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# Exam 1

## CIS 68C1

### Fall 2002

#### **Instructions**

- Write your name at the top of every sheet.
- For **True/False** and **Multiple Choice** questions, circle the **single** correct answer (true or false, or one of the appropriate letters a – e).
- If you are unclear about something, raise your hand.
- Any form of cheating will result in an automatic F in the course.

#### **Hints for Success**

- Use your knowledge of the fundamentals, and draw conclusions from there.
- Read each problem carefully!
- Try to determine the skills or knowledge a question is attempting to assess.
- Decide if a general answer or specific answer is the best choice.
- There is no penalty for incorrect answers.

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### True / False (2 points each)

1. If you decrease the **nice** value of a process by 10, the UNIX kernel will give more time to the process. (True / False)
2. The `/etc/shadow` file is used on only some UNIX systems. (True / False)
3. SCSI supports only 2 devices per controller. (True / False)
4. The Linux **insmod** command resolves and loads a module's dependencies. (True / False)
5. The KILL and TERM signals are essentially the same thing. (True / False)
6. The scripts in the `/etc/rc.d/rc2.d` directory are used when booting into run level 3. (True / False)
7. The startup script `S28autofs` runs after `K28autofs`. (True / False)
8. The installer program **anaconda** used to install Linux onto a system is a DOS/Windows program. (True / False)
9. The command **ps -f** gives a list of all processes running on the system. (True / False)
10. A process' UID and EUID determines access permissions to files and directories. (True / False)

### Multiple Choice (2 points each)

11. With **umask** set to `022`, what will the permissions be on newly created directories?
  - a. 666
  - b. 755
  - c. 664
  - d. 644
12. Which of the following commands would check a new Linux file system?
  - a. `mkfs -t ext2 /mnt/hda0`
  - b. `fsck -t ext2 /mnt/hde2`
  - c. `fsck -t ext2 /dev/hda3`
  - d. all of the above
13. EGID is used to (NOTE: question was poorly worded – either (a) or (d) is accepted):
  - a. determine a user's access rights
  - b. set permissions on group files
  - c. determine a group's identity
  - d. none of the above
14. The maximum number of primary partitions for IDE hard disks?
  - a. 4 primary partitions
  - b. 3 plus one extended partition
  - c. 8
  - d. both (a) and (b)
15. A `setuid` process:
  - a. can do anything that root can do
  - b. runs with the UID of the user
  - c. runs with the GID of the program's owner
  - d. runs with the EUID of the program's owner
  - e. none of the above

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16. What file does the line below come from?

```
project:*:200:sam,jane
```

- a. /etc/passwd
- b. /etc/shadow
- c. /etc/rc.d/init.d
- d. /etc/group
- e. none of the above

17. The output below is from an `ls -l` command. What type of file is the file below?

```
brw-rw---- 1 root disk          3, 66 Aug 24 2000 hdb2
```

- a. binary
- b. block
- c. ASCII or text
- d. character device
- e. none of the above

18. The partial output below is from `ps -ef`. Which command would terminate the *runaway* process?

```
UID      PID  PPID  C  STIME TTY          TIME CMD
sam      532   530  0   11:56 tty1        00:01:23 /home/smith/runaway -9
```

- a. kill -9 530
- b. kill -TERM 532
- c. kill -9 runaway
- d. kill -15 -1
- e. kill -9 532

19. Linux kernel modules are `.o` object files that live in:

- a. /usr/include/modules
- b. /lib/modules
- c. /lib/modules/kernel-version
- d. /boot/modules
- e. none of the above

20. Modules are:

- a. automatically loaded during boot
- b. loaded upon reference
- c. unloaded only during reboot
- d. unloaded when no longer in use
- e. both (b) and (d)

21. A corrupt `ext2` filesystem requires running:

- a. newfs
- b. mkfs
- c. fsck
- d. fdisk
- e. none of the above

22. The command `/sbin/nologin` is used:

- a. to disable a user's ftp access
- b. to disable all users from accessing the system
- c. to kill the login process
- d. in /etc/passwd
- e. all of the above

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23. Setuid shell scripts should never be used because:
- they will sometimes fail
  - are difficult to create properly
  - they are inherently insecure**
  - can cause system hangs
24. The **init** process starts up other system process via:
- the /etc/rc.d scripts
  - the file /etc/inittab**
  - both (a) and (b)
  - neither (a) nor (b)
25. Most UNIX commands access files via \_\_\_\_\_; fdisk accesses \_\_\_\_\_ device entries.
- minor devices; major
  - the root; filesystem
  - the filesystem; disk and partition**
  - open/read/write system calls; raw
  - none of the above
26. Two user accounts with the same UID:
- is an error
  - will cause commands (such as ls and who) to become confused when listing files or users
  - is not allowed in UNIX
  - is not a good security practice**
27. LILO and Grub are:
- filesystem formats
  - boot loaders**
  - used to install Linux
  - extensions to the anaconda installer
28. After creating a new user account for user frank, the command:
- ```
# chown -R frank ~frank/.*
```
- is run to give user frank ownership of all files in his home directory
  - is run to give user frank ownership of all dot files in his home directory
  - is a major security breach**
  - will cause a syntax error
  - none of the above
29. is9660, ext2, ext3, and msdos are all types of:
- filesystems**
  - operating systems
  - disk parameters
  - mount options
30. Which list of concepts below are all related to ext3?
- superblock, mls/mcopy, fsck, journaling
  - superblock, fsck, mkfs**
  - dump/restore, mformat, mount
  - swap, mount, eject
31. The PPID of getty or mingetty:
- depends on when the processes were started
  - the same as the PPID for init
  - 1**
  - unable to know from the data given

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32. A program:
- is an instantiation of a process
  - can be an ASCII command file or a binary executable
  - has a UID, EUID, nice value, PID, PPID
  - all of the above
33. System administrators are often responsible for:
- system configuration
  - software installation and configuration
  - problem diagnosis and monitoring
  - user assistance
  - all of the above
34. The file /etc/fstab contains:
- a list of filesystems to mount during multi-user boot
  - a list of exported environment variables
  - a list of share points
  - the list of already mounted filesystems
35. LKMs are:
- statically built into a Linux kernel
  - either statically or dynamically loaded
  - system configuration entries
  - virtual filesystems
  - none of the above
36. The command below will create how many alternate superblocks?
- ```
# mkfs -t msdos /dev/floppy
```
- 0
  - 1
  - 2
  - 3
37. The signal TSTP:
- can never be caught, blocked, or ignored
  - is issued by most shells
  - will kill the current foreground process
  - is rarely used
38. The command to deliver a signal:
- is named signal
  - is both built into the shells and is a standalone command
  - can only be used by the superuser
  - all of the above
39. The programs used generally only by system administrators live in:
- /bin and /usr/bin
  - /usr/adm
  - /usr/sbin
  - /var/admin
40. /etc is:
- always part of the root filesystem
  - a directory for administrative settings and configuration files
  - critical to system boot
  - all of the above