Test Version: ＿＿＿   **Print Name:** ＿＿＿＿＿＿＿＿＿＿＿＿

Multiple Choice - 42 Questions - 25 of 25%

1. Read **all** the instructions and **both** sides (back and front) of all pages.
2. Put the **Test Version** above into **NO. OF QUESTIONS** and **NO. OF STUDENTS**
3. Answer the questions you know, first. One Answer Only per question.
4. Manage your time when answering questions on this test!

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1. *[12/80]* If 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 c ; cat a b >c
    ```
    a. **5**   *b.* **0**   *c.* **2**   *d.* **4**   *e.* **3**

2. *[16/79]* In an empty directory, how many words are in file **out** after this command line: **echo hi >a ; ls >out**
    a. **3**   *b.* **1**   *c.* **2**   *d.* **0**   *e.* **4**

3. *[20/80]* 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 **400** on directory **dir** and **400** on file **dir/foo**.
    b. Permissions **100** on directory **dir** and **200** on file **dir/foo**.
    c. Permissions **600** on directory **dir** and **700** on file **dir/foo**.
    d. Permissions **500** on directory **dir** and **100** on file **dir/foo**.
    e. Permissions **200** on directory **dir** and **200** on file **dir/foo**.

4. *[20/80]* What is in file **c** after this command line:
    ```
    echo A >a ; ln a b ; echo B >b ; ln a c ; rm a b
    ```
    a. **A** followed by **B**   *b.* nothing (empty file)
    c. **B**   *d.* no such file (nonexistent)
    e. **A**

5. *[21/79]* If my current working directory is **/var**, which command copies the password file into directory **/var/ian** under the name **bar**?
    a. **cp ./../etc/passwd ../ian/bar**
    b. **cp ../var/./ian/../etc/passwd ./ian/./bar**
    c. **cp ./ian/../../etc/passwd ian/bar**
    d. **cp ../../etc/./passwd /ian/bar**
    e. **cp ././ian/../etc/passwd ../var/ian/bar**

6. *[25/80]* If my current directory is **/etc**, which of these pathnames is equivalent to the file name **/etc/passwd**?
    a. **./etc/passwd**
    b. **passwd/.**
    c. **./../../etc/./passwd**
    d. **/root/etc/passwd**
    e. **../etc/passwd/.**

7. *[28/80]* Given my directory **dir** and my file **dir/foo** owned by me, which permissions allow me to delete the file **dir/foo** from the directory, but not change the content (data) in the file?
    a. Permissions **300** on directory **dir** and **500** on file **dir/foo**.
    b. Permissions **600** on directory **dir** and **500** on file **dir/foo**.
    c. Permissions **700** on directory **dir** and **200** on file **dir/foo**.
    d. Permissions **600** on directory **dir** and **300** on file **dir/foo**.
    e. Permissions **500** on directory **dir** and **500** on file **dir/foo**.

8. *[28/79]* If 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 b e ; cp d e >c
    ```
    a. **0**   *b.* **5**   *c.* **4**   *d.* **2**   *e.* **3**

9. *[29/80]* In an empty directory, what is in file **out** after this command line: **ls nosuchfile | wc -l >out**
    a. **nosuchfile**   *b.* nothing (empty file)
    c. **out**   *d.* **1**
    e. **0**

10. *[29/80]* In an empty directory, what is the output on your screen after this command line: **echo hi >.out ; ls ***

a. an error message from **ls** saying ***** does not exist
b. **.   ..   .out**
c. *****
d. no output
e. **.out**

11. *[31/80]* Given this successful command line (note the dot argument):
    cd /tmp ; mkdir foo ; cd foo ; chmod u-x .
Which of the following subsequent commands will execute without any "permission denied" errors?

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

12. *[32/80]* If 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. **5**   b. **0**   c. **7**   d. **12**   e. **8**

13. *[33/80]* In an empty directory, what is the output on your screen after this command line: **echo hi >a ; ls >wc -l**

a. no output   b. **1**   c. **0**
d. **2**   e. **a**

14. *[35/80]* In an empty directory, what is the output on your screen after this command line: **echo hi >a ; ls | wc -w**

a. no output   b. **a**   c. **2**
d. **1**   e. **0**

15. *[36/80]* Which command line displays all the non-hidden names in the current directory that contain the letter **a** (and no others)?

a. **echo [a]**   b. **echo a***   c. **echo ?a?**
d. **echo *a**   e. **echo *a***

16. *[38/79]* What is the link count of file **foo** after this set of successful commands?
    rm foo ; touch foo ; ln foo bar
    cp bar a ; ln a b ; ln bar c ; cp c a

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

17. *[38/79]* If **ian** is a sub-directory that contains only the file **foo**, what happens after this command: **mv ./ian/./foo ./ian/../bar**

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

18. *[38/80]* How many arguments are passed to the command by the shell on this command line:
    <foo foo " a 'b c' d " e f ' g " h " ' >foo

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

19. *[38/80]* If file **foo** contains 9 lines, each of which is the one-digit line number of the line in the file (**1** through **9**), what is the output on your screen of this command:
    sort foo foo | tail -2 | head -1

a. **8 8**   b. **8**   c. **1**   d. **9**   e. **2 2**

20. *[38/80]* What minimal permissions must you have on a directory to be able to execute successfully the command **ls .** from *inside* the directory?

a. **-wx**   b. **rw-**   c. **--x**   d. **r--**   e. **r-x**

21. *[39/79]* What is the output on your screen of this command line:
    umask 362 ; touch newfile ; ls -l newfile

a. **--wxrw--w- 1 me me 0 Oct 1 01:12 newfile**
b. **--wxr-x-w- 1 me me 0 Oct 1 01:12 newfile**
c. **-r----xr-x 1 me me 0 Oct 1 01:12 newfile**
d. **-r-----r-- 1 me me 0 Oct 1 01:12 newfile**
e. **--wx---r-- 1 me me 0 Oct 1 01:12 newfile**

22. *[40/80]* What command shows all the lines in file **foo** that contain the string **bar**?
    - *a.* **cat foo | wc bar**
    - *b.* **grep bar <foo**
    - *c.* **grep foo bar**
    - *d.* **foo | grep bar**
    - *e.* **cat foo > grep bar**

23. *[41/79]* What is the correct syntax to redirect both standard output and standard error into the same output file?
    - *a.* **sum foo 2>1 >out**
    - *b.* **sum foo 1>out 2>out**
    - *c.* **sum foo 1>out 2>1**
    - *d.* **sum foo 2>&1 >out**
    - *e.* **sum foo >out 2>&1**

24. *[42/80]* Which of these command line will make **foo** contain all of the content of **f1** followed by all of the content of **f2**?
    - *a.* **ln f1 f2 >foo**
    - *b.* **cp f1 f2 >foo**
    - *c.* **mv f1 f2 >foo**
    - *d.* **cat f1 f2 >foo**
    - *e.* **echo f1 f2 >foo**

25. *[44/79]* How many words are in the file **x** after this command line:
    echo 1 2 >x ; echo 3 >x ; echo 4 >>x
    - *a.* **4**
    - *b.* **0**
    - *c.* **1**
    - *d.* **2**
    - *e.* **3**

26. *[44/80]* What is in file **out** after this command line:
    echo a >out b c
    - *a.* **a b c**
    - *b.* nothing (empty file)
    - *c.* **b c**
    - *d.* **echo a**
    - *e.* **a**

27. *[44/80]* In an empty directory, what is the output on your screen after this command line: **touch 1 2 .a .b ; echo .***
    - *a.* **. .. .a .b**
    - *b.* **.***
    - *c.* **.a .b**
    - *d.* an error message from **echo** saying **.*** does not exist
    - *e.* **1 2**

28. *[45/80]* Which command below removes *only* this four-character file name containing a special character (and no others): ***foo**
    - *a.* **rm *foo**
    - *b.* **rm .\/*foo**
    - *c.* **rm ?foo**
    - *d.* **rm /*foo**
    - *e.* **rm ./*foo**

29. *[45/79]* Which of the command lines below can generate a non-empty file?
    - *a.* **tail foo >foo**
    - *b.* **sort foo >foo**
    - *c.* **grep 'foo' foo >foo**
    - *d.* **cat foo >foo**
    - *e.* **ls foo >foo**

30. *[45/80]* Which of these commands makes a file owned by me, also executable by me?
    - *a.* **chmod u+x ./myfile**
    - *b.* **umask 111 myfile**
    - *c.* **chmod x+u myfile**
    - *d.* **chmod x=u ./myfile**
    - *e.* **umask 777 myfile**

31. *[46/80]* How many words are in file **out** after this command line:
    echo one >two >three >out
    - *a.* **1**
    - *b.* **4**
    - *c.* **3**
    - *d.* **2**
    - *e.* **0**

32. *[47/80]* If file **a** contains 2 lines, and file **b** contains 3 lines, then how many lines are output on your screen by this command line:
    cat b | sort a
    - *a.* **5**
    - *b.* **3** followed by **2**
    - *c.* **2** followed by **3**
    - *d.* **2**
    - *e.* **3**

33. *[47/80]* In an empty directory, what is the output on your screen after this command line: **echo hi >a ; sort * 1>/dev/null**
    - *a.* no output
    - *b.* **hi**
    - *c.* **sort: 1>/dev/null: No such file or directory**
    - *d.* **sort: *: No such file or directory**
    - *e.* **a**

34. *[48/80]* In an empty directory, what is the output on your screen after this command line:

    echo hi >a ; ls nosuchfile 2>/dev/null

    a. **ls: nosuchfile: No such file or directory**
    b. **a**
    c. **ls: 2>/dev/null: No such file or directory**
    d. no output
    e. **nosuchfile**

35. *[50/80]* How many arguments are passed to the command by the shell on this command line:

    <foo foo -x " " -z -r" " >foo 'foo foo'

    a. **6**   *b.* **8**   *c.* **7**   *d.* **5**   *e.* **9**

36. *[50/80]* If the current directory contains 10 visible files and 15 visible sub-directories, what is the output on your screen of this command:

    ls -d */.

    a. no output
    b. an error message because **`*/.`** does not exist
    c. 15 directory names
    d. 25 pathnames
    e. **`*/.`**

37. *[53/79]* Which command line outputs inode/filename pairs for names in the current directory, sorted by inode number?

    a. **ls ./* | sort -node**
    b. **ls -i * > sort -n**
    c. **sort -n | ls -ai**
    d. **ls -ai | sort -n**
    e. **ls -node * > sort -n**

38. *[54/79]* Which of the following command lines removes all the names in the current directory that are exactly three letters (alphabetic) long (and nothing else)?

    a. **rm [azAZ][azAZ][azAZ]**
    b. **rm ???**
    c. **rm [a-zA-Z][a-zA-Z][a-zA-Z]**
    d. **rm [3][3][3]**
    e. **rm [a-zA-Z,a-zA-Z,a-zA-Z]**

39. *[55/80]* What is the output on your screen after this command line:
    mkdir dir ; touch dir/.aa dir/.bb ; echo dir/*

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

40. *[55/80]* What is the output on your screen of this command line:
    umask 156 ; mkdir newdir ; ls -ld newdir

    a. **drw--w---x 2 me me 512 Oct 1 1:12 newdir**
    b. **dr-x--x--- 2 me me 512 Oct 1 1:12 newdir**
    c. **d--xr-xrw- 2 me me 512 Oct 1 1:12 newdir**
    d. **dr-x-w-rw- 2 me me 512 Oct 1 1:12 newdir**
    e. **drw--w---- 2 me me 512 Oct 1 1:12 newdir**

41. *[56/79]* In an empty directory, what is the output on your screen after this command line: **touch a b .1 .2 ; echo .??***

    a. **. .. a b .1 .2**
    b. an error message from **echo** saying **.??*** does not exist
    c. **. .. .1 .2**
    d. **.??***
    e. **a b**

42. *[68/78]* What would you type to change the permissions on a file to **-wxr-xrw-**?

    a. **chmod 563 file**   *b.* **chmod 635 file**
    c. **chmod 356 file**   *d.* **chmod 210 file**
    e. **chmod 421 file**

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