PRINT Name: _____ **LAB Section:** ▢▢▢

One-Answer Multiple Choice   **44 Questions**   **Weight 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.
☞ Enter your NAME, Student Number, and Answers. Fill in the bubbles with pencil, no pen.
☞ Leave the last question about reading all these test instructions blank. No answer. **Neniu**
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1. *[21/81]* What is the output on your screen of this unquoted command line:
   mkdir a ; touch b a/b a/bb ; find a −name b*

   a. **a/b a/bb**   *b.* **b bb**   *c.* no output
   d. **a/b**   *e.* **b a/b a/bb**

2. *[32/82]* In an empty directory, how many words are in file **c** after this:
   touch a .b .c ; ls >c

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

3. *[34/82]* Which command line below shows only lines **5−10** of file **foo**?

   a. **head −n 10 foo | tail −n 6**
   b. **head −n 10 foo | tail −n 5**
   c. **head −n 6 foo | tail −n 10**
   d. **tail −n 10 foo | head −n 6**
   e. **tail −n 15 foo | head −n 5**

4. *[35/82]* File **a** contains 2 lines. File **b** contains 3 lines. How many lines are output on your screen by this: **cat b | echo a**

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

5. *[36/82]* File **a** contains 2 lines, and file **b** contains 3 lines, then how many lines are in file **c** after this command line:
   ln a d ; ln d e ; ln e c ; sort a b >c

   a. **4**   *b.* **3**   *c.* **5**   *d.* **2**   *e.* **0**

6. *[36/82]* In an empty directory, how many words are in file **c** after this:
   echo Don't "redirect". >a Can't do. >b ; ls >c

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

7. *[37/82]* In **/var/lib** using **ls −l** shows a symbolic link **foo −> /bin/cat** then dereference the absolute path of **foo** with no symbolic links:

   a. **/bin/cat**   *b.* **/foo/bin/cat**
   c. **/var/lib/foo/bin/cat**   *d.* **/var/lib/bin/cat**
   e. **/var/lib/bin/cat/foo**

8. *[37/82]* What does this command print: **awk '{print $NF}'**

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

9. *[38/82]* 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: command not found**
   b. **dad** followed by **mom**
   c. **mom** followed by **dad**
   d. **mom**
   e. **dad**

10. *[38/82]* In an empty directory, how many words are in file **c** after this:
    echo a >x ; echo b >y ; mv z a >z ; ls >c

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

11. *[40/82]* In an empty directory, what is in file **foo** after this:
    echo hi >foo ; ls bar >foo

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

12. *[42/81]* 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 c

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

13. *[43/82]* File **a** contains 2 lines, and file **b** contains 3 lines, then how many lines are in file **c** after this command line:
```
sort a b >c ; cat a >>b ; sort c b >c a
```
a. **7**   *b.* **0**   *c.* **8**   *d.* **12**   *e.* **5**

14. *[44/82]* Which command line outputs **/bin/date**?

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

15. *[44/82]* Which pathname almost always leads to the same file named: **/etc/passwd**

a. **/etc/./etc/../passwd**   *b.* **/./etc/./passwd/.**
c. **/etc/../passwd**   *d.* **./etc/passwd**
e. **/././etc/passwd**

16. *[46/82]* 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 ; rm a b
```
a. **5**   *b.* **4**   *c.* **3**   *d.* **1**   *e.* **2**

17. *[48/81]* Dereference the following symlink **xyz** into its equivalent absolute path: **ln -s ../../a/../foo /tmp/a/b/xyz**

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

18. *[48/82]* 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. **dad** followed by **mom**
b. **mom**
c. **bash: ./foo: no such file or directory**
d. **mom** followed by **dad**
e. **dad**

19. *[48/81]* Which line allows the shell to find the **assignment07check** command?

a. **PATH=$PATH:assignment07check**
b. **PATH=$PATH:~idallen/cst8207/17w/assignment07**
c. **PATH=which assignment07check**
d. **$PATH=PATH:~idallen/cst8207/17w/assignment07**
e. **PATH=whereis assignment07check**

20. *[49/82]* Dereference the following symlink **xyz** into its equivalent absolute path: **ln -s /bin/bash /tmp/a/b/xyz**

a. **/bin/a/bash**   *b.* **/tmp/bash**
c. **/bin/bash**   *d.* **/bin/b/xyz**
e. **/bin/a/b/xyz**

21. *[50/81]* Create a symbolic link under **/etc** named **bar** that has target **foo**:

a. **ln -s /etc/bar '/etc/foo'**
b. **ln -s 'foo' '/etc/bar'**
c. **ln -s '/etc/foo' /etc/bar**
d. **ln -s bar/foo /etc**
e. **ln -s /etc/bar 'foo'**

22. *[52/82]* Given this long listing of a directory:
```
drwxr-xr-x 448 me me 296 Dec 4 9:12 dir
```
How many subdirectories lie immediately under **dir**?

a. **448**   *b.* **446**
c. **294**   *d.* **296**
e. not enough information given

23. *[52/82]* How do I search for the string **text** in the paginated output from the **man** or **less** commands on my screen?

a. **find text**   *b.* **/text**   *c.* **@text**
d. **help text**   *e.* **grep text**

24. *[52/82]* If I am in directory **/tmp** and **dir** is an empty sub-directory, what is true after this command line:
```
mkdir bar ; touch foo ; mv foo bar/dir
```
a. the directory **dir** now contains a file named **foo**
b. the directory **bar** now contains a file named **foo**
c. the directory **dir** now contains a directory named **bar**
d. the command fails because **bar/dir** is not a directory
e. the directory **dir** is still empty

25. *[53/82]* How many arguments are passed to the command by the shell:
    echo It's not hard, it's just logical.

    a. **6**   *b.* **4**   *c.* **5**   *d.* **3**   *e.* **7**

26. *[53/81]* 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-- 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.* **0**   *c.* **2**   *d.* **3**   *e.* **1**

27. *[53/82]* Which command displays pathnames starting with **foo**?

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

28. *[54/81]* If a shell GLOB pattern fails to match anything, the shell:

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

29. *[54/82]* What is in file **c** after this command line:
    echo xx >a ; ln a b ; echo yy >b ; ln a c ; rm a b

    a. no such file (nonexistent)   *b.* **xx** followed by **yy**
    c. **xx**   *d.* nothing (empty file)
    e. **yy**

30. *[54/82]* What is the output of this in an empty directory:
    mkdir abc cba ab a ; echo [abc]

    a. an error message from **echo** saying **[abc]** does not exist
    b. **a**
    c. **abc**
    d. **abc cba**
    e. **a ab abc**

31. *[55/82]* How many files are touched?
    touch " 1 '2 3' 4 "5 6 ' 7 "8 '

    a. **3**   *b.* **2**   *c.* **4**   *d.* **6**   *e.* **5**

32. *[55/82]* 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
    222 -rw-r--r-- 2 me me 1 Jan 1 1:00 c
    333 -rw-r--r-- 3 me me 1 Jan 1 1:00 d

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

33. *[56/82]* 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. **5**   *b.* **1**   *c.* **2**
    d. no output   *e.* **3**

34. *[56/82]* 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
    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. **3**   *b.* **0**   *c.* **1**   *d.* **4**   *e.* **2**

35. *[57/82]* What is the link count of directory **x** after this set of successful commands? **mkdir x ; mkdir x/a x/b x/a/b x/b/c x/b/d**

    a. **4**   *b.* **5**   *c.* **6**   *d.* **2**   *e.* **3**

36. *[58/81]* 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. **.?***
    c. **.abc   .dog**
    d. **.dog**
    e. **..   .abc   .dog**

37. *[61/82]* 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. **0**   *b.* **3**   *c.* **1**   *d.* **2**   *e.* **4**

38. *[61/82]* In **/var/lib** using **ls -l** shows a symbolic link **bar ->**
    ../abc/foo then dereference the absolute path of **bar** with no symbolic
    links:

    a. **/var/lib/abc/foo/bar**
    b. **/var/lib/bar/../abc/foo**
    c. **/var/lib/abc/foo**
    d. **/var/abc/foo**
    e. **/var/bar/../abc/foo**

39. *[62/82]* 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. there is a second copy of the file **foo** in directory **d**
    c. the directory **d** is now empty
    d. there is a second copy of the file **foo** in file **/etc/x**
    e. the command fails because the name **d/foo** does not exist

40. *[63/82]* 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. **4**   b. **3**   c. **2**   d. **1**   e. **0**

41. *[63/82]* If my current directory is **/etc/vim**, which of these pathnames is
    equivalent to the file name **/etc/passwd**?

    a. **/etc/vim/./passwd**   b. **../etc/passwd**
    c. **../passwd**   d. **./passwd**
    e. **./etc/passwd**

42. *[64/82]* What is true about this output from **ls -il foo bar**
    15 -rwxrwxrwx 2 bin bin 3 Jul 31 12:33 foo
    15 -rwxrwxrwx 2 bin bin 3 Jul 31 12:33 bar

    a. **foo** and **bar** are two of three names for the same file
    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. this output is not possible

43. *[68/82]* 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. **0**   c. **1**   d. **2**   e. **3**

44. *[70/82]* How do you execute the program **bar** in the current directory?

    a. **/bar**   b. **$HOME/bar**   c. **../bar**
    d. **bar/**   e. **./bar**