating systems with a pluggable kernel module for file systems, the code for mounting a particular file system is provided by the module of that file system. ✔
- [x] i. Mounting is attaching a disk-partition with a filesystem on it, into another file system name-space ✔
- [x] j. Even in operating systems with a pluggable kernel module for file systems, the code for mounting any particular file system must be already present in the operating system system kernel ✖

Your answer is partially correct.

You have correctly selected 4.
The correct answers are: Mounting is attaching a disk-partition with a filesystem on it, into another file system name-space, The mount point must be a directory, The existing name-space at the mount-point is no longer visible after mounting, Mounting makes all disk partitions available as one name space, In operating systems with a pluggable kernel module for file systems, the code for mounting a particular file system is provided by the module of that file system., It's possible to mount a partition on one computer, into namespace of another computer.

Question **7**

Correct

Mark 1.00 out of 1.00

A process blocks itself means

- ( ) a. The kernel code of an interrupt handler, moves the process to a waiting queue and calls scheduler
- ( ) b. The application code calls the scheduler
- (•) c. The kernel code of system call, called by the process, moves the process to a waiting queue and calls scheduler ✔
- ( ) d. The kernel code of system call calls scheduler

The correct answer is: The kernel code of system call, called by the process, moves the process to a waiting queue and calls scheduler

Question **8**

Correct

Mark 1.00 out of 1.00

which of the following is not a difference between real mode and protected mode

- a. processor starts in real mode
- b. in real mode the addressable memory is less than in protected mode
- c. in real mode general purpose registers are 16 bit, in protected mode they are 32 bit
- d. in real mode the segment is multiplied by 16, in protected mode segment is used as index in GDT
- e. in real mode the addressable memory is more than in protected mode ✔

The correct answer is: in real mode the addressable memory is more than in protected mode

Question **9**

Partially correct

Mark 0.67 out of 1.00

Select all the correct statements about bootloader.

Every wrong selection will deduct marks proportional to 1/n where n is total wrong choices in the question.

You will get minimum a zero.

- a. The bootloader loads the BIOS
- b. Bootloaders allow selection of OS to boot from ✔
- c. LILO is a bootloader ✔
- d. Bootloader must be one sector in length
- e. Modern Bootloaders often allow configuring the way an OS boots

Your answer is partially correct.

You have correctly selected 2.
The correct answers are: LILO is a bootloader, Modern Bootloaders often allow configuring the way an OS boots, Bootloaders allow selection of OS to boot from

Question **10**

Correct

Mark 1.00 out of 1.00

Compare multiprogramming with multitasking

- a. A multiprogramming system is not necessarily multitasking ✔
- b. A multitasking system is not necessarily multiprogramming

The correct answer is: A multiprogramming system is not necessarily multitasking

Question **11**

Correct

Mark 1.00 out of 1.00

Consider the following programs

exec1.c

```
#include <unistd.h>
#include <stdio.h>
int main() {
    execl("./exec2", "./exec2", NULL);
}
```

exec2.c

```
#include <unistd.h>
#include <stdio.h>
int main() {
    execl("/bin/ls", "/bin/ls", NULL);
   printf("hello\n");
}
```

Compiled as

```
cc    exec1.c  -o exec1
cc    exec2.c  -o exec2
```

And run as

```
$ ./exec1
```

Explain the output of the above command (./exec1)

Assume that /bin/ls , i.e. the 'ls' program exists.

Select one:

- a. Execution fails as the call to execl() in exec1 fails
- b. "ls" runs on current directory ✔
- c. Execution fails as one exec can't invoke another exec
- d. Program prints hello
- e. Execution fails as the call to execl() in exec2 fails

Your answer is correct.

The correct answer is: "ls" runs on current directory

Question **12**

Correct

Mark 2.00 out of 2.00

What will this program do?

```
int main() {
fork();
execl("/bin/ls", "/bin/ls", NULL);
printf("hello");
}
```

- a. run ls twice ✔
- b. run ls twice and print hello twice, but output will appear in some random order
- c. run ls once
- d. one process will run ls, another will print hello
- e. run ls twice and print hello twice

Your answer is correct.

The correct answer is: run ls twice

◄ Random Quiz - 1 (Pre-Requisite Quiz)

Jump to...

Random Quiz - 3 (processes, memory management, event driven kernel), compilation-linking-loading, ipc-pipes ►