

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.
- ☞ 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.
- ☞ The answer to the last question about reading/doing all these test instructions is: **Taip**

1. [13/81] Create a symbolic link under `/tmp` named `foo` that has target `a b`:
 - a. `ln -s /tmp/foo '/tmp/a b'`
 - b. `ln -s /tmp/foo 'a b'`
 - c. `ln -s '/tmp/a b' /tmp/foo`
 - d. `ln -s a b /tmp/foo`
 - e. `ln -s 'a b' '/tmp/foo'`
2. [14/81] What is the output on your screen of this command line:


```
mkdir a ; touch b a/b1 a/b2 ; find a -name b*
```

 - a. no output
 - b. `a/b1 a/b2`
 - c. `b`
 - d. `b1 b2`
 - e. `b a/b1 a/b2`
3. [21/80] File `a` contains 3 lines. File `b` contains 4 lines. How many lines are output on your screen by this command line: `head a | echo b`
 - a. 3
 - b. 3 followed by 4
 - c. 4
 - d. 3 followed by 1
 - e. 1
4. [25/81] In an empty directory, how many words are in file `a` after this:


```
echo It's redirected >b isn't it\? ; ls >a
```

 - a. 1
 - b. 0
 - c. 4
 - d. 3
 - e. 2
5. [29/81] 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 ; cp c b ; cat a b d >c
```

 - a. 5
 - b. 4
 - c. 2
 - d. 0
 - e. 6

6. [30/81] File `a` contains 2 lines. File `b` contains 3 lines. How many lines are in file `c` after this command line:


```
ln a e ; ln b d ; ln d c ; cp d e ; cat a b e d >c
```

 - a. 6
 - b. 10
 - c. 4
 - d. 12
 - e. 7
7. [33/81] In an empty directory, what is the output on your screen after this command line: `echo bar >.foo ; echo .*`
 - a. `bar`
 - b. `.*`
 - c. an error message from `echo` saying `.*` does not exist
 - d. `. .. .foo`
 - e. `.foo`
8. [34/81] If a shell token with a GLOB pattern contains three slashes, how many slashes can be in each matched pathname?
 - a. zero, one, two, or three
 - b. two or three
 - c. three or more
 - d. exactly three
 - e. one, two, or three
9. [34/80] What is true about this output from `ls -il foo bar`?


```
15 -rwxrwxrwx 2 bin bin 3 Jul 31 12:33 foo
15 -rwxrwxrwx 3 bin bin 3 Jul 31 12:33 bar
```

 - a. this output is not possible
 - b. `foo` and `bar` are names for different files
 - 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 two of three names for the same file
10. [35/81] Dereference the following symlink `bar` into its equivalent absolute path: `ln -s ../../a/./b/./foo /tmp/a/b/bar`
 - a. `/tmp/b/foo`
 - b. `/tmp/a/b/foo`
 - c. `/tmp/a/foo`
 - d. `/tmp/b/bar`
 - e. `/tmp/foo`
11. [36/81] 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 c d ; ln a e ; cp e d ; rm c
```

 - a. 1
 - b. 2
 - c. 4
 - d. 3
 - e. 5

12. [36/81] In `/usr/bin` using `ls -l` shows a symbolic link `foo -> /etc/bar` then dereference the absolute path of `foo` with no symbolic links:
- a. `/foo/etc/bar` b. `/etc/bar`
 c. `/usr/bin/etc/bar` d. `/usr/bin/etc/bar/foo`
 e. `/usr/bin/foo/etc/bar`
13. [38/81] Which command line below shows only lines 6-10 of file `foo`?
- a. `head -6 foo | tail -10`
 b. `head -10 foo | tail -6`
 c. `tail -10 foo | head -6`
 d. `tail -15 foo | head -5`
 e. `head -10 foo | tail -5`
14. [41/81] 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
```
- a. 3            b. 4            c. 2            d. 5            e. 1
15. [41/81] How many arguments are passed to the command by the shell:
- ```
echo " 1 '2 3' 4 " 55 66 ' 7 "8 '999 >out
```
- a. 6 b. 2 c. 3 d. 4 e. 5
16. [41/81] If `/bin/rm` is a file name, which pathname always leads to the same file?
- a. `../bin/rm` b. `/bin/rm/./.`
 c. `./bin/rm` d. `/bin/../../../../rm`
 e. `/bin/rm/../../../../`
17. [42/81] How many files are touched or created?
- ```
touch " 1 '2 3' 4 "5 6 ' 7 "8 ' 9
```
- a. 3            b. 5            c. 6            d. 2            e. 4
18. [43/81] How many files are touched or created?
- ```
touch "bat "1 " cow 'foo y' " sam'9 "bus' x y
```
- a. 6 b. 5 c. 11 d. 7 e. 4

19. [44/81] 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. 12            b. 8            c. 7            d. 0            e. 5
20. [44/81] 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 b
```
- a. 1 b. 3 c. 4 d. 5 e. 2
21. [45/81] In `/usr/bin` using `ls -l` shows a symbolic link `bar -> ../dir/foo` then dereference the absolute path of `bar` with no symbolic links:
- a. `/usr/bin/dir/foo`
 b. `/usr/bin/dir/foo/bar`
 c. `/usr/bar/./dir/foo`
 d. `/usr/dir/foo`
 e. `/usr/bin/bar/./dir/foo`
22. [46/81] If `/bin/foo` is a program that outputs `one` and `/usr/bin/foo` is a program that outputs `two` what would be the output on your screen of this two command sequence:
- ```
PATH=/bin/foo:/usr/bin/foo:/etc/passwd ; foo
```
- a. `one` followed by `two`  
 b. `two` followed by `one`  
 c. `bash: foo: command not found`  
 d. `two`  
 e. `one`
23. [47/81] What is in file `c` after this command line:
- ```
echo me >a ; ln a b ; echo hi >b ; ln a c ; rm a b
```
- a. nothing (empty file) b. `me`
 c. `me` followed by `hi` d. `hi`
 e. no such file (nonexistent)
24. [48/81] 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 d
```
- a. 3            b. 2            c. 1            d. 5            e. 4

25. [48/81] How many arguments are passed to the command by the shell:  
`<foo foo " a 'b c' d " ' f " g " ' >foo xxx`  
 a. 6            b. 3            c. 4            d. 2            e. 5
26. [49/80] 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. 2            b. 0            c. 1            d. 3            e. 4
27. [49/81] 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. 4            c. 2            d. 3            e. 0
28. [52/81] File **a** contains 2 lines. File **b** contains 3 lines. How many lines are output on your screen by this command line: `cat b | sort a`  
 a. 3                            b. 2                            c. 2 followed by 3  
 d. 5                            e. 3 followed by 2
29. [52/81] In an empty directory, what is in file **out** after this command line:  
`ls nosuchfile | wc -l >out`  
 a. **nosuchfile**                            b. 0  
 c. 1                            d. **out**  
 e. nothing (empty file)
30. [52/81] What is the link count of directory **x** after this set of successful commands? `mkdir x ; cd x ; touch a ; ln a b ; ln a c`  
 a. 3            b. 4            c. 1            d. 2            e. 5
31. [54/79] How many arguments are passed to the command by the shell:  
`<foo cmd -b "-a" '-r' >foo bar blee`  
 a. 5            b. 6            c. 3            d. 7            e. 4

32. [56/81] If `/bin/bat` is a program that outputs **one** and `/usr/bin/bat` is a program that outputs **two** what would be the output on your screen of this two command sequence: `PATH=/usr:/usr/bin:/bin ; bat`  
 a. **bash: bat: command not found**  
 b. **one**  
 c. **two** followed by **one**  
 d. **one** followed by **two**  
 e. **two**
33. [56/81] 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. 4            b. 1            c. 0            d. 2            e. 3
34. [57/81] What is the link count of directory **x** after this set of successful commands? `mkdir x ; mkdir x/a ; touch x/b x/c x/d`  
 a. 3            b. 2            c. 4            d. 1            e. 5
35. [58/81] 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. 4            b. 0            c. 3            d. 2            e. 1
36. [58/81] What is the link count of directory **x** after this set of successful commands? `mkdir x ; mkdir x/a x/a/b x/a/c x/b`  
 a. 6            b. 3            c. 2            d. 4            e. 5
37. [59/81] What is the link count of directory **x** after this set of successful commands? `mkdir x ; cd x ; touch a b ; mkdir c d e`  
 a. 6            b. 5            c. 7            d. 4            e. 3
38. [59/81] What is the link count of file **c** after this set of successful commands? `cp c x ; ln c a ; ln x y ; ln a z ; ln a b`  
 a. 4            b. 5            c. 3            d. 6            e. 2

39. [60/81] 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-- 2 me me 1 Jan 1 1:00 b
333 -rw-r--r-- 2 me me 1 Jan 1 1:00 c
444 -rw-r--r-- 1 me me 1 Jan 1 1:00 d
```

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

40. [60/81] What is true about this output from `ls -il foo bar`

```
15 -rwxrwxrwx 2 bin bin 3 Jul 31 12:33 foo
23 -rwxrwxrwx 2 bin bin 3 Jul 31 12:33 bar
```

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

41. [62/81] What is true about this output from `ls -il foo bar`

```
15 -r-x----- 2 bin bin 3 Jul 31 12:33 foo
15 -r-x----- 2 bin bin 3 Jul 31 12:33 bar
```

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

42. [64/81] A "dangling symlink" is a symlink to:

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

43. [67/81] 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-- 1 me me 1 Jan 1 1:00 d
```

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

44. [69/81] Rewrite this as a simplified absolute path:

```
/etc/./foo/./bar/./././etc/./etc/./bar/./foo/./x
```

a. `/x`                            b. `/bar/foo/x`            c. `/etc/x`  
d. `/foo/x`                        e. `/etc/foo/x`

45. [76/80] Did you read all the words of the test instructions on page one?

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