PRINT Name: _____ **LAB Section:** | | | |

Test Version: ___ **One-Answer Multiple Choice** **45 Questions − 15 of 15%**

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

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1. *[11/67]* - - File **`a`** contains 2 lines. File **`b`** contains 3 lines. How many lines are output on your screen by this: **`echo a ; cat a | echo b`**

   a. **`4`** *b.* **`5`** *c.* **`7`** *d.* **`2`** *e.* **`1`**

2. *[18/68]* - - What is the output on your screen of this unquoted command line:
   `mkdir a ; touch b a/b1 a/b2 b2 ; find a -name b?`

   a. **`a/b2`** *b.* **`a/b1 a/b2`** *c.* **`b1 b2`**
   d. **`b?`** *e.* no output

3. *[19/67]* - - What does this command print: **`awk '{print $NF}'`**

   a. the first field
   b. the last field
   c. the shell variable **`$NF`**
   d. the number of fields
   e. field number **`N`** followed by field number **`F`**

4. *[20/68]* - - In an empty directory, how many words are in file **`c`** after this:
   `touch .a .b .c ; ls >c`

   a. **`2`** *b.* **`0`** *c.* **`1`** *d.* **`4`** *e.* **`3`**

5. *[29/68]* - - Which command touches one single file (single argument)?

   a. **`touch It's a mystery that really isn't`**
   b. **`touch It\'s a mystery that really isn\'t`**
   c. **`touch "It"s a mystery that really isn"t"`**
   d. **`touch 'It\'s a mystery that really isn\'t'`**
   e. **`touch 'It's a mystery that really isn't'`**

6. *[30/68]* - - Which command line outputs **`/bin/date`**?

   a. **`which date`** *b.* **`cd /bin ; echo date`**
   c. **`cat /bin/date`** *d.* **`cd /bin ; ls date`**
   e. **`touch /bin/date`**

7. *[31/67]* - - If **`/bin/foo`** is a program that outputs **`mom`** and **`/usr/bin/foo`** is a program that outputs **`dad`** what would be the output on your screen of this three command sequence:
   `PATH=/bin/foo:/usr/bin/foo:/usr ; cd /bin ; foo`

   a. **`mom`** followed by **`dad`**
   b. **`dad`**
   c. **`mom`**
   d. **`bash: foo: command not found`**
   e. **`dad`** followed by **`mom`**

8. *[33/68]* - - In an empty directory, what is in file **`foo`** after this:
   `echo hi >foo ; ls bar >foo`

   a. **`bar`** *b.* **`ls: cannot access bar`**
   c. nothing (empty file) *d.* **`foo`**
   e. **`hi`**

9. *[34/68]* - - If **`/bin/bat`** is a program that outputs **`foo`** and **`/usr/bin/bat`** is a program that outputs **`bar`** what would be the output on your screen of this three command sequence:
   `PATH=/etc:/usr:/usr/bin:/bin ; cd /bin ; bat`

   a. **`bar`**
   b. **`bash: bat: command not found`**
   c. **`foo`** followed by **`bar`**
   d. **`foo`**
   e. **`bar`** followed by **`foo`**

10. *[35/68]* - - What is the output of this in an empty directory:
    `touch 123 321 12 1 ; echo [123]`

    a. **`123`**
    b. **`1`**
    c. an error message from **`echo`** saying **`[123]`** does not exist
    d. **`1 12 123`**
    e. **`123 321`**

11. *[37/68]* - - In an empty directory, how many words output on your screen after this: **`echo It's "redirected" >a isn't it? >b ; ls`**

    a. **`2`** *b.* **`3`** *c.* **`0`** *d.* **`1`** *e.* **`4`**

12. *[38/68]* - - Create a symbolic link under **/lib** named **sym** that has target **a b**:

    a. **ln -s /lib/sym '/lib/a b'**
    b. **ln -s 'a b' '/lib/sym'**
    c. **ln -s '/lib/a b' /lib/sym**
    d. **ln -s /lib/sym 'a b'**
    e. **ln -s a b /lib/sym**

13. *[38/68]* - - File **a** occupies one disk block. How many disk blocks are in use after this sequence of commands:

    cp a b ; ln b c ; ln a e ; cp e c ; rm a b

    a. **2** *b.* **4** *c.* **3** *d.* **0** *e.* **1**

14. *[38/68]* - - What is the output of this in an empty directory:

    touch 1 133 .13 2 213 3 03 93 .31 ; ls [13]?

    a. an error message from **ls** saying **[13]?** does not exist
    b. **[13]?**
    c. **1 133 3**
    d. **1 3**
    e. **133**

15. *[39/68]* - - Dereference the following symlink **bar** into its equivalent absolute path:

    mkdir -p /tmp/a/b ; ln -s /etc/foo /tmp/a/b/bar

    a. **/etc/a/b/bar** *b.* **/tmp/foo**
    c. **/etc/foo** *d.* **/etc/a/foo**
    e. **/etc/b/bar**

16. *[39/68]* - - File **a** occupies one disk block. How many disk blocks are in use after this sequence of commands:

    cp a b ; ln b c ; cp c d ; cp a c

    a. **4** *b.* **3** *c.* **1** *d.* **0** *e.* **2**

17. *[39/68]* - - File **a** occupies one disk block. How many disk blocks are in use after this sequence of commands:

    ln a b ; ln b c ; cp c d ; ln c e ; rm a d

    a. **0** *b.* **3** *c.* **4** *d.* **2** *e.* **1**

18. *[39/68]* - - What is true about this output from **ls -ild foo bar**?

    816 -rwxr-xr-x 2 root root 3 Jan 24 01:03 foo
    816 -r--r--r-- 2 root root 3 Jan 24 01:03 bar

    a. **foo** and **bar** are two of three names for this file
    b. this output is not possible
    c. **foo** and **bar** each have three names (six names total)
    d. **foo** and **bar** are names for the same file
    e. **foo** and **bar** are names for different files

19. *[40/68]* - - File **a** occupies one disk block. How many disk blocks are in use after this sequence of commands:

    cp a b ; ln b c ; cp c d ; ln c e ; cp a d ; rm a c

    a. **0** *b.* **1** *c.* **2** *d.* **4** *e.* **3**

20. *[40/68]* - - Given this long listing:

    drwxr-xr-x 2048 bin bin 4096 Jan 2 14:22 dir

    How many subdirectories lie immediately under **dir**?

    a. 2046
    b. 4094
    c. 2048
    d. 4096
    e. there is not enough information shown to answer the question

21. *[40/67]* - - If **/bin/foo** is a program that outputs **mom** and **/usr/bin/foo** is a program that outputs **dad** what would be the output on your screen of this three command sequence:

    PATH=/bin/foo:/usr/bin/foo:/usr ; cd /bin ; ./foo

    a. **bash: ./foo: no such file or directory**
    b. **mom**
    c. **dad** followed by **mom**
    d. **dad**
    e. **mom** followed by **dad**

22. *[42/68]* - - Dereference the following symlink **bar** into its equivalent absolute path: **ln -s ../../a/../foo /tmp/a/b/bar**

    a. **/tmp/a/b/bar** *b.* **/tmp/b/foo**
    c. **/tmp/b/bar** *d.* **/tmp/foo**
    e. **/tmp/a/foo**

23. *[42/68]* - - File **a** contains 2 lines. File **b** contains 3 lines. How many lines are in file **c** after this command line:
```
ln a d ; ln d c ; cat a b d >c
```
a. **3** *b.* **0** *c.* **4** *d.* **5** *e.* **2**

24. *[42/67]* - - File **a** contains 2 lines. File **b** contains 3 lines. How many lines are output on your screen by this command line: **cat b | touch a**

a. **3** *b.* **1** *c.* no output
d. **2** *e.* **5**

25. *[42/68]* - - In **/bin** using **ls -l** shows a symbolic link **foo -> dir/bar** then dereference the absolute path of **foo** with no symbolic links:

a. **/bin/dir/bar** *b.* **/bin/dir/bar/foo**
c. **/foo/dir/bar** *d.* **/bin/foo/dir/bar**
e. **/dir/bar**

26. *[42/68]* - - Which line allows the shell to find the **assignment07check** command?

a. **PATH=$PATH:assignment07check**
b. **PATH=assignment07check:$PATH**
c. **PATH=whereis assignment07check**
d. **PATH=$PATH:~idallen/cst8207/16w/assignment07**
e. **PATH=which assignment07check**

27. *[43/68]* - - How many arguments are passed to the command by the shell:
```
foo "bar "z " bin 'luk c' " wug'i "win' 9 8
```
a. **5** *b.* **6** *c.* **4** *d.* **11** *e.* **7**

28. *[44/68]* - - File **a** contains 2 lines. File **b** contains 3 lines. How many lines are in file **c** after this command line:
```
cat a b >c ; cat a >>b ; sort c b >c a
```
a. **8** *b.* **12** *c.* **0** *d.* **5** *e.* **7**

29. *[44/68]* - - What is the output of this in an empty directory:
```
date >.abc ; touch .dog ; echo .?*
```
a. an error message from **echo** saying **.?*** does not exist
b. **.abc .dog**
c. **.?***
d. **.. .abc .dog**
e. **.dog**

30. *[45/68]* - - What command recursively finds all pathnames with a basename that begins with **foo**?

a. **find foo* -name** *b.* **find foo@ -print**
c. **find foo* -ls** *d.* **find -name "foo@"**
e. **find -name 'foo*'**

31. *[47/68]* - - How many arguments are passed to the command by the shell:
```
echo It's not hard, it's just logical.
```
a. **7** *b.* **6** *c.* **3** *d.* **5** *e.* **4**

32. *[47/68]* - - If a shell GLOB pattern fails to match anything, the shell:

a. gives an error message and does not execute
b. returns the closest match to the pattern
c. passes the pattern unchanged to the command
d. removes the pattern and passes nothing
e. gives a warning message but continues

33. *[48/68]* - - If my current directory is **/bin**, which of these pathnames is equivalent to the file name **/bin/ls**?

a. **../bin/ls/.** *b.* **./bin/ls**
c. **ls/.** *d.* **./../bin/ls**
e. **/root/bin/ls**

34. *[48/68]* - - What is the link count of directory **x** after this set of successful commands?
```
mkdir x ; cd x ; touch a ; ln a b ; mkdir c d
```
a. **5** *b.* **6** *c.* **2** *d.* **4** *e.* **3**

35. *[50/68]* - - If files occupy one disk block, how many disk blocks will the system free up if I remove these four file names:
```
111 -rw-r--r-- 2 me me 1 Jan 1 1:00 a
111 -rw-r--r-- 2 me me 1 Jan 1 1:00 b
222 -rw-r--r-- 3 me me 1 Jan 1 1:00 c
222 -rw-r--r-- 3 me me 1 Jan 1 1:00 d
```
a. **4** *b.* **1** *c.* **2** *d.* **3** *e.* **0**

36. *[51/68]* - - Which pathname always leads to the same file named: **/bin/rm**

a. **/bin/../../rm** *b.* **/bin/rm/./.**
c. **./bin/rm** *d.* **/bin/rm/../..**
e. **/../bin/./rm**

37. *[52/68]* - - If files occupy one disk block, how many disk blocks will the system free up if I remove these four file names:

```
111 -rw-r--r-- 1 me me 1 Jan 1 1:00 a
222 -rw-r--r-- 1 me me 1 Jan 1 1:00 b
444 -rw-r--r-- 2 me me 1 Jan 1 1:00 c
444 -rw-r--r-- 2 me me 1 Jan 1 1:00 d
```

a. **2** *b.* **0** *c.* **3** *d.* **4** *e.* **1**

38. *[55/68]* - - A "dangling symlink" is a symlink to:

a. a directory *b.* a special device file
c. the current directory *d.* a parent directory
e. a non-existent target

39. *[55/68]* - - If files occupy one disk block, how many disk blocks will the system free up if I remove these four file names:

```
111 -rw-r--r-- 3 me me 1 Jan 1 1:00 a
111 -rw-r--r-- 3 me me 1 Jan 1 1:00 b
222 -rw-r--r-- 3 me me 1 Jan 1 1:00 c
222 -rw-r--r-- 3 me me 1 Jan 1 1:00 d
```

a. **1** *b.* **2** *c.* **4** *d.* **3** *e.* **0**

40. *[55/68]* - - If I am in directory **/etc** and **d** is an empty sub-directory, what is true after this command line:

```
touch d/foo ; mkdir d/x ; cp d/foo ./d/../x
```

a. the directory **d** now contains only a file named **x**
b. the command fails because the name **d/foo** does not exist
c. there is a second copy of the file **foo** in file **/etc/x**
d. the directory **d** is now empty
e. there is a second copy of the file **foo** in directory **d**

41. *[56/68]* - - If files occupy one disk block, how many disk blocks will the system free up if I remove these four file names:

```
111 -rw-r--r-- 1 me me 1 Jan 1 1:00 a
222 -rw-r--r-- 1 me me 1 Jan 1 1:00 b
333 -rw-r--r-- 1 me me 1 Jan 1 1:00 c
444 -rw-r--r-- 2 me me 1 Jan 1 1:00 d
```

a. **3** *b.* **1** *c.* **0** *d.* **4** *e.* **2**

42. *[56/68]* - - If files occupy one disk block, how many disk blocks will the system free up if I remove these four file names:

```
111 -rw-r--r-- 1 me me 1 Jan 1 1:00 a
222 -rw-r--r-- 3 me me 1 Jan 1 1:00 b
222 -rw-r--r-- 3 me me 1 Jan 1 1:00 c
222 -rw-r--r-- 3 me me 1 Jan 1 1:00 d
```

a. **1** *b.* **3** *c.* **0** *d.* **4** *e.* **2**

43. *[57/68]* - - Which command displays names starting with **foo**?

a. **which foo@** *b.* **ls foo*** *c.* **find foo%**
d. **cat foo+** *e.* **echo foo&**

44. *[64/68]* - - Which command displays your eight-character student account name?

a. **echo "$HOME"** *b.* **echo "$SHELL"**
c. **echo "$ACCOUNT"** *d.* **echo "$NAME"**
e. **echo "$USER"**

45. *[66/67]* - - **Did you read all the words of the test instructions on page one?**

a. **Sim** *(Yes - Portuguese)* *b.* **Tak** *(Yes - Polish)*
c. **Jes** *(Yes - Esperanto)* *d.* **Igen** *(Yes - Hungarian)*
e. **Taip** *(Yes - Lithuanian)*