PRINT Name: _____

Test Version: 188   **One-Answer Multiple Choice**   **183 Questions – 30 of 30%**

☞ Read **all** the words of these instructions and **both** sides (back and front) of all pages.
☞ Put your name on this Question Sheet. You may write or draw on this Question Sheet.
☞ Use your full, unabbreviated name on the mark-sense form. Do not abbreviate your name.
☞ Put the three-digit **Test Version** above into **NO. OF QUESTIONS** and **NO. OF STUDENTS**
☞ Fill in the bubbles with pencil only, no pen. Enter your NAME, Test Version, and answers.
☞ Manage your time. Answer questions you know, first. One Answer per question.
_____

1. What command creates an **ext3** file system on *device ?*
   a. **mount -t ext3** *device*   *b.* **fdisk -t ext3** *device*
   c. **swapon -t ext3** *device*   *d.* **file -t ext3** *device*
   e. **mkfs -t ext3** *device*

2. Which is the best choice for an extended partition size that will hold exactly three 100MB logical partitions?
   a. 100MB   *b.* 290MB   *c.* 400MB
   d. 300MB   *e.* 320MB

3. User **bob** is in groups **bg1** and **bg2**. User **pat** is in group **pgg**.
   dr--r-x-w- 2 bob pgg 60 Jan 1 1:00 foo
   -rwxrwxr-x 1 bob bg2 0 Jan 1 1:00 foo/bar
   a. **pat** can rename the file
   b. **bob** can create a new file in the directory
   c. **bob** can access and write on the file
   d. **bob** can list names in the directory
   e. **pat** can access and write on the file

4. What value **umask** gives a new file permissions **r--r-----**?
   a. **110**   *b.* **326**   *c.* **440**   *d.* **447**   *e.* **220**

5. Which command line would show the inode number of a file?
   a. **ls -l file**   *b.* **ls -i file**   *c.* **cat -l file**
   d. **find -i file**   *e.* **cat -i file**

6. What command modifies existing account information (and possibly home directory)?
   a. **passwd**   *b.* **newuser**   *c.* **makeuser**
   d. **adduser**   *e.* **usermod**

7. What GRUB internal command will set a partition prefix that will prefix all file names typed without partition prefixes, e,g. **/grub/menu.lst**?
   a. **default=(hd0,0)**   *b.* **root=(hd0,0)**
   c. **root (hd0,0)**   *d.* **kernel (hd0,0)**
   e. **title (hd0,0)**

8. User **bob** is in groups **bg1** and **bg2**. User **pat** is in group **pgg**.
   d-w-rwx-wx 2 bob ted 60 Jan 1 1:00 foo
   -r-xrwxrwx 1 pat bg2 0 Jan 1 1:00 foo/bar
   a. **bob** can create a new file in the directory
   b. **pat** can access and write on the file
   c. **pat** can rename the file
   d. **bob** can access and write on the file
   e. **bob** can list names in the directory

9. Given the following, can user **bird** in group **sesame** append to **./foo**?
   dr-xr-xr-x 2 root sesame 4096 Oct 7 14:00 .
   -r-xrwxrwx 1 bird sesame 123 Oct 4 14:05 foo
   a. No, because the directory is not accessible to **bird**
   b. Yes; permissions don´t apply because **bird** owns **foo**
   c. No, because **bird** has no write permission on the directory
   d. No, because execute permissions are not set for **bird** on **foo**
   e. No, because **bird** has no write permissions on **foo**

10. What command runs a file system check on a disk partition:
    a. **mkfs** *partition*   *b.* **mount** *partition*
    c. **fdisk** *partition*   *d.* **chkconfig** *partition*
    e. **fsck** *partition*

11. Given my directory **dir** and my file **dir/bar** owned by me, which permissions allow me to access and change or create new content (data) in the file **dir/bar** but not delete the file?
    a. Permissions **100** on directory **dir** and **100** on file **dir/bar**.
    b. Permissions **600** on directory **dir** and **700** on file **dir/bar**.
    c. Permissions **200** on directory **dir** and **200** on file **dir/bar**.
    d. Permissions **400** on directory **dir** and **400** on file **dir/bar**.
    e. Permissions **100** on directory **dir** and **200** on file **dir/bar**.

12. User **bob** is in groups **bg1** and **bg2**. User **pat** is in group **pgg**.
    drw---x--- 2 pat bg2 60 Jan 1 1:00 foo
    -r------w- 1 pat ted 0 Jan 1 1:00 foo/bar
    a. **pat** can rename the file
    b. **bob** can access and write on the file
    c. **bob** can list names in the directory
    d. **bob** can rename the file
    e. **pat** can create a new file in the directory

13. Under what directory are system log files usually stored?
    a. **/boot/grub**   *b.* **/log/var**   *c.* **/var/log**
    d. **/grub/boot**   *e.* **/etc/log**

14. What command line modifies and moves (in one command line) the home directory **foo** to **bar** for the existing user **bob**?
    a. `usermod -dm /home/bar bob`
    b. `usermod -d -m /home/bob bar`
    c. `usermod -d -m /home/bar bob`
    d. `usermod -m -d /home/foo /home/bar`
    e. `usermod -m -d /home/bar bob`

15. User **bob** is in groups **bg1** and **bg2**. User **pat** is in group **pgg**.
    ```
    dr---wx--x 2 bob ted 60 Jan 1 1:00 foo
    --w--w-r-x 1 bob bg2  0 Jan 1 1:00 foo/bar
    ```
    a. **pat** can access and write on the file
    b. **bob** can create a new file in the directory
    c. **pat** can rename the file
    d. **bob** can list names in the directory
    e. **bob** can access and write on the file

16. Approximately how big is an **fdisk** partition size of **12345678** *blocks*?
    a. **12 GB**   b. **12 MB**   c. **12 TB**
    d. **1.2 TB**   e. **1.2 GB**

17. The **minimum** permissions you need to link a file **foo** from directory **a** to directory **b** are:
    a. **rwx** on **a**, **wx** on **b**, none on **foo**
    b. **x** on **a**, **wx** on **b**, none on **foo**
    c. **wx** on **a**, **wx** on **b**, **w** on **foo**
    d. **wx** on **a**, **wx** on **b**, **r** on **foo**
    e. **rwx** on **a**, **wx** on **b**, **rw** on **foo**

18. The **minimum** permissions you need to copy a file **foo** from directory **a** to directory **b** are:
    a. **rx** on **a**, **wx** on **b**, **w** on **foo**
    b. **wx** on **a**, **wx** on **b**, none on **foo**
    c. **x** on **a**, **wx** on **b**, **r** on **foo**
    d. **rwx** on **a**, **wx** on **b**, none on **foo**
    e. **wx** on **a**, **wx** on **b**, **rw** on **foo**

19. What value to **chmod** would change the permissions on a file to **rw-r--r--**?
    a. **644**   b. **211**   c. **344**   d. **311**   e. **244**

20. User **bob** is in groups **bg1** and **bg2**. User **pat** is in group **pgg**.
    ```
    dr-xrwx-wx 2 pat pgg 60 Jan 1 1:00 foo
    -r-xrwxr-x 1 bob bg2  0 Jan 1 1:00 foo/bar
    ```
    a. **pat** can rename the file
    b. **bob** can access and write on the file
    c. **pat** can access and write on the file
    d. **bob** can list names in the directory
    e. **bob** can create a new file in the directory

21. User **bob** is in groups **bg1** and **bg2**. User **pat** is in group **pgg**.
    ```
    dr-xrwx--x 2 pat pgg 60 Jan 1 1:00 foo
    --w----r-x 1 bob bg2  0 Jan 1 1:00 foo/bar
    ```
    a. **pat** can rename the file
    b. **bob** can access and write on the file
    c. **bob** can create a new file in the directory
    d. **pat** can access and write on the file
    e. **bob** can list names in the directory

22. Given my directory **dir** and my file **dir/foo** owned by me, which permissions allow me to access and change or create new content (data) in the file **dir/foo** but not delete the file?
    a. Permissions **500** on directory **dir** and **600** on file **dir/foo**.
    b. Permissions **400** on directory **dir** and **400** on file **dir/foo**.
    c. Permissions **600** on directory **dir** and **700** on file **dir/foo**.
    d. Permissions **100** on directory **dir** and **100** on file **dir/foo**.
    e. Permissions **300** on directory **dir** and **200** on file **dir/foo**.

23. Dereference the following symlink **bar** into its equivalent absolute path:
    ```
    ln -s ../b/../../a/./foo /tmp/a/b/bar
    ```
    a. **/tmp/b/bar**   b. **/tmp/a/b/bar**   c. **/tmp/b/foo**
    d. **/tmp/foo**   e. **/tmp/a/foo**

24. What GRUB line do you modify to boot a machine single-user?
    a. **kernel**   b. **grub**   c. **initrd**
    d. **timeout**   e. **boot**

25. Regarding the **-t type** option, e.g. **-t ext3**:
    a. you can usually omit the type when using **mount**
    b. you must give the type when using **mkswap**
    c. you must give the type when using **fdisk**
    d. you must give the type when using **swapon**
    e. you can usually omit the type when using **mkfs**

26. When you use **chkconfig** to enable a service for Run Level 4, the service will:
    a. be started immediately, no matter what the current Run Level
    b. be stopped, then started, if the current Run Level is 4
    c. be started immediately, if the current Run Level is 4 or less
    d. be enabled for Run Level 4 but will not be started
    e. be started immediately, if the current Run Level is 4

27. Given my directory **dir** and my file **dir/bar** owned by me, which permissions allow me to access and change or create new content (data) in the file **dir/bar** but not delete the file?
    - *a.* Permissions **600** on directory **dir** and **700** on file **dir/bar**.
    - *b.* Permissions **100** on directory **dir** and **100** on file **dir/bar**.
    - *c.* Permissions **300** on directory **dir** and **200** on file **dir/bar**.
    - *d.* Permissions **500** on directory **dir** and **600** on file **dir/bar**.
    - *e.* Permissions **400** on directory **dir** and **400** on file **dir/bar**.

28. The **minimum** permissions you need to append to a file **foo** in directory **a** are:
    - *a.* **wx** on **a**, **w** on **foo**
    - *b.* **wx** on **a**, none on **foo**
    - *c.* **rwx** on **a**, **rw** on **foo**
    - *d.* **rwx** on **a**, none on **foo**
    - *e.* **x** on **a**, **w** on **foo**

29. Given my directory **dir** and my file **dir/f** owned by me, which permissions allow me to access and change or create new content (data) in the file **dir/f** but not delete the file?
    - *a.* Permissions **200** on directory **dir** and **200** on file **dir/f**.
    - *b.* Permissions **100** on directory **dir** and **200** on file **dir/f**.
    - *c.* Permissions **500** on directory **dir** and **100** on file **dir/f**.
    - *d.* Permissions **400** on directory **dir** and **400** on file **dir/f**.
    - *e.* Permissions **600** on directory **dir** and **700** on file **dir/f**.

30. Which of these statements is true?
    - *a.* you can only make links to files owned by you
    - *b.* you may be able to rename a file even if you do not own the file
    - *c.* you can only remove a file name if the file is owned by you
    - *d.* you can only remove a file name if the file is writable by you
    - *e.* you can change the permissions of any file to which you can write

31. Which command line below does not show any lines from inside the file **out**?
    - *a.* **wc out**
    - *b.* **head out**
    - *c.* **tail out**
    - *d.* **more out**
    - *e.* **sort out**

32. Dereference the following symlink **bar** into its equivalent absolute path:
    ```
    ln -s ../b/../../a/../foo /tmp/a/b/bar
    ```
    - *a.* **/tmp/foo**
    - *b.* **/tmp/b/foo**
    - *c.* **/tmp/a/b/bar**
    - *d.* **/tmp/a/foo**
    - *e.* **/tmp/b/bar**

33. In an empty directory, what permissions are on file **???** after these commands:
    ```
    touch ??? *** ; chmod 111 *
    chmod 222 ??? ; chmod 444 '***'
    ```
    - *a.* **rw-rw-rw-**
    - *b.* **-w--w--w-**
    - *c.* **--x--x--x**
    - *d.* **-wx-wx-wx**
    - *e.* **r--r--r--**

34. Given the following, can user **bird** in group **sesame** copy **./foo** to **bar**?
    ```
    drwxr-xrwx 2 root sesame 4096 Oct 7 14:00 .
    -r-xr-xr-x 1 bird sesame 123  Oct 4 14:05 foo
    ```
    - *a.* No, because the directory is not accessible to **bird**
    - *b.* Yes; permissions don´t apply because **bird** owns **foo**
    - *c.* No, because **foo** has no write permissions for **bird**
    - *d.* No, because the directory has no write permissions for **bird**
    - *e.* Yes, because **bird** has read permissions on **foo**

35. On a disk with eight partitions, give the correct partition names after you delete partition **sda5**:
    - *a.* **sda1 sda2 sda3 sda4 sda5 sda6**
    - *b.* **sda1 sda2 sda3 sda4 sda5 sda7 sda8**
    - *c.* **sda1 sda2 sda3 sda4 sda6 sda7 sda8**
    - *d.* **sda1 sda2 sda3 sda4 sda5 sda6 sda8**
    - *e.* **sda1 sda2 sda3 sda4 sda5 sda6 sda7**

36. User **bob** is in groups **bg1** and **bg2**. User **pat** is in group **pgg**.
    ```
    d-wx---rw- 2 bob ted 60 Jan 1 1:00 foo
    ----rwxrwx 1 bob bg2  0 Jan 1 1:00 foo/bar
    ```
    - *a.* **bob** can access and write on the file
    - *b.* **bob** can create a new file in the directory
    - *c.* **bob** can list names in the directory
    - *d.* **pat** can access and write on the file
    - *e.* **pat** can rename the file

37. Which Linux device is the third partition of the first disk?
    - *a.* **/dev/sd31**
    - *b.* **/dev/sd3a**
    - *c.* **/dev/sdc1**
    - *d.* **/dev/sda3**
    - *e.* **/dev/sd1c**

38. User **bob** is in groups **bg1** and **bg2**. User **pat** is in group **pgg**.
    ```
    dr-xrw-rwx 2 pat bg1 60 Jan 1 1:00 foo
    -rwxrwxrwx 1 pat ted  0 Jan 1 1:00 foo/bar
    ```
    - *a.* **pat** can rename the file
    - *b.* **pat** can create a new file in the directory
    - *c.* **bob** can rename the file
    - *d.* **bob** can list names in the directory
    - *e.* **bob** can access and write on the file

39. In an empty directory, what is output on your screen by:
    ```
    mkdir -p a/b/c 1/2/3 ; mv a/b 1/2/3 ; find . -name c
    ```
    - *a.* **./a/b/c**
    - *b.* **./1/2/a/b**
    - *c.* **./1/2/3/c**
    - *d.* **./1/2/3/a/b**
    - *e.* **./1/2/3/b/c**

40. What value **umask** gives a new file permissions **r--r-----**?
    - *a.* **446**
    - *b.* **110**
    - *c.* **237**
    - *d.* **220**
    - *e.* **440**

41. User **bob** is in groups **bg1** and **bg2**. User **pat** is in group **pgg**.
    ```
    dr-xrwx-wx 2 pat ted 60 Jan 1 1:00 foo
    -r-xr-xrwx 1 pat bg2  0 Jan 1 1:00 foo/bar
    ```
    a. **bob** can list names in the directory
    b. **pat** can access and write on the file
    c. **bob** can rename the file
    d. **pat** can create a new file in the directory
    e. **bob** can access and write on the file

42. Which command line below does not show any lines from inside the file **bat**?
    a. **tail bat**   b. **more bat**   c. **ls bat**
    d. **less bat**   e. **head bat**

43. Which file contains a list of file systems to mount when booting the system?
    a. **/etc/init.d**   b. **/etc/fstab**
    c. **/etc/grub.conf**   d. **/var/spool**
    e. **/var/log**

44. User **bob** is in groups **bg1** and **bg2**. User **pat** is in group **pgg**.
    ```
    d--x--xrw- 2 bob pgg 60 Jan 1 1:00 foo
    -r-xrwx-w- 1 bob bg2  0 Jan 1 1:00 foo/bar
    ```
    a. **bob** can access and write on the file
    b. **pat** can access and write on the file
    c. **pat** can rename the file
    d. **bob** can create a new file in the directory
    e. **bob** can list names in the directory

45. What value **umask** gives a new file permissions **r--r-----**?
    a. **110**   b. **446**   c. **220**   d. **440**   e. **337**

46. User **bob** is in groups **bg1** and **bg2**. User **pat** is in group **pgg**.
    ```
    dr-x-wx--x 2 bob ted 60 Jan 1 1:00 foo
    -r-xr-xrwx 1 pat bg1  0 Jan 1 1:00 foo/bar
    ```
    a. **pat** can access and write on the file
    b. **pat** can rename the file
    c. **bob** can access and write on the file
    d. **bob** can create a new file in the directory
    e. **bob** can list names in the directory

47. User **bob** is in groups **bg1** and **bg2**. User **pat** is in group **pgg**.
    ```
    d-wx----w- 2 pat pgg 60 Jan 1 1:00 foo
    -rwxrwxr-x 1 bob bg2  0 Jan 1 1:00 foo/bar
    ```
    a. **pat** can access and write on the file
    b. **bob** can create a new file in the directory
    c. **bob** can access and write on the file
    d. **pat** can rename the file
    e. **bob** can list names in the directory

48. In an empty directory, what is output on your screen by:
    ```
    mkdir -p a/b/c 1/2/3 ; mv a/b 1/2 ; find . -name c
    ```
    a. **./1/a/b**   b. **./a/b/c**   c. **./1/2/b/c**
    d. **./1/2/c**   e. **./1/2/a/b**

49. What command manipulates your personal list of repeated scheduled commands:
    a. **dmesg**   b. **ps lxww**   c. **psmine**
    d. **showall**   e. **crontab**

50. What high-level command fetches and tracks packages for CentOS?
    a. **tar**   b. **rpm**   c. **wget**
    d. **apt-get**   e. **yum**

51. User **bob** is in groups **bg1** and **bg2**. User **pat** is in group **pgg**.
    ```
    dr-x-wx--- 2 pat bg1 60 Jan 1 1:00 foo
    -rwxrwxr-x 1 pat ted  0 Jan 1 1:00 foo/bar
    ```
    a. **pat** can rename the file
    b. **bob** can create a new file in the directory
    c. **bob** can access and write on the file
    d. **bob** can list names in the directory
    e. **pat** can create a new file in the directory

52. User **bob** is in groups **bg1** and **bg2**. User **pat** is in group **pgg**.
    ```
    d--x-----x 2 pat pgg 60 Jan 1 1:00 foo
    -r-xrwx-w- 1 bob bg1  0 Jan 1 1:00 foo/bar
    ```
    a. **bob** can list names in the directory
    b. **pat** can rename the file
    c. **pat** can access and write on the file
    d. **bob** can access and write on the file
    e. **bob** can create a new file in the directory

53. Which is the Linux fifth disk device?
    a. **/dev/sd5**   b. **/dev/sd5a**   c. **/dev/s5a**
    d. **/dev/sde**   e. **/dev/sda5**

54. Under what directory are system configuration files usually stored?
    a. **/etc**   b. **/log/var/**   c. **/grub/boot/**
    d. **/boot/grub**   e. **/var/log/**

55. The shadow password file is used:
    a. to store secondary passwords for times when you forget your main one
    b. to allow passwords to exist on partitions other than the ROOT
    c. to reduce the size of the main password file for faster access
    d. to keep a back-up of the main password file in case of corruption
    e. to hide encrypted passwords from viewing by ordinary users

56. What value to **chmod** would change the permissions on a file to **r-----rw-**?
    a. **122**   b. **406**   c. **654**   d. **322**   e. **102**

57. User **bob** is in groups **bg1** and **bg2**. User **pat** is in group **pgg**.
```
dr---wx--- 2 pat bg2 60 Jan 1 1:00 foo
-rw-rw-r-x 1 pat ted  0 Jan 1 1:00 foo/bar
```
   a. **pat** can create a new file in the directory
   b. **pat** can rename the file
   c. **bob** can access and write on the file
   d. **bob** can list names in the directory
   e. **bob** can rename the file

58. User **bob** is in groups **bg1** and **bg2**. User **pat** is in group **pgg**.
```
drw------x 2 pat ted 60 Jan 1 1:00 foo
--w--w-r-x 1 pat bg1  0 Jan 1 1:00 foo/bar
```
   a. **pat** can access and write on the file
   b. **bob** can rename the file
   c. **bob** can access and write on the file
   d. **bob** can list names in the directory
   e. **bob** can create a new file in the directory

59. When a user named **bob** runs a command in a **setuid** executable file owned by **foo**, in a directory owned by **root**, the file executes with the permissions of:
   a. **root and foo**   *b.* **root and bob**   *c.* **root**
   d. **bob**   *e.* **foo**

60. Given this successful command line (note the dot argument):
```
    cd /tmp ; mkdir dir ; cd dir ; chmod u-x .
```
Which next command will execute without any "permission denied" errors?
   a. **ls ..**   *b.* **ls /tmp/dir**
   c. **ls /tmp/dir/..**   *d.* **ls .**
   e. **ls /tmp/dir/.**

61. Approximately how big is an **fdisk** partition size of **123456789** *blocks*?
   a. **123 GB**   *b.* **123 TB**   *c.* **12.3 TB**
   d. **12.3 GB**   *e.* **123 MB**

62. Which command line displays all the non-hidden names in the current directory that contain the case-insensitive word **hi** (and no other names)?
   a. **echo *(H,h,I,i)***   *b.* **echo ?[HhIiHhIi]?**
   c. **echo *[Hh][Ii]***   *d.* **echo *[hiHI]***
   e. **echo ?[HhIi]?**

63. If the current directory contains 10 visible files and 5 visible sub-directories, what is the output on your screen of this command: **ls -d */.**
   a. an error message because ***/.** does not exist
   b. no output
   c. 5 directory names
   d. 15 pathnames
   e. ***/.**

64. What value **umask** gives a new file permissions **r--r-----**?
   a. **220**   *b.* **226**   *c.* **440**   *d.* **110**   *e.* **446**

65. When a user named **bob** runs a command in an executable file owned by **foo**, in a directory owned by **root**, the file executes with the permissions of:
   a. **root and foo**   *b.* **foo**   *c.* **root**
   d. **bob**   *e.* **root and bob**

66. What command line shows only your own processes, not all processes?
   a. **psmine**   *b.* **dmesg**   *c.* **crontab**
   d. **showall**   *e.* **ps lxww**

67. The *difference* between the system (**root**) crontab and all the user (personal) crontabs is:
   a. the system crontab also has the userid in it
   b. the personal crontab also has the userid in it
   c. the personal crontab only runs commands once
   d. the personal crontab has the date and time in it
   e. the system crontab has the date and time in it

68. User **bob** is in groups **bg1** and **bg2**. User **pat** is in group **pgg**.
```
d--x-wx--- 2 bob pgg 60 Jan 1 1:00 foo
-r-x-w-r-x 1 bob bg1  0 Jan 1 1:00 foo/bar
```
   a. **bob** can create a new file in the directory
   b. **pat** can access and write on the file
   c. **pat** can rename the file
   d. **bob** can access and write on the file
   e. **bob** can list names in the directory

69. What command changes a user´s password?
   a. **passwd**   *b.* **chpasswd**   *c.* **mkpasswd**
   d. **chsh**   *e.* **password**

70. In an empty directory, what permissions are on file **???** after these commands:
```
touch ??? *** ; chmod 111 *
chmod 222 ? ; chmod 444 '*'
```
   a. **-w--w--w-**   *b.* **r--r--r--**   *c.* **rw-rw-rw-**
   d. **-wx-wx-wx**   *e.* **--x--x--x**

71. When you show the type of file system inside an unmounted partition, what is displayed for a new, empty partition?
   a. **vfat** file system   *b.* **ext3** file system
   c. **ext2** file system (the default)   *d.* **ntfs** file system
   e. data

72. User **bob** is in groups **bg1** and **bg2**. User **pat** is in group **pgg**.
    ```
    d--xrwx--x 2 bob ted 60 Jan 1 1:00 foo
    ----rw--w- 1 bob bg1  0 Jan 1 1:00 foo/bar
    ```
    a. **bob** can access and write on the file
    b. **bob** can list names in the directory
    c. **pat** can rename the file
    d. **pat** can access and write on the file
    e. **bob** can create a new file in the directory

73. Which GRUB command line displays the contents of the file **foo**?
    a. **type (hd0,0)/foo**   b. **ls (hd0,0)/foo**
    c. **cat (hd0,0)/foo**   d. **mount (hd0,0)/foo**
    e. **p (hd0,0)/foo**

74. User **bob** is in groups **bg1** and **bg2**. User **pat** is in group **pgg**.
    ```
    dr-x----wx 2 pat ted 60 Jan 1 1:00 foo
    -r-xr-xrwx 1 pat bg1  0 Jan 1 1:00 foo/bar
    ```
    a. **pat** can access and write on the file
    b. **bob** can access and write on the file
    c. **pat** can rename the file
    d. **bob** can list names in the directory
    e. **bob** can create a new file in the directory

75. Given a sector size of 512 bytes, approximately how many megabytes are unused before the start of a partition that begins on sector 4096?
    a. **20**   b. **1**   c. **4**   d. **2**   e. **10**

76. Dereference the following symlink **bar** into its equivalent absolute path:
    ```
    ln -s ../b/../b/../../foo /tmp/a/b/bar
    ```
    a. **/tmp/foo**   b. **/tmp/b/foo**   c. **/tmp/a/b/bar**
    d. **/tmp/a/foo**   e. **/tmp/b/bar**

77. If user **pat** runs this command, who owns the new files **foo** and **bar**:
    ```
    $ sudo touch foo >bar
    ```
    a. **foo** and **bar**   b. **root** and **root**   c. **pat** and **root**
    d. **pat** and **pat**   e. **root** and **pat**

78. In an empty directory, what is output on your screen by:
    ```
    mkdir -p a/b/c 1/2/3 ; mv a/b/c 1/2 ; find . -name c
    ```
    a. **./1/2/b/c**   b. **./1/2/a/b/c**
    c. **./1/a/b/c**   d. **./1/2/3/a/b/c**
    e. **./1/2/c**

79. In a directory containing one file named **dog**, what is the output on your screen after this command line: **2>/dev/null ls nosuchfile**
    a. no output
    b. **ls: nosuchfile: No such file or directory**
    c. **dog**
    d. **bash: 2>/dev/null: command not found**
    e. **nosuchfile**

80. In an empty directory, what is output on your screen by:
    ```
    mkdir -p a/b/c 1/2/3 ; mv a 1/2 ; find . -name c
    ```
    a. **./1/2/3/a/b**   b. **./1/2/3/a/b/c**
    c. **./1/a**   d. **./1/2/a**
    e. **./1/2/a/b/c**

81. User **bob** is in groups **bg1** and **bg2**. User **pat** is in group **pgg**.
    ```
    d--xr-x-w- 2 bob pgg 60 Jan 1 1:00 foo
    --w----r-x 1 bob bg2  0 Jan 1 1:00 foo/bar
    ```
    a. **bob** can create a new file in the directory
    b. **bob** can list names in the directory
    c. **pat** can access and write on the file
    d. **bob** can access and write on the file
    e. **pat** can rename the file

82. The **-v** option to the **grep** command does what?
    a. selects lines that do not contain unprintable characters
    b. selects lines that do not contain a match for the supplied pattern
    c. prints the version number of the grep command
    d. turns off the translation of unprintable characters
    e. turns on the translation of unprintable characters

83. What GRUB command will display the partitions on a disk?
    a. **geometry (hd0)**   b. **ls (hd0)**
    c. **fdisk (hd0)**   d. **cat (hd0)**
    e. **mount (hd0)**

84. Which file contains a list of possible kernels to load and run after POST?
    a. **/boot/grub/grub.conf**   b. **/load/kernel.conf**
    c. **/etc/fstab**   d. **/etc/init.d**
    e. **/etc/inittab**

85. What command sets group administrator users?
    a. **usermod**   b. **modgroup**   c. **gpasswd**
    d. **passwd**   e. **groupedit**

86. User **bob** is in groups **bg1** and **bg2**. User **pat** is in group **pgg**.
    ```
    d-wx-w-rwx 2 pat bg2 60 Jan 1 1:00 foo
    -rwxrwxrwx 1 pat ted  0 Jan 1 1:00 foo/bar
    ```
    a. **bob** can rename the file
    b. **bob** can access and write on the file
    c. **bob** can list names in the directory
    d. **pat** can rename the file
    e. **bob** can create a new file in the directory

87. When an **at** job runs, the current working directory is set to:
    a. the HOME directory of the user who created the job
    b. the current directory that was in use when the **at** job was created
    c. the system ROOT directory
    d. the directory with the name **/home**
    e. the directory with the name **/root**

88. Given this successful command line (note the dot argument):
    ```
    cd /home/foo ; mkdir bar ; cd bar ; chmod a-x .
    ```
    Which of the following subsequent commands will execute without any "permission denied" errors?
    a. **ls .**   b. **ls ..**
    c. **ls /home/foo/bar/..**   d. **ls /home/foo/bar/.**
    e. **ls /home/foo/bar**

89. GRUB boot menu entries are a paragraph of several lines. The keyword on the first line of the paragraph is always:
    a. **boot**   b. **kernel**   c. **title**
    d. **timeout**   e. **initrd**

90. Given my directory **dir** and my file **dir/c** owned by me, which permissions allow me to access and change or create new content (data) in the file **dir/c** but not delete the file?
    a. Permissions **100** on directory **dir** and **200** on file **dir/c**.
    b. Permissions **600** on directory **dir** and **700** on file **dir/c**.
    c. Permissions **200** on directory **dir** and **200** on file **dir/c**.
    d. Permissions **400** on directory **dir** and **400** on file **dir/c**.
    e. Permissions **100** on directory **dir** and **100** on file **dir/c**.

91. Pick the correct order of operations:
    a. BIOS, POST, MBR, O/S boot   b. MBR, POST, BIOS, O/S boot
    c. POST, BIOS, MBR, O/S boot   d. BIOS, MBR, POST, O/S boot
    e. POST, MBR, BIOS, O/S boot

92. Given the following, can user **bird** in group **sesame** append to **./foo**?
    ```
    dr-xr-xr-x 2 root sesame 4096 Oct 7 14:00 .
    -rw-r-xr-x 1 bird sesame 123  Oct 4 14:05 foo
    ```
    a. No, because **bird** has no write permission on the directory
    b. No, because execute permissions are not set for **bird** on **foo**
    c. No, because the directory is not accessible to **bird**
    d. Yes, because **bird** has write permissions on **foo**
    e. Yes; permissions don´t apply because **bird** owns **foo**

93. Given the following, can user **bird** in group **sesame** copy **./foo** to **bar**?
    ```
    drwxrw-r-x 2 root sesame 4096 Oct 7 14:00 .
    -rwx-wx-wx 1 bird sesame 123  Oct 4 14:05 foo
    ```
    a. Yes, because **bird** has write permissions on **foo**
    b. Yes; permissions don´t apply because **bird** owns **foo**
    c. No, because the directory is not accessible to **bird**
    d. No, because **foo** has no read permissions for **bird**
    e. No, because the directory has no write permissions for others

94. The password **:x:** in **/etc/passwd** means:
    a. the password is locked
    b. the encrypted password is stored in the shadow file
    c. the account is locked
    d. the encrypted password is **"x"**
    e. the unencrypted password is stored in the group file

95. What value **umask** gives a new directory permissions **rw--w---x**?
    a. **621**   b. **211**   c. **421**   d. **156**   e. **432**

96. Given the following, can user **bird** in group **sesame** append to **foobar**?
    ```
    drwx--xrwx 2 root sesame 4096 Oct 7 14:00 .
    -rw------- 1 bird sesame 1024 Oct 4 14:05 foobar
    ```
    a. No, because **sesame** has no write permissions on **foobar**
    b. Yes, because **bird** has write permissions on **foobar**
    c. Yes, because **bird** owns **foobar**
    d. No, because the directory is not accessible to **bird**
    e. No, because execute permissions are not set for **bird** on **foobar**

97. What minimal permissions must you have on a directory to be able to execute successfully the command **ls .** from *inside* the directory?
    a. **--x**   b. **-wx**   c. **r--**   d. **r-x**   e. **rw-**

98. Pick the correct order of operations:
    a. **swapon, fdisk, mkswap**   b. **fdisk, mkswap, swapon**
    c. **fdisk, swapon, mkswap**   d. **swapon, mkswap, fdisk**
    e. **mkswap, fdisk, swapon**

99. What command powers down the machine safely?
    a. **fdisk**   b. **passwd**   c. **gpasswd**
    d. **chkconfig**   e. **shutdown**

100. Given my directory **dir** and my file **dir/bar** owned by me, which permissions allow me to access and change or create new content (data) in the file **dir/bar** but not delete the file?
    a. Permissions **500** on directory **dir** and **100** on file **dir/bar**.
    b. Permissions **500** on directory **dir** and **200** on file **dir/bar**.
    c. Permissions **400** on directory **dir** and **400** on file **dir/bar**.
    d. Permissions **200** on directory **dir** and **200** on file **dir/bar**.
    e. Permissions **600** on directory **dir** and **700** on file **dir/bar**.

101. When you use the **service** command to *start* a service that is not currently running, the service will:
    a. start immediately, no matter what the current Run Level
    b. be enabled for the current Run Level, and will then be started
    c. be enabled, and will start if valid for the current Run Level
    d. be queued for a later start when changing Run Levels
    e. be enabled for that Run Level, but will not be started

102. What command displays the kernel ring buffer of log messages:
    a. **crontab**   b. **ps lxww**   c. **dmesg**
    d. **showall**   e. **psmine**

103. What permissions are given to **newdir** after this command line:
        umask 156 ; mkdir newdir
    a. **--xr-xrw-**   b. **r-x-w-rw-**   c. **r-x--x---**
    d. **rw--w---x**   e. **rw--w----**

104. What is the output of this command line in an empty directory:
        touch .a .b .c ; echo [.]*
    a. **. .. .a .b .c**
    b. **.a .b .c**
    c. an error message from **echo** saying **[.]*** does not exist
    d. no output
    e. **[.]***

105. The **minimum** permissions you need to delete a file **foo** from directory **a** are:
    a. **wx** on **a**, none on **foo**   b. **wx** on **a**, **w** on **foo**
    c. **rwx** on **a**, none on **foo**   d. **rwx** on **a**, **rw** on **foo**
    e. **wx** on **a**, **r** on **foo**

106. User **bob** is in groups **bg1** and **bg2**. User **pat** is in group **pgg**.
    d-w-rw---x 2 bob ted 60 Jan 1 1:00 foo
    --w-rwxrwx 1 pat bg1 0 Jan 1 1:00 foo/bar
    a. **bob** can list names in the directory
    b. **pat** can access and write on the file
    c. **bob** can access and write on the file
    d. **bob** can create a new file in the directory
    e. **pat** can rename the file

107. To change your own account password, use this exact command line:
    a. **$ passwd cst8207.idallen.ca**
    b. **$ passwd cst8207**
    c. **$ passwd 10.50.254.150**
    d. **$ passwd**
    e. **$ passwd idallen-ubuntu**

108. User **bob** is in groups **bg1** and **bg2**. User **pat** is in group **pgg**.
    d-wxr-xrw- 2 bob pgg 60 Jan 1 1:00 foo
    -r-xrwxr-x 1 bob bg1 0 Jan 1 1:00 foo/bar
    a. **bob** can create a new file in the directory
    b. **pat** can access and write on the file
    c. **pat** can rename the file
    d. **bob** can list names in the directory
    e. **bob** can access and write on the file

109. A Unix/Linux "tarball" is:
    a. a single compressed file containing one uncompressed file
    b. a single-file that contains individual uncompressed files
    c. a single-file that contains individual compressed files
    d. a multi-file directory containing individual uncompressed files
    e. a multi-file directory containing individual compressed files

110. Which command counts the number of Unix permission groups you are in?
    a. **echo groups | wc**   b. **umask | wc**
    c. **groups | wc**   d. **wc groups**
    e. **id | wc**

111. Which is the second DOS *logical* partition?
    a. **/dev/sda2**   b. **/dev/sdb1**   c. **/dev/sda6**
    d. **/dev/sd2a**   e. **/dev/sd6a**

112. Given the following, can user **bird** in group **sesame** append to **./foo**?
    dr-xr--r-x 2 root sesame 4096 Oct 7 14:00 .
    -rw-rw-r-- 1 bird sesame 123 Oct 4 14:05 foo
    a. Yes, because **bird** has write permissions on **foo**
    b. No, because execute permissions are not set for **bird** on **foo**
    c. Yes; permissions don´t apply because **bird** owns **foo**
    d. No, because **bird** has no write permission on the directory
    e. No, because the directory is not accessible to **bird**

113. What command connects a file system in a partition to a directory:
    a. **file** *partition directory*   b. **fdisk** *partition directory*
    c. **mount** *partition directory*   d. **fsck** *partition directory*
    e. **mkfs** *partition directory*

128. Given my directory **dir** and my file **dir/c** owned by me, which permissions allow me to delete the file **dir/c** from the directory, but not change the content (data) in the file?
  a. Permissions **100** on directory **dir** and **200** on file **dir/c**.
  b. Permissions **500** on directory **dir** and **400** on file **dir/c**.
  c. Permissions **100** on directory **dir** and **100** on file **dir/c**.
  d. Permissions **300** on directory **dir** and **300** on file **dir/c**.
  e. Permissions **300** on directory **dir** and **500** on file **dir/c**.

129. Given the following, can user **bird** in group **sesame** copy **./foo** to **bar**?
```
drwx-wx--x 2 root sesame 4096 Oct 7 14:00 .
--wxrwxrwx 1 bird sesame 123  Oct 4 14:05 foo
```
  a. No, because the directory has no write permissions for **bird**
  b. No, because **foo** has no read permissions for **bird**
  c. Yes, because **bird** has write permissions on **foo**
  d. No, because the directory is not readable by **bird**
  e. Yes; permissions don´t apply because **bird** owns **foo**

130. On a disk with eight partitions, give the correct partition names after you delete partition **sda2**:
  a. **sda1 sda2 sda3 sda4 sda6 sda7 sda8**
  b. **sda1 sda2 sda3 sda4 sda5 sda7 sda8**
  c. **sda1 sda2 sda3 sda4 sda5 sda6**
  d. **sda1 sda3 sda4 sda5 sda6 sda7 sda8**
  e. **sda1 sda2 sda3 sda4 sda5 sda6 sda7**

131. The signal sent to a foreground process by typing the **[Ctrl-C]** key is:
  a. **SIGINT**   b. **SIGSTOP**   c. **SIGKILL**
  d. **SIGHUP**   e. **SIGTERM**

132. User **bob** is in groups **bg1** and **bg2**. User **pat** is in group **pgg**.
```
d--xr----x 2 bob ted 60 Jan 1 1:00 foo
--w--w-r-x 1 bob bg1  0 Jan 1 1:00 foo/bar
```
  a. **pat** can rename the file
  b. **pat** can access and write on the file
  c. **bob** can create a new file in the directory
  d. **bob** can list names in the directory
  e. **bob** can access and write on the file

133. Which command line creates a directory into which anyone can put a file, but in which nobody can see the names of the files that are there?
  a. **mkdir protected ; chmod 222 protected**
  b. **mkdir protected ; cd protected ; chmod ugo-rw .**
  c. **mkdir protected ; chmod 333 protected**
  d. **mkdir protected ; cd protected ; chmod ugo=w .**
  e. **mkdir protected ; chmod 333 .**

134. The **minimum** permissions you need to move a file **foo** from directory **a** to directory **b** are:
  a. **rwx** on **a**, **wx** on **b**, **rw** on **foo**
  b. **wx** on **a**, **wx** on **b**, none on **foo**
  c. **rwx** on **a**, **wx** on **b**, none on **foo**
  d. **wx** on **a**, **wx** on **b**, **r** on **foo**
  e. **wx** on **a**, **wx** on **b**, **w** on **foo**

135. User **bob** is in groups **bg1** and **bg2**. User **pat** is in group **pgg**.
```
d--xr----x 2 bob ted 60 Jan 1 1:00 foo
-r-x-w-rwx 1 pat bg2  0 Jan 1 1:00 foo/bar
```
  a. **pat** can access and write on the file
  b. **bob** can create a new file in the directory
  c. **bob** can list names in the directory
  d. **bob** can access and write on the file
  e. **pat** can rename the file

136. If I mount **sda1** on **/one** and **sda2** on **/two,** how can I link the existing file **/one/foo** to the new pathname **/two/bar**?
  a. **ln /one/foo /two/bar**
  b. **ln -s /one/foo /two/bar**
  c. **ln /two/bar /one/foo**
  d. **ln /one/bar /two/foo**
  e. **ln -s /two/bar /one/foo**

137. Given the following, can user **bird** in group **sesame** append to **foobar**?
```
drwxrw-rwx 2 root sesame 4096 Oct 7 14:00 .
-rw-rw-r-- 1 bird sesame 1024 Oct 4 14:05 foobar
```
  a. Yes, because **sesame** has write permissions on **foobar**
  b. Yes, because **bird** has write permissions on **foobar**
  c. No, because the directory is not accessible to **bird**
  d. Yes, because **bird** owns **foobar**
  e. No, because execute permissions are not set for **bird** on **foobar**

138. Other than **root**, who can change the permissions of the following directory?
```
dr-xrwxrwx 17 foo bar 4096 Apr 15 16:40 .
```
  a. only user **foo**
  b. only **root** can change the permissions
  c. user **foo** and any user in group **bar**
  d. only users in group **bar**
  e. anyone except user **foo**

139. User **bob** is in groups **bg1** and **bg2**. User **pat** is in group **pgg**.
```
d---rwx--x 2 pat pgg 60 Jan 1 1:00 foo
--w----rwx 1 bob bg1  0 Jan 1 1:00 foo/bar
```
a. **pat** can rename the file
b. **bob** can create a new file in the directory
c. **bob** can list names in the directory
d. **bob** can access and write on the file
e. **pat** can access and write on the file

140. User **bob** is in groups **bg1** and **bg2**. User **pat** is in group **pgg**.
```
d-wxrwx-w- 2 pat ted 60 Jan 1 1:00 foo
-r-xr-xrwx 1 pat bg1  0 Jan 1 1:00 foo/bar
```
a. **pat** can rename the file
b. **bob** can list names in the directory
c. **bob** can access and write on the file
d. **pat** can access and write on the file
e. **bob** can create a new file in the directory

141. Given my directory **dir** and my file **dir/bar** owned by me, which permissions allow me to delete the file **dir/bar** from the directory, but not change the content (data) in the file?
a. Permissions **500** on directory **dir** and **400** on file **dir/bar**.
b. Permissions **100** on directory **dir** and **200** on file **dir/bar**.
c. Permissions **300** on directory **dir** and **300** on file **dir/bar**.
d. Permissions **100** on directory **dir** and **100** on file **dir/bar**.
e. Permissions **300** on directory **dir** and **500** on file **dir/bar**.

142. Name three types of partitions:
a. primary, enhanced, logical   b. primary, extended, logical
c. basic, extended, logical   d. primary, extended, linear
e. primary, enhanced, linear

143. What command creates a new user account?
a. **useradd**   b. **makeuser**   c. **passwd**
d. **gpasswd**   e. **groupmod**

144. User **bob** is in groups **bg1** and **bg2**. User **pat** is in group **pgg**.
```
d-w---xr-x 2 pat ted 60 Jan 1 1:00 foo
-rwxr-xrwx 1 pat bg2  0 Jan 1 1:00 foo/bar
```
a. **bob** can list names in the directory
b. **bob** can access and write on the file
c. **bob** can create a new file in the directory
d. **bob** can rename the file
e. **pat** can access and write on the file

145. Which of these is a likely kernel version number?
a. **#1 SMP Sat Nov 7 21:25:57 EST 2009**
b. **139285**
c. **Linux**
d. **83 Linux**
e. **2.6.31.5-127.fc12.i686.PAE**

146. User **bob** is in groups **bg1** and **bg2**. User **pat** is in group **pgg**.
```
d-wx-w-rwx 2 pat bg1 60 Jan 1 1:00 foo
-rwxrwxrwx 1 pat ted  0 Jan 1 1:00 foo/bar
```
a. **bob** can rename the file
b. **pat** can create a new file in the directory
c. **bob** can access and write on the file
d. **bob** can create a new file in the directory
e. **bob** can list names in the directory

147. Given my directory **dir** and my file **dir/bar** owned by me, which permissions allow me to delete the file **dir/bar** from the directory, but not change the content (data) in the file?
a. Permissions **600** on directory **dir** and **500** on file **dir/bar**.
b. Permissions **500** on directory **dir** and **500** on file **dir/bar**.
c. Permissions **700** on directory **dir** and **500** on file **dir/bar**.
d. Permissions **600** on directory **dir** and **300** on file **dir/bar**.
e. Permissions **700** on directory **dir** and **200** on file **dir/bar**.

148. Give the GRUB device name for the second partition of the third disk:
a. **(hd2,1)**   b. **(hd2,3)**   c. **(sdc,2)**
d. **(sd2,3)**   e. **(hd1,2)**

149. User **bob** is in groups **bg1** and **bg2**. User **pat** is in group **pgg**.
```
dr-x-wx--x 2 bob ted 60 Jan 1 1:00 foo
-r-x-w-r-x 1 bob bg1  0 Jan 1 1:00 foo/bar
```
a. **bob** can access and write on the file
b. **bob** can create a new file in the directory
c. **pat** can rename the file
d. **pat** can access and write on the file
e. **bob** can list names in the directory

150. To show all your one-time scheduled commands, type:
a. **cat crontab**   b. **atq**
c. **/etc/crontab**   d. **/var/log/crontab**
e. **crontab -l**

151. To shut down your Linux system in an orderly fashion:
    a. type the three key **[CONTROL]-[ALT]-[DEL]**
    b. run **shutdown -h now**
    c. select VMware "VM|Power Off this virtual machine"
    d. logout from each terminal and the machine will shut down
    e. type the three key **[CONTROL]-[ALT]-[F1]**

152. User **bob** is in groups **bg1** and **bg2**. User **pat** is in group **pgg**.
    ```
    dr---wx--x 2 bob ted 60 Jan 1 1:00 foo
    -r-xrwxrwx 1 pat bg1  0 Jan 1 1:00 foo/bar
    ```
    a. **bob** can create a new file in the directory
    b. **bob** can list names in the directory
    c. **pat** can access and write on the file
    d. **pat** can rename the file
    e. **bob** can access and write on the file

153. When a personal **crontab** job runs, the current working directory is set to:
    a. the directory with the name **/home**
    b. the HOME directory of the user who created the job
    c. the system ROOT directory
    d. the directory with the name **/root**
    e. the current directory that was in use when the **crontab** job was created

154. What command displays the groups you are in?
    a. **gpasswd**   b. **grouprint**   c. **lstgroups**
    d. **groups**   e. **mkgroups**

155. Which of these statements is true?
    a. You only need "**r--**" permission on directory "**foo**" for "**ls -l foo**" to work.
    b. The "**ln**" command takes two arguments, so the maximum number of hard links a file can have is two.
    c. You can make a hard link to a directory.
    d. To make a hard link to file "**foo**" named "**bar**", file "**foo**" must exist.
    e. If you give me write permission on a file owned by you, I can then use **chmod** to change its permissions.

156. Given my directory **dir** and my file **dir/bar** owned by me, which permissions allow me to delete the file **dir/bar** from the directory, but not change the content (data) in the file?
    a. Permissions **100** on directory **dir** and **500** on file **dir/bar**.
    b. Permissions **300** on directory **dir** and **400** on file **dir/bar**.
    c. Permissions **300** on directory **dir** and **200** on file **dir/bar**.
    d. Permissions **500** on directory **dir** and **500** on file **dir/bar**.
    e. Permissions **100** on directory **dir** and **300** on file **dir/bar**.

157. User **bob** is in groups **bg1** and **bg2**. User **pat** is in group **pgg**.
    ```
    dr-xr-x-w- 2 bob pgg 60 Jan 1 1:00 foo
    -r-xrwxr-x 1 bob bg1  0 Jan 1 1:00 foo/bar
    ```
    a. **pat** can rename the file
    b. **pat** can access and write on the file
    c. **bob** can list names in the directory
    d. **bob** can access and write on the file
    e. **bob** can create a new file in the directory

158. Which command removes adjacent duplicate lines from a file?
    a. **dupl**   b. **dup**   c. **duplicate**
    d. **uniq**   e. **unique**

159. Can three different files have the same inode number on three different file systems?
    a. yes: inode numbers are only unique inside a file system
    b. no: inode numbers are unique across all file systems
    c. no: you can't have inode numbers on three file systems
    d. no: inode numbers only apply to directories, not files
    e. yes: if the files are all names for the same inode

160. What is contained in the **/etc/fstab** file?
    a. a list of file system tables used to identify partition types
    b. a list of file system tables used by the adduser command
    c. a list of file system tables used by the usermod command
    d. a list of file systems to mount when booting the system
    e. a list of currently mounted file systems

161. If you use **ls -l** on a file owned by a deleted user, the user/owner field is:
    a. the number zero
    b. a number instead of an account name
    c. the name **"deleted"**
    d. the name **"removed"**
    e. an account name in parentheses, e.g. **(luke)**

162. Given the following, can user **bird** in group **sesame** remove **./foo**?
    ```
    drwxr-xrwx 2 root sesame 4096 Oct 7 14:00 .
    -rwxrwxrwx 1 bird sesame 123  Oct 4 14:05 foo
    ```
    a. No, because the directory is not accessible to **bird**
    b. Yes, because **bird** matches the writable other permissions
    c. Yes; permissions don´t apply because **bird** owns **foo**
    d. Yes, because **bird** has full permissions on **foo**
    e. No, because **bird** has no write permission on the directory

163. What does the **-v** option to the **grep** command do?
   a. prints the version number of the grep command
   b. turns off the translation of unprintable characters
   c. selects lines that do not contain a match for the supplied pattern
   d. turns on the translation of unprintable characters
   e. selects lines that do not contain unprintable characters

164. What permissions are given to **newfile** after this command line:
   umask 326 ; touch newfile
   a. **-wx-w-r-x**   b. **-wxr-----**   c. **-wx-w-rw-**
   d. **r--r-x--x**   e. **r--r-----**

165. User **bob** is in groups **bg1** and **bg2**. User **pat** is in group **pgg**.
   d-wx--x--x 2 bob ted 60 Jan 1 1:00 foo
   -r-xr-xrwx 1 pat bg2 0 Jan 1 1:00 foo/bar
   a. **bob** can access and write on the file
   b. **bob** can create a new file in the directory
   c. **pat** can rename the file
   d. **pat** can access and write on the file
   e. **bob** can list names in the directory

166. To list your personal crontab, type:
   a. **/etc/crontab**   b. **atq**
   c. **/var/log/crontab**   d. **crontab -l**
   e. **cat crontab**

167. If you run this as you, to create two new files: **$ sudo touch a >b**
   a. **root** owns both new files
   b. you own both new files
   c. this command fails due permissions
   d. you own new file **a** – **root** owns new file **b**
   e. **root** owns new file **a** – you own new file **b**

168. User **bob** is in groups **bg1** and **bg2**. User **pat** is in group **pgg**.
   dr-xr-xrwx 2 pat bg1 60 Jan 1 1:00 foo
   -rwxrwxr-x 1 pat ted 0 Jan 1 1:00 foo/bar
   a. **bob** can rename the file
   b. **bob** can access and write on the file
   c. **bob** can list names in the directory
   d. **pat** can create a new file in the directory
   e. **pat** can rename the file

169. What command will show the type of file system inside an unmounted *partition ?*
   a. **file -s** *partition*   b. **file** *partition*
   c. **fdisk -l** *partition*   d. **fdisk -s** *partition*
   e. **mount | grep '**partition**'**

170. Given my directory **dir** and my file **dir/f** owned by me, which permissions allow me to delete the file **dir/f** from the directory, but not change the content (data) in the file?
   a. Permissions **600** on directory **dir** and **300** on file **dir/f**.
   b. Permissions **300** on directory **dir** and **500** on file **dir/f**.
   c. Permissions **600** on directory **dir** and **500** on file **dir/f**.
   d. Permissions **700** on directory **dir** and **200** on file **dir/f**.
   e. Permissions **500** on directory **dir** and **500** on file **dir/f**.

171. Process signals in increasing order of strength:
   a. **HUP KILL TERM**   b. **KILL HUP TERM**
   c. **HUP TERM KILL**   d. **TERM KILL HUP**
   e. **TERM HUP KILL**

172. Give the GRUB device name for the fourth partition of the third disk:
   a. **(sdd,3)**   b. **(hd2,3)**   c. **(sd2,3)**
   d. **(hd3,2)**   e. **(hd4,3)**

173. User **bob** is in groups **bg1** and **bg2**. User **pat** is in group **pgg**.
   d-w---xr-- 2 pat ted 60 Jan 1 1:00 foo
   -rwxrwxrwx 1 pat bg2 0 Jan 1 1:00 foo/bar
   a. **bob** can create a new file in the directory
   b. **bob** can list names in the directory
   c. **bob** can access and write on the file
   d. **bob** can rename the file
   e. **pat** can access and write on the file

174. Which **crontab** line executes at **13:54** every day?
   a. *** * * 54 13 command**   b. **13 * * * 54 command**
   c. **13 54 * * * command**   d. **54 13 * * * command**
   e. *** * * 13 54 command**

175. What command line would create a file system on the partition?
   a. **mount** *partition*   b. **fdisk** *partition*
   c. **fsck** *partition*   d. **mkfs** *partition*
   e. **mkswap** *partition*

176. If I mount one file system on directory **/a** and another file system on directory **/b,** how can I link the existing file **/a/foo** to the new pathname **/b/new**?
   a. **ln /b/new /a/foo**   b. **ln -s /b/new /a/foo**
   c. **ln /a/foo /b/new**   d. **ln /a/new /b/foo**
   e. **ln -s /a/foo /b/new**

177. To change the group of a file to **me**, type:
   a. **chown me file**   b. **chown :me file**
   c. **newuser me file**   d. **umask :me file**
   e. **newuser file me**

178. Given the following, can user **bird** in group **sesame** rename **./foo** to **bar**?
d----wx--- 2 root sesame 4096 Oct 7 14:00 .
---------- 1 bird sesame 123 Oct 4 14:05 foo
    a. No, because the directory has no permissions for other users
    b. No, because **bird** has no permissions on **foo**
    c. No, because **bird** cannot read the directory
    d. Yes; permissions don´t apply because **bird** owns **foo**
    e. Yes, because **bird**´s group matches the group writable directory

179. What command terminates processes based on their name (not safe!):
    a. **ps lxww**   b. **killall**   c. **crontab**
    d. **dmesg**   e. **kill**

180. Pick the correct order of operations:
    a. **fdisk, mount, mkfs**   b. **mkfs, fdisk, mount**
    c. **mount, fdisk, mkfs**   d. **mount, mkfs, fdisk**
    e. **fdisk, mkfs, mount**

181. User **bob** is in groups **bg1** and **bg2**. User **pat** is in group **pgg**.
dr-xrwxrw- 2 pat pgg 60 Jan 1 1:00 foo
--w----r-x 1 bob bg1 0 Jan 1 1:00 foo/bar
    a. **bob** can access and write on the file
    b. **bob** can create a new file in the directory
    c. **bob** can list names in the directory
    d. **pat** can access and write on the file
    e. **pat** can rename the file

182. In a directory containing one file named **dog**, what is the output on your screen
    after this command line: **1>/dev/null ls ***
    a. **dog**
    b. no output
    c. **bash: 1>/dev/null: command not found**
    d. *****
    e. **ls: *: No such file or directory**

183. Give the GRUB device name for the third partition of the fourth disk:
    a. **(hd2,3)**   b. **(hd3,2)**   c. **(hd4,3)**
    d. **(sdd,3)**   e. **(sd2,3)**

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