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

Test Version: 620 **One-Answer Multiple Choice** **106 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.

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1. A shell script named **`foo`** is executed as follows: **`./foo 1 2 "3 4" 5`**
   Inside the script is the line: **`echo "$3"`**
   What is the output on your screen from this line?
   a. **`3 4`** *b.* **`"3`** *c.* **`2 3 4`**
   d. **`$3`** *e.* **`1 2 3`**

2. In the **`/etc/suoders`** file, what word goes in front of **`ALL=(ALL) ALL`** to allow the user **`admin`** to run commands as **`root`**?
   a. **`wheel`** *b.* **`#admin`** *c.* **`admin`**
   d. **`%admin`** *e.* **`sudoers`**

3. Which of the following could you use as options for the **`tar`** command to extract a gzip-compressed archive?
   a. **`ezf`** *b.* **`-czf`** *c.* **`xzf`** *d.* **`-tgz`** *e.* **`egf`**

4. The **`cron`** system can run commands at most every
   a. hour *b.* minute *c.* second
   d. millisecond *e.* day

5. Which command sequence correctly searches for **`foo`** and then prints the date if it is found inside the file **`bar`**?
   a. **`if [ test foo bar ] ; then date ; fi`**
   b. **`if [ grep foo bar ] ; then date ; fi`**
   c. **`if test foo bar ; then date ; fi`**
   d. **`if test foo = bar ; then date ; fi`**
   e. **`if grep <bar foo ; then date ; fi`**

6. Which of the following programs uses file globbing expressions rather than regular expressions for matching:
   a. **`vi`** *b.* **`grep`** *c.* **`find`** *d.* **`awk`** *e.* **`sed`**

7. What would be the output of the following command line:
   `echo a b c d | awk '{print $2}'`
   a. **`a b`** *b.* **`b`** *c.* no output
   d. **`$2`** *e.* **`c d`**

8. A shell script named **`bar`** is executed as follows:
   `./bar a "b c" 'a '`
   Inside the script is the line: **`head "$*"`**
   How many arguments are passed to the **`head`** command inside the script?
   a. **`2`** *b.* **`1`** *c.* **`5`** *d.* **`4`** *e.* **`3`**

9. Which of the following **`PATH`** statements makes the most sense?
   a. **`PATH=/bin:/bin/cat:/usr/bin`**
   b. **`PATH=/bin:/usr/bin:/etc/passwd`**
   c. **`PATH=/bin/ls:/etc:/usr/bin`**
   d. **`PATH=/usr:/bin:/usr/bin:/etc`**
   e. **`PATH=/bin/sh:/usr/bin:/etc:/bin`**

10. Which of the following commands would result in an error?
    a. **`[ a = 4 ]`** *b.* **`[ 3 -eq 4 ]`** *c.* **`[ 3 = 4 ]`**
    d. **`[ a -eq 4 ]`** *e.* **`[ a != 4 ]`**

11. Which of the following is a proper way to change the **`/etc/sudoers`** file?
    a. **`echo > /etc/sudoers`** *b.* **`visudo`**
    c. **`nano /etc/sudoers`** *d.* **`vim /etc/sudoers`**
    e. **`vi /etc/sudoers`**

12. If **`foo`** is a directory that contains only the file **`bar`** and **`/dir1`** is an empty directory, what is in /dir1 after running the following command?
    `rsync -avH foo /dir1`
    a. **`dir1`** *b.* nothing *c.* a symlink to foo
    d. **`bar`** *e.* **`foo`**

13. Given the following command line: **`read one two three`**
    which user keyboard input line below will assign the text **`bb`** to the shell variable named **`two`**?
    a. **`aa,bb,cc`**
    b. **`aa;bb;cc`**
    c. **`one=aa two=bb three=cc`**
    d. **`aa:bb:cc`**
    e. **`aa bb cc`**

14. Which of the following commands would be used to add the user **`user001`** to the group **`common`**?
    a. **`useradd user001 common`**
    b. **`usrgrp user001 common`**
    c. **`groupadd -a common user001`**
    d. **`groupmod -a user001 common`**
    e. **`gpasswd -a user001 common`**

15. Which line below passes three *separate* arguments to the **sort** command when placed inside a shell script named **foo** invoked by the command line:
```
./foo  111  222  333
```
a. `sort "$? $? $?"` *b.* `sort "$#"`
c. `sort "$*"` *d.* `sort "$1 $2 $3"`
e. `sort "$@"`

16. If a script named **bar** contains a loop that starts:
```
for i in "$*" ; do
```
and the script is executed using this command line:
```
./bar 0 ' 1 2 ' 3 4 " 5 6 "
```
how many times will the loop iterate?
a. 8 iterations *b.* 5 iterations *c.* 7 iterations
d. 6 iterations *e.* 1 iteration

17. What is the output of the following sequence of **bash** commands:
```
echo '$rich' | sed -e 's/$/bar/g'
```
a. `barrich` *b.* `$richbar`
c. `bar$rich` *d.* `barrichbar`
e. no output on screen

18. If a shell script named **foo** contains the line:
```
if [ "$1" = '$2' ] ; then echo SAME ; fi
```
then which of the following command lines will produce **SAME** as output?
a. `./foo bar bar` *b.* `./foo "bar" 'bar'`
c. `./foo $2 $2` *d.* `./foo '$2' bar`
e. `./foo "$1" '$2'`

19. Which line below puts the count of the number of lines in the password file into the variable **count**?
a. `count=$( cat -c /etc/passwd )`
b. `count=$( wc -l /etc/passwd | awk "print $1" )`
c. `count=$( wc /etc/passwd | awk echo $1 )`
d. `count=$( wc -l </etc/passwd )`
e. `count=$( awk -F: /etc/passwd | wc -l )`

20. Given the following command line: `read  xx  yy  zz`
which user keyboard input line below will assign the text **22** to the shell variable named **yy**?
a. `11,22,33` *b.* `11  22  33`
c. `11:22:33` *d.* `11;22;33`
e. `xx=11  yy=22  zz=33`

21. Which of the following commands on a Unix/Linux system displays a list of processes running on the system?
a. `psls` *b.* `pstop` *c.* `top`
d. `toplist` *e.* `listtop`

22. Which of the following signals cannot be handled or ignored?
a. `SIGINT` *b.* `SIGTERM` *c.* `SIGHUP`
d. `SIGKILL` *e.* `SIGSUSP`

23. Which of the following commands could be used to create a group named **common**?
a. `groupadd common` *b.* `gpasswd -a common`
c. `gshadow -a common` *d.* `newgrp common`
e. `gpasswd -c common`

24. If a shell script named **foo** contains the line:
```
if [ '$3' = "$2" ] ; then echo SAME ; fi
```
then which of the following command lines will always produce **SAME** as output?
a. `./foo $3 "$2" $1` *b.* `./foo '$1' "$3" $2`
c. `./foo $1 '$2' $3` *d.* `./foo 1 '$3' 2`
e. `./foo $1 $2 $3`

25. Given the following shell script statement,
```
if [ "a" = "b" ] ; then echo SAME ; fi
```
which of the following statements is true?
a. "**[**" is passed four arguments
b. "**fi**" would cause a "command not found" error
c. "**SAME**" would be printed
d. "**[**" is part of all "**if**" statements
e. an "invalid number" error would result

26. If **archive.tgz** is a compressed tar archive, which command could you run to produce a listing of its contents without extracting it?
a. `tar tzvf archive` *b.* `tar tgz archive.tgz`
c. `tar tzvf archive.tgz` *d.* `tar tgz archive`
e. `tar xzvf archive.tgz`

27. If the current directory contains files **abc**, **bbc**, **cbc**, and **bbc** contains just the line **dbd**, what is the output of the following command: `grep 'bb*' bbc`
a. `dbd` *b.* an error message *c.* `bbc`
d. `cbc` *e.* no output

28. A shell script named **bar** is executed as follows:
```
./bar a  "b c"  'a  '
```
Inside the script is the line: `head "$@"`
How many arguments are passed to the **head** command inside the script?
a. `4` *b.* `6` *c.* `2` *d.* `3` *e.* `5`

29. What command would you use to list your **at** job numbers?
a. `at -v` *b.* `atq` *c.* `at -c`
d. `at -q` *e.* `at -m`

30. What would be the output of the following command line:
```
echo a b c d | awk '{print NF}'
```
a. **d** *b.* **a b c d** *c.* **NF**
d. no output *e.* **4**

31. When you create a user and their home directory with **useradd** by default the home directory will contain copies of files from which directory?
a. **/etc/default** *b.* **/etc/profile**
c. **/etc/login.defs** *d.* **/etc/sysconfig/default**
e. **/etc/skel**

32. What would be the output of the following command line:
```
echo a b c d | awk '{print $NF}'
```
a. **a b c d** *b.* **$NF** *c.* **d**
d. no output *e.* **4**

33. To resume a stopped process in the background using Job Control, where *N* is the job number of the process and *PID* is its process ID, you would type
a. **bg %***N* *b.* **fg %***PID* *c.* **bg %***PID*
d. **fg** *PID* *e.* **fg** *N*

34. Which of the following commands could be used to bring a system into single user mode?
a. **telinit 0** *b.* **shutdown now**
c. **shutdown -h now** *d.* **telinit 6**
e. **init 0**

35. Which line below passes three *separate* arguments to the **cat** command when placed inside a shell script named **foo** invoked by the command line:
```
./foo  one  two  three
```
a. **cat "$@"** *b.* **cat "$1 $2 $3"**
c. **cat "$? $? $?"** *d.* **cat "$*"**
e. **cat "$#"**

36. Which of the following **PATH** statements makes the most sense?
a. **PATH=/bin:/bin/cat:/usr/bin**
b. **PATH=/bin/sh:/usr/bin:/etc:/bin**
c. **PATH=/bin:/usr/bin:/etc**
d. **PATH=/bin:/usr/bin:/etc/passwd**
e. **PATH=/bin/ls:/etc:/usr/bin**

37. If variable **mt** might contain nothing (a null value - defined but empty), which command sequence correctly tests for this and prints **OK**?
a. **if [$mt -eq :] ; then echo OK ; fi**
b. **if [''$mt'' = ''''] ; then echo OK ; fi**
c. **if [$mt -eq ""] ; then echo OK ; fi**
d. **if ["$mt" = *] ; then echo OK ; fi**
e. **if ["$mt" = ""] ; then echo OK ; fi**

38. What is the output on your screen of this command line:
```
echo hi | sed -e 's/HI/HO/'
```
a. **HI** *b.* **ho**
c. no output on screen *d.* **HO**
e. **hi**

39. If the file **foo** in the current directory contains just the line **dbd**, what is the output of the following command: **grep '[b1]' foo**
a. **foo** *b.* an error message *c.* **dbd**
d. **no output** *e.* **123**

40. If the current directory contains files **abc**, **bbc**, **cbc**, and **bbc** contains just the line **dbd**, what is the output of the following command: **grep bb* bbc**
a. **dbd** *b.* an error message *c.* **cbc**
d. no output *e.* **bbc**

41. Which of the following options for **bash** or **sh** might useful for debugging a shell script?
a. **-r** *b.* **-c** *c.* **-z** *d.* **-l** *e.* **-x**

42. To send a **SIGTERM** signal to a process with process ID *PID*, which of the following commands would you use?
a. **send** *PID* **SIGTERM** *b.* **kill -SIGTERM** *PID*
c. **kill** *PID* **SIGTERM** *d.* **signal -SIGTERM** *PID*
e. **send -SIGTERM** *PID*

43. In a shell script, which of the following will cause the script to print **enter:** on stderr and read what the user types into the variable **input**?
a. **read >enter: <input** *b.* **read -p "enter:" input**
c. **read input "enter:"** *d.* **read >enter: input<**
e. **read "enter:" input**

44. Which of the following options for **bash** or **sh** might useful for debugging a shell script?
a. **-l** *b.* **-r** *c.* **-z** *d.* **-v** *e.* **-c**

45. If the file **foo** in the current directory contains just the line **dbd**, what is the output of the following command: **grep '[[:alpha:]]' foo**
a. **dbd** *b.* an error message *c.* **foo**
d. no output *e.* **123**

46. A shell script named **bar** is executed as follows:
```
./bar "a b" "c d e" f
```
Inside the script is the line: **echo "$2"**
What is the output on your screen from this line?
a. **$2** *b.* **b"** *c.* **b**
d. **c d e** *e.* **a b**

47. Inside a bash shell script, which of the following would expand to all of the arguments that were passed to the script, each as a separate word?
a. **"$0"** *b.* **"$#"** *c.* **"$*"** *d.* **"$?"** *e.* **"$@"**

48. A shell script named **bar** is executed as follows:
    ./bar a "b c" 'a '
    Inside the script is the line: **head "$@"**
    How many arguments are passed to the **head** command inside the script?
    a. **3** *b.* **2** *c.* **6** *d.* **5** *e.* **4**

49. If **guru=linus** then which one of the following **case** patterns will match this statement: **case "$guru" in**
    a. **lin?) echo yes ;;**
    b. **guru) echo yes ;;**
    c. **[linus] | [LINUS]) echo yes ;;**
    d. **"linu?") echo yes ;;**
    e. **l?nus) echo yes ;;**

50. Which of the following commands would you use configure the **ntpd** daemon to run in runlevels **2**,**3**,**4**, and **5**?
    a. **chkconfig ntpd on** *b.* **ntpd --levels 2345**
    c. **service ntpd 2345** *d.* **runlevel ntpd 2345**
    e. **ntpd run 2345**

51. To find out whether the **ntpd** service was running, you could use which of the following commands?
    a. **service ntpd status** *b.* **chkservice ntpd**
    c. **service chkconfig ntpd** *d.* **ntpd --check**
    e. **chkconfig ntpd on**

52. In the **/etc/suoders** file, what word goes in front of **ALL=(ALL) ALL** to allow members of the group **wheel** to run commands as **root**?
    a. **#wheel** *b.* **wheel** *c.* **%wheel**
    d. **sudoers** *e.* **%sudoers**

53. If a shell script named **foo** contains the line:
    if ['$3' = "$2"] ; then echo SAME ; fi
    then which of the following command lines will always produce **SAME** as output?
    a. **./foo '$1' "$3" $2** *b.* **./foo 2 '$3' 1**
    c. **./foo $1 '$2' $3** *d.* **./foo $1 $2 $3**
    e. **./foo $3 "$2" $1**

54. In a shell **case** structure, the **case** segment that will GLOB match the text x, y, or z, is coded as
    a. **x,y,z)** *b.* **x|y|z)** *c.* **x/y/z)**
    d. **x\y\z)** *e.* **x:y:z)**

55. Which of the following commands could be used to disable password authentication for the user, **user001**?
    a. **passwd_disable user001** *b.* **passwd -x user001**
    c. **passwd -l user001** *d.* **gpasswd user001**
    e. **passwd -d user001**

56. If a script named **bar** contains a loop that starts:
    for i in "$@" ; do
    and the script is executed using this command line:
    ./bar a ' b d ' e f " g h " a
    how many times will the loop iterate?
    a. 6 iterations *b.* 9 iterations *c.* 8 iterations
    d. 1 iteration *e.* 7 iterations

57. In a shell script, if **read onevar twovar**
    is executed, and the user enters **a b c d**
    then what will **onevar** and **twovar** contain, respectively?
    a. nothing and "**a b c d**" *b.* "**a b c**" and "**d**"
    c. "**a b**" and "**c d**" *d.* "**a b c d**" and nothing
    e. "**a**" and "**b c d**"

58. If variable **a** might contain nothing (a null value - defined but empty), which command sequence correctly tests for this and prints the date?
    a. **if test "" = "$a" ; then date ; fi**
    b. **if ["$a" = *] ; then date ; fi**
    c. **if [$a = /dev/null] ; then date ; fi**
    d. **if ['''' = ''$a''] ; then date ; fi**
    e. **if test "" -eq $a ; then date ; fi**

59. If a shell script named **foo** contains the line:
    if ['$1' = "$2"] ; then echo SAME ; fi
    then which of the following command lines will produce **SAME** as output?
    a. **./foo bar '$1'** *b.* **./foo 'bar' "bar"**
    c. **./foo bar 'bar'** *d.* **./foo 1 "$1"**
    e. **./foo $1 $1**

60. Inside a bash shell script, which of the following would expand to the number of arguments passed to the script?
    a. **"$?"** *b.* **"$*"** *c.* **"$0"** *d.* **"$#"** *e.* **"$@"**

61. Which command sequence correctly searches for the **string** and then prints **OK** if it is found inside the password file?
    a. **if test string = /etc/passwd ; then echo OK ; fi**
    b. **if test string /etc/passwd ; then echo OK ; fi**
    c. **if [test string /etc/passwd] ; then echo OK ; fi**
    d. **if grep string /etc/passwd ; then echo OK ; fi**
    e. **if [grep string /etc/passwd] ; then echo OK ; fi**

62. Which of the following commands would you use to install the **fortune** software package (and its dependencies) on your CentOS virtual machine?
    a. **yummy fortune** *b.* **pkginst fortune**
    c. **pkg -i fortune** *d.* **yum install fortune**
    e. **install pkg fortune**

63. If **guru=linus** then which one of the following **case** patterns will match this statement: **case "$guru" in**
a. **"linu?") echo yes ;;**
b. ***) echo yes ;;**
c. **(*nus echo yes ;;**
d. **[linus] | [LINUS]) echo yes ;;**
e. **lin?) echo yes ;;**

64. In a shell **case** structure, the **case** segment that will GLOB match the text a, b, or c, is coded as
a. **a|b|c)** *b.* **a,b,c)** *c.* **a\b\c)**
d. **a:b:c)** *e.* **a/b/c)**

65. If **browser=lynx** then which one of the following **case** patterns will match this statement: **case "$browser" in**
a. **(*ynx echo yes ;;**
b. **@) echo yes ;;**
c. **[lynx] | [LYNX]) echo yes ;;**
d. **?lynx?) echo yes ;;**
e. **l?n?) echo yes ;;**

66. Inside a bash shell script, which of the following would expand to the name of the script itself?
a. **"$*"** *b.* **"$@"** *c.* **"$0"** *d.* **"$?"** *e.* **"$#"**

67. If **foo** is a directory that contains only the file **bar** and **/dir1** is an empty directory, what is in /dir1 after running the following command?
rsync -avH foo/ /dir1
a. a symlink to foo *b.* **dir1** *c.* **foo**
d. nothing *e.* **bar**

68. What would the following command do: **at 4pm**
a. run the user's **crontab** jobs every day at 4pm
b. read commands from stdin to be run every day at 4pm
c. issue an error message
d. read commands from stdin to be run once at 4pm
e. run the user's **crontab** jobs at 4pm

69. If a shell script **myscript.sh** is called this way:
./myscript.sh a b c
and the first line inside the script below the script header is
shift; echo "$#$1"
what is the output of that line?
a. **3b** *b.* **2b** *c.* **3a** *d.* **4c** *e.* **2a**

70. Which of the following **bash PATH** statements makes the most sense?
a. **PATH=/bin:/bin/cat:/usr/bin**
b. **PATH=/bin/sh:/usr/bin:/etc:/bin**
c. **PATH=/bin:/usr/bin:/etc**
d. **PATH=/bin:/usr/bin:/etc/passwd**
e. **PATH=/bin/ls:/etc:/usr/bin**

71. In a shell script, which of the following will cause the script to stop and wait until the user enters something at the keyboard?
a. **<myvar** *b.* **myvar=read** *c.* **read myvar**
d. **read <<myvar** *e.* **<read**

72. Which command sequence correctly compares the numbers and prints **OK**?
a. **if [1 -lt 2] ; then echo OK ; fi**
b. **if (let 2 > 1) ; then echo OK ; fi**
c. **if (1 let 2) ; then echo OK ; fi**
d. **if [! 2 < 1] ; then echo OK ; fi**
e. **if [2 > 1] ; then echo OK ; fi**

73. In a shell script, which of the following would result in in the expansion of the positional parameter representing the first argument without processing any special characters inside the expansion?
a. **$1** *b.* **\$1** *c.* **"$1"**
d. **'$1'** *e.* **"\$1"**

74. Which of the following commands could be used to create a new user named **user001**, with full name "User One" ?
a. **useradd -c "User One" user001**
b. **usermod -c "User One" user001**
c. **newuser user001 -c "User One"**
d. **passwd -c "User One" user001**
e. **newuser -c "User One" user001**

75. Inside a bash shell script, which of the following would expand to the exit status of the last command?
a. **"$@"** *b.* **"$?"** *c.* **"$*"** *d.* **"$#"** *e.* **"$0"**

76. Which of these statements is true?
a. The **ls dir** command looks up the directory argument **dir** in your **$PATH**.
b. If **/p** is an empty directory, **ls /p/.*** produces an error message.
c. Either single or double quotes will stop shell GLOB (wildcard) patterns from expanding.
d. Typing **./script** and **bash script** always give identical results.
e. If **/q** is an empty directory, **echo /q/.*** produces an error message.

77. What is the output of the following sequence of **bash** commands:
```
echo 'Good-day World' | sed -e 's/^/99/g'
```
a. **99Good-day 99World** *b.* **99Good-day World**
c. **99ood-day 99orld** *d.* **99ood-day World**
e. **Good-day World**

78. Which of the following commands could be used to force the user **user001** to change their password the next time they log in?
a. **passwd -d 0 user001** *b.* **chage -d 0 user001**
c. **gpasswd user001** *d.* **passwd user001**
e. **force -d 0 user001**

79. If a script named **bar** contains a loop that starts:
```
for i in "$@" ; do
```
and the script is executed using this command line:
```
./bar 0 ' 1 2 ' 3 4 " 5 6 "
```
how many times will the loop iterate?
a. 8 iterations *b.* 1 iteration *c.* 5 iterations
d. 6 iterations *e.* 7 iterations

80. If **a=1** and **b=1**, which command sequence correctly compares the two numbers as equal and prints **OK**?
a. **if [$a==$b] ; then echo OK ; fi**
b. **if test $b -eq $a ; then echo OK ; fi**
c. **if [b = a] ; then echo OK ; fi**
d. **if test a == b ; then echo OK ; fi**
e. **if [a -eq b] ; then echo OK ; fi**

81. A **crontab** entry of **5 6 * * * /bin/somecommand** would run **somecommand** when and how often?
a. at 6:05am every day
b. at 5:06am every business day
c. at 5:06am every day
d. at 12:05am every business day and Saturday
e. at 6:05am every business day

82. If the file **foo** in the current directory contains just two lines **dbd**, and **123**, what is the output of the following command: **grep '[:alnum]' foo**
a. **123** *b.* **dbd** *c.* no output
d. **foo** *e.* an error message

83. Which of the following commands would allow a properly configured user to type their own password to become **root** with an environment set up as if they had logged in as **root**?
a. **sudo -s** *b.* **sudo -i** *c.* **su -**
d. **sudo** *e.* **su**

84. Which of the following, as first line of a shell script, would mean that when the script is run as a command, **/bin/sh** will be run with the **-u** option to process the script.
a. **!/bin/sh -u** *b.* **#/bin/sh -u** *c.* **!!/bin/sh -u**
d. **!#/bin/sh -u** *e.* **#!/bin/sh -u**

85. If you have a file **mytasks** of commands in **crontab** format, you could submit that file to be your live **crontab** file by running which of the following commands?
a. **echo mytasks | crond** *b.* **crontab -l mytasks**
c. **crontab -e mytasks** *d.* **crontab -r mytasks**
e. **crontab < mytasks**

86. If the current directory contains files **abc**, **bbc**, **cbc**, and **bbc** contains just the line **dbd**, what is the output of the following command: **grep "bb*" bbc**
a. an error message *b.* **bbc** *c.* **cbc**
d. **dbd** *e.* no output

87. If a script named **bar** contains a loop that starts:
```
for i in "$*" ; do
```
and the script is executed using this command line:
```
./bar a ' b d ' e f " g h " a
```
how many times will the loop iterate?
a. 9 iterations *b.* 6 iterations *c.* 1 iteration
d. 7 iterations *e.* 8 iterations

88. If a script named **bar** contains a loop that starts: **for i do**
and the script is executed using this command line:
```
./bar a ' b d ' e f " g h "
```
how many times will the loop iterate?
a. 7 iterations *b.* 8 iterations *c.* 5 iterations
d. 6 iterations *e.* 1 iteration

89. Which of the following is not an attribute of a Unix/Linux process:
a. Parent Process ID *b.* Effective Group ID
c. Effective User ID *d.* Process ID
e. CPU identifier

90. If a script named **bar** contains a loop that starts: **for i do**
and the script is executed using this command line:
```
./bar a ' b d ' e f " g h " a
```
how many times will the loop iterate?
a. 8 iterations *b.* 9 iterations *c.* 7 iterations
d. 6 iterations *e.* 1 iteration

91. If the line, **`exit 3`**
is executed in a shell script, what is the result?
a. an invalid argument error message
b. termination with an exit status of 3
c. termination with an exit status of 0
d. the script breaks out of up to 3 levels of loops
e. termination after sleeping for 3 seconds

92. Which of these statements is true?
a. Command **`apropos`** is an exact synonym for command **`man`**.
b. To erase an entire line of typing, type **`[ALT]-[DELETE]`**.
c. The **`file`** command creates a new, empty file in the current directory
d. To interrupt a Unix process from the keyboard, type **`[CONTROL]-[D]`**.
e. To indicate End-of-File (no more input) to a program, type **`[CONTROL]-[D]`**.

93. If **`a=1`** and **`b=1`**, which command sequence correctly compares the two numbers as equal and prints **`OK`**?
a. **`if [ a = b ] ; then echo OK ; fi`**
b. **`if [ $a==$b ] ; then echo OK ; fi`**
c. **`if test a -eq b ; then echo OK ; fi`**
d. **`if [ $a -eq $b ] ; then echo OK ; fi`**
e. **`if ( a == b ) ; then echo OK ; fi`**

94. Which of the following would result in a "true" exit status?
a. **`[ '00' != "00" ]`** *b.* **`[ 00 = 0 ]`**
c. **`[ '00' -eq "0" ]`** *d.* **`[ '00' -ne "0" ]`**
e. **`[ '00' = "0" ]`**

95. Which of the following **`PATH`** statements makes the most sense?
a. **`PATH=/bin/sh:/usr/bin:/etc:/bin`**
b. **`PATH=/etc:/usr/bin:/bin`**
c. **`PATH=/bin:/usr/bin:/etc/passwd`**
d. **`PATH=/bin/ls:/etc:/usr/bin`**
e. **`PATH=/bin:/bin/cat:/usr/bin`**

96. Which of the following **`PATH`** statements makes the most sense?
a. **`PATH=/dev:/bin:/usr/bin:/etc`**
b. **`PATH=/bin:/bin/cat:/usr/bin`**
c. **`PATH=/dev/null:/usr/bin:/etc:/bin`**
d. **`PATH=/bin/ls:/etc:/usr/bin`**
e. **`PATH=/bin:/usr/bin:/etc/passwd`**

97. If **`x=5`** and **`y=5`**, which command sequence correctly compares the two numbers as equal and prints **`OK`**?
a. **`if test x -eq y ; then echo OK ; fi`**
b. **`if [ $x==$y ] ; then echo OK ; fi`**
c. **`if [ x = y ] ; then echo OK ; fi`**
d. **`if ( x == y ) ; then echo OK ; fi`**
e. **`if test $x -eq $y ; then echo OK ; fi`**

98. Which command on a Unix/Linux system would you use to run a command **`somecommand`** at a less urgent scheduling priority to let other processes with a more urgent scheduling priority run first?
a. **`nice somecommand`** *b.* **`somecommand nice`**
c. **`nice -somecommand 10`** *d.* **`somecommand -nice -10`**
e. **`somecommand -nice`**

99. What command would you use to see the command that **`at`** job number **`2`** will run?
a. **`at -v 2`** *b.* **`at -m 2`** *c.* **`at -c 2`**
d. **`at -l 2`** *e.* **`atq 2`**

100. Which of the following commands would you use to start the **`ntpd`** daemon, if you had just installed it and if it were not already running?
a. **`ntpd service on`** *b.* **`service ntpd start`**
c. **`chkconfig ntpd on`** *d.* **`kill -9 ntpd`**
e. **`go ntpd`**

101. Which line below is most likely to be the beginning of an error message?
a. **`echo 1<&2 "... "`** *b.* **`echo 2>&1 "... "`**
c. **`echo 1>&2 "... "`** *d.* **`echo 2>$1 "... "`**
e. **`echo 2<$1 "... "`**

102. Which command sequence correctly compares the two numbers and prints **`OK`**?
a. **`if [ 4 -gt 3 ] ; then echo OK ; fi`**
b. **`if ( let 4 > 3 ) ; then echo OK ; fi`**
c. **`if [ ! 4 <= 3 ] ; then echo OK ; fi`**
d. **`if [ 4 > 3 ] ; then echo OK ; fi`**
e. **`if ( ! 4 < 3 ) ; then echo OK ; fi`**

103. If variable **`x`** might contain nothing (a null value - defined but empty), which command sequence correctly tests for this and prints **`OK`**?
a. **`if [ $x -eq "" ] ; then echo OK ; fi`**
b. **`if [ "$x" = "" ] ; then echo OK ; fi`**
c. **`if [ $x -eq : ] ; then echo OK ; fi`**
d. **`if [ "$x" = * ] ; then echo OK ; fi`**
e. **`if [ ''$x'' = '''' ] ; then echo OK ; fi`**

104. Inside a bash shell script, which of the following would expand to one word containing all of the arguments that were passed to the script?
a. **`"$#"`** *b.* **`"$?"`** *c.* **`"$*"`** *d.* **`"$@"`** *e.* **`"$0"`**

105. In response to the following command line: **`read var1 var2 var3`** which user keyboard input line below will assign the text **`three`** to the shell variable named **`var3`**?
   a. **`one,two,three`**
   b. **`one:two:three`**
   c. **`one two three`**
   d. **`$var1="one" $var2="two" $var3="three"`**
   e. **`var1=one var2=two var3=three`**

106. Which line below puts the count of the number of lines in the password file into the variable **`foo`**?
   a. **`foo=$( wc /etc/passwd | awk echo $1 )`**
   b. **`foo=$( wc -l /etc/passwd | awk "print $1" )`**
   c. **`foo=$( cat -c /etc/passwd )`**
   d. **`foo=$( wc -l </etc/passwd )`**
   e. **`foo=$( awk -F: /etc/passwd | wc -l )`**

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