Evaluation: 70 Questions **Name: _____**

Important Instructions

1. Read all the instructions and both sides of all pages.
2. Manage your time when answering questions on this test.
   Answer the questions you know, first.

Multiple Choice - 70 Questions - 20% of 30%

(Office use only: 16 3 11 39 31 6 48 35 8 25 63 45 52 66 55 19 36 9 28 21 5 18 46 68 14 12 42 15 51 57 1 17 32 38 44 13 23 53 47 22 33 41 34 61 59 26 29 56 64 60 7 65 69 4 58 2 10 50 40 37 67 43 70 24 30 54 27 62 20 49)

1. In an empty directory, what is the length of the longest file name created by the following **bash** shell two-command sequence:
   ```
   var='1 12 123 1234 12345' ; touch '$var'
   ```
   a. 13 characters
   b. 3 characters
   c. 1 character
   d. 2 characters
   e. 4 characters

2. If **a=xxx** and **b=yyy** then what is the output of the following sequence of **bash** commands: **if $a = $b ; then echo $a ; fi**
   a. **test: $a: integer expression expected**
   b. **test: xxx: integer expression expected**
   c. no output
   d. **xxx**
   e. **bash: xxx: command not found**

3. What is the output of the following sequence of **bash** commands:
   ```
   x=0 ; test $x ; echo $?
   ```
   a. **test: $x: integer expression expected**
   b. no output
   c. the number 0 or 1 followed by another 0 or 1 on a new line
   d. **1**
   e. **0**

4. Which of the following shell command lines displays all the names in the current directory that are exactly three letters (alphabetic) long (and nothing else)?
   a. **echo [a,zA,Z][a,zA,Z][a,zA,Z]**
   b. **echo [azAZ][azAZ][azAZ]**
   c. **echo [a-zA-Z][a-zA-Z][a-zA-Z]**
   d. **echo ???**
   e. **echo [a-zA-Za-zA-Za-zA-Z]**

5. What is the output of this sequence of three shell commands:
   ```
   umask 457 ; mkdir newdir ; ls -ld newdir
   ```
   a. **dr--r-xrwx 2 me me 512 Oct 1 1:12 newdir**
   b. **dr-xr-xrwx 2 me me 512 Oct 1 1:12 newdir**
   c. **d-wx-w-rwx 2 me me 512 Oct 1 1:12 newdir**
   d. **d-w--w---- 2 me me 512 Oct 1 1:12 newdir**
   e. **d-wx-w---- 2 me me 512 Oct 1 1:12 newdir**

6. What is the output of the following sequence of **bash** commands:
   ```
   echo wc >wc ; wc wc >wc ; head wc
   ```
   a. **wc**
   b. **1 1 3 wc**
   c. **0 0 0 wc**
   d. no output
   e. **1 1 2 wc**

7. Which of the following statements is true about this shell command line:
   ```
   >bar zoom bar haven
   ```
   a. The command **bar** sees only two arguments
   b. The command **zoom** sees two arguments.
   c. The command **zoom** sees three arguments.
   d. Error: The command name is missing from the command line.
   e. The command **bar** sees three arguments.

8. Given my directory **dir** and my file **dir/bar** owned by me, which permissions allow me to change or create new content (data) in the file **dir/bar** but not delete the file?
   a. Permissions **600** on directory **dir** and **700** on file **dir/bar**.
   b. Permissions **400** on directory **dir** and **400** on file **dir/bar**.
   c. Permissions **100** on directory **dir** and **100** on file **dir/bar**.
   d. Permissions **500** on directory **dir** and **600** on file **dir/bar**.
   e. Permissions **200** on directory **dir** and **200** on file **dir/bar**.

9. What is the output of the following sequence of **bash** commands:
   ```
   date='October Monday' ; test date = date
   ```
   a. **0**
   b. **test: too many arguments**
   c. **Mon Oct 27 17:01:38 EST 2003**
   d. **1**
   e. no output

10. How many arguments and options are there to the command:
    ```
    sort -r <infile
    ```
    a. Two arguments, neither of which is an option.
    b. Three arguments, one of which contains an option and one is a pathname.
    c. One command line argument containing one option name.
    d. A file name starting with a dash and an **<infile** switch option argument.
    e. Two arguments, one of which is a single option name and the other is a pathname.

11. Which Unix command sequence deletes a directory and everything inside it?
    a. **rm -all dir**
    b. **deltree -all dir**
    c. **rmdir -r dir**
    d. **rm -r dir**
    e. **rmdir -all dir**

12. If directory **/dir** contains these three four-character file names: **.123**, **.124**, **.???**, then what is the output of the following **bash** shell command line:
    echo /dir/????
    a. **/dir/.123 /dir/.124 /dir/.???**
    b. **echo: /dir/????: No such file or directory**
    c. **/dir/????**
    d. no output
    e. **/dir/.123 /dir/.124**

13. If **/bin/pig** is a program that outputs **hi** and **/usr/bin/pig** is a program that outputs **foo** what is the output of this shell command sequence:
    PATH=/etc:/usr/bin:/bin ; pig
    a. **hi** followed by **mom**
    b. **foo**
    c. **bash: pig: command not found**
    d. **foo** followed by **hi**
    e. **hi**

14. What is the output of this sequence of three shell commands:
    echo x >abc ; ls >abc abc ; wc abc
    a. **1 1 4 abc**
    b. no output
    c. **1 1 2 abc**
    d. **1 1 3 abc**
    e. **0 0 0 abc**

15. Which command line below does not show any lines from inside the file **pig**?
    a. **head pig**
    b. **tail pig**
    c. **ls pig**
    d. **less pig**
    e. **more pig**

16. If file **foo** contains nine lines, each of which is the one-digit line number of the line in the file (**1** through **9**), what is the output of this command:
    cat foo foo | sort -r | head -4 | tail -1
    a. **7**
    b. **6**
    c. **5**
    d. **9**
    e. **8**

17. Given my directory **dir** and my file **dir/bar** owned by me, which permissions allow me to delete the file **dir/bar** from the directory, but not change the content (data) in the file?
    a. Permissions **100** on directory **dir** and **200** on file **dir/bar**.
    b. Permissions **300** on directory **dir** and **300** on file **dir/bar**.
    c. Permissions **500** on directory **dir** and **400** on file **dir/bar**.
    d. Permissions **300** on directory **dir** and **500** on file **dir/bar**.
    e. Permissions **100** on directory **dir** and **100** on file **dir/bar**.

18. What is the output of the following sequence of **bash** commands:
    x=1 ; touch x ; test ! -z $x ; echo $?
    a. no output
    b. **1**
    c. **test: $x: integer expression expected**
    d. **0**
    e. the number 1 or 0 followed by another 1 or 0 on a new line

19. What is the **bash** shell output of this command sequence:
    false && echo "linux rocks $?"
    a. **linux rocks 1**
    b. **linux rocks 1**
    c. **linux rocks 0**
    d. no output
    e. **linux rocks 0**

20. 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 from this line?
    a. **1 2 3**
    b. **3 4**
    c. **"3**
    d. **2 3 4**
    e. **$3**

21. If **a=pig** and **b=dog** then what is the output of the following sequence of **bash** commands: **[$a = pig -a $b = pig] ; echo $?**
    a. **test: $a: integer expression expected**
    b. no output
    c. **0**
    d. the number 1 or 0 followed by another 1 or 0 on a new line
    e. **1**

22. If file **foo** contains nine lines, each of which is the one-digit line number of the line in the file (**1** through **9**), what is the output of this command:
    cat foo foo | cat | tail -5 | head -1
    a. **8**
    b. **5**
    c. **7**
    d. **6**
    e. **9**

23. If directory **dir** contains only these five two-character file names: **a?**, **11**, **?1**, **1***, **.1**, then which shell command below will remove *only* the single two-character name **?1** from the directory?
    a. **rm dir/?1**
    b. **rm dir/*1**
    c. **rm dir/??**
    d. **rm dir/1***
    e. **rm dir/\??**

24. Given this long listing:
```
drwxr-xr-x 448 me me 296 Dec 4 9:12 /dir
```
    How many subdirectories lie immediately under **/dir**?
    a. 296
    b. 448
    c. there is not enough information shown to answer the question
    d. 446
    e. 294

25. What is the **bash** shell output of this two-command sequence:
```
cd /etc/passwd && echo "in $(pwd)"
```
    a. no output
    b. **in $(pwd)**
    c. **bash: cd: /etc/passwd: Not a directory**
    d. **in /etc**
    e. **in 0pwd)**

26. What is the output of the following sequence of **bash** commands:
```
a=1 ; b=2 ; test $a -ge $b ; echo $?
```
    a. no output
    b. **1**
    c. **0**
    d. **test: $a: integer expression expected**
    e. the number 1 or 0 followed by another 1 or 0 on a new line

27. If file **/a** contains 40 lines, and file **/b** contains 60 lines, then how many lines are output by this command: **sort /a /b | cat /a | cat /b**
    a. **200**
    b. **160**
    c. **40**
    d. **60**
    e. **100**

28. What is the **bash** shell output of this two-command sequence:
```
cd /bin && echo "echo $(pwd)"
```
    a. **echo $(pwd)**
    b. **echo 0pwd)**
    c. **echo /bin**
    d. **/bin**
    e. no output

29. If the file **pig** contained the word **foo**, what would be the **bash** shell output of this two command sequence:
```
PATH=/etc/passwd:/bin/ls:/bin/cat ; /bin/ls pig
```
    a. no output
    b. **foo**
    c. **/bin/ls: pig: No such file or directory**
    d. **bash: /bin/ls: command not found**
    e. **pig**

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

31. If **a=9** and **b=9**, which **bash** command sequence correctly compares the two numbers as equal and prints **OK**?
    a. **if test a -eq b ; then echo OK ; fi**
    b. **if [$a==$b] ; then echo OK ; fi**
    c. **if [$a -eq $b] ; then echo OK ; fi**
    d. **if [a = b] ; then echo OK ; fi**
    e. **if (a == b) ; then echo OK ; fi**

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

33. In an empty directory, what is the shell output of these three commands:
```
touch xx .x xy .y xz ; x='x* y*' ; echo "$x"
```
    a. **$x**
    b. **xx xy xz y***
    c. **xx xy**
    d. **x* y***
    e. ***x *y**

34. What is the link count of file **foo** after this set of successful commands?
```
rm foo ; touch foo ; ln foo bar
cp bar x ; ln x y ; ln bar z ; ln z a
```
    a. 1
    b. 3
    c. 2
    d. 5
    e. 4

35. What is the output of this command sequence:
```
echo pig >one ; echo cow | head -2 one
```
a. **pig**
b. **cow** followed by **pig**
c. **pig** followed by **cow**
d. **cow**
e. an error message

36. What is the output of the following sequence of **bash** commands:
```
x=1 ; y=2 ; test $x -le $y ; echo $?
```
a. the number 0 or 1 followed by another 0 or 1 on a new line
b. **1**
c. **0**
d. no output
e. **test: $x: integer expression expected**

37. What is the **bash** shell output of this two-command sequence if run in a directory containing 123 files with names that are all the numbers from **1** to **123** inclusive:
```
glob="*" ; echo "$glob"
```
a. *
b. the file names **1** through **123**
c. **"$glob"**
d. the file names **1** through **123**, surrounded by quotes
e. **$glob**

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

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

40. If **foo** is a script containing the line **TERM=vt100 ; export TERM**, what is the output of the following sequence of **bash** commands:
```
TERM=linux ; ./foo ; echo $TERM
```
a. **vt100**
b. **TERM**
c. **$TERM**
d. **foo**
e. **linux**

41. In an empty directory, what is the shell output of these three commands:
```
touch .1 .2 .3 11 12 ; a='.1* .2*' ; echo '$a'
```
a. **11 .1 12 .2**
b. **.1 .2**
c. **.1* .2***
d. **'.1* .2*'**
e. **$a**

42. If file **/a** contains 20 lines, and file **/b** contains 30 lines, then how many lines are in file **/c** after this sequence of shell commands:
```
sort /a /b >/c ; cat /a >>/b ; sort /c /b /a >/c
```
a. no lines (empty file)
b. **50**
c. **70**
d. **120**
e. **80**

43. How many arguments are passed to the command by the shell on this command line:
```
<pig pig -b "-a -r" >pig pig pig
```
a. **2**
b. **4**
c. **6**
d. **3**
e. **5**

44. If **bar** is an executable script containing the line **cow=pig** then what is the **bash** output of this sequence of three commands:
```
cow=cat ; ./bar ; echo "the '$cow' ate"
```
a. **the 'pig' ate**
b. **the '$cow' ate**
c. **the 'cat' ate**
d. **the 'cow' ate**
e. **the $cow ate**

45. If **/etc/passwd** is a file name, which of the following pathnames always leads to the same file?
a. **./etc/passwd**
b. **/etc/passwd/../..**
c. **/etc/../../passwd**
d. **/etc/passwd/.**
e. **/../etc/passwd**

46. Which **bash** command sequence below always outputs just the date only if the first argument is both not empty and a directory?
a. **if [-d "$1" -a -s "$1"]; then date ; fi**
b. **if ["$1" -eq -f -a "$1" -eq -d]; then date ; fi**
c. **if [-s -a -d "$1"]; then date ; fi**
d. **if [-s && -d "$1"]; then date ; fi**
e. **if ["-s $1" && "-d $1"]; then date ; fi**

47. Given the following **bash** shell command line: **read hi my ok** which user keyboard input line below will assign the text **two** to the shell variable named **my**?
    a. **one,two,three**
    b. **<one <two <three**
    c. **one two three**
    d. **"one" "two" "three"**
    e. **hi=one my=two ok=three**

48. Which command line displays the contents of the Unix **passwd** file one page at a time?
    a. **less | /etc/passwd**
    b. **cat /etc/passwd >less**
    c. **/etc/passwd >less**
    d. **/etc/passwd | less**
    e. **less </etc/passwd**

49. Which of the command lines below can generate a non-empty file?
    a. **tail -5 /out >/out**
    b. **tr abc ABC </out >/out**
    c. **ls /out >/out**
    d. **grep -v /out /out >/out**
    e. **sort -r /out >/out**

50. If my current working directory is **/home**, and my home directory is **/home/xx**, which of the of the following commands copies the Unix password file into my home directory under the name **foo**?
    a. **cp ../etc/passwd ../xx/foo**
    b. **cp xx/../etc/passwd ../home/xx/foo**
    c. **cp ../home/xx/../etc/passwd ./xx/./foo**
    d. **cp ../../etc/passwd /xx/foo**
    e. **cp xx/../../etc/passwd xx/foo**

51. What is the output of the following sequence of **bash** commands:
    echo hi >wc ; wc wc >hi ; cat hi
    a. **1 1 2 wc**
    b. **0 0 0 wc**
    c. **1 1 3 wc**
    d. no output
    e. **hi**

52. What is the **bash** shell output of this two command sequence:
    PATH=/bin/ls:/bin/head:/bin/sh ; head nosuchfile
    a. **ls: /bin/head: command not found**
    b. **head: nosuchfile: No such file or directory**
    c. **bash: /bin/sh: No such file or directory**
    d. **bash: head: command not found**
    e. **bash: /bin/ls: command not found**

53. What minimal permissions must you have on a directory to be able to execute successfully the command **ls .** from *inside* the directory?
    a. **r-x**
    b. **--x**
    c. **r--**
    d. **-wx**
    e. **rw-**

54. If **a=cow** and **b=pig** then what is the output of the following sequence of **bash** commands: **[$a = pig -o $b = pig] ; echo $?**
    a. no output
    b. **1**
    c. **test: $a: integer expression expected**
    d. the number 1 or 0 followed by another 1 or 0 on a new line
    e. **0**

55. Which line below puts the count of the number of lines in the password file into the variable **foo**?
    a. **foo=[cat -l /etc/passwd]**
    b. **foo=$(cat -c /etc/passwd)**
    c. **foo=[wc /etc/passwd | echo $1]**
    d. **foo=$(wc -l </etc/passwd)**
    e. **foo=[grep -c /etc/passwd]**

56. If variable **mt** might contain nothing (a null value - defined but empty), which **bash** 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**

57. What is the output of the following sequence of **bash** commands:
    a=cow ; touch $a ; test -z $a ; echo $?
    a. no output
    b. the number 1 or 0 followed by another 1 or 0 on a new line
    c. **test: $a: integer expression expected**
    d. **1**
    e. **0**

58. Which command sequence below does *not* generate an error message from the last command in the sequence?
    a. **mkdir foo ; ln foo bar**
    b. **mkdir one one/two ; rmdir one/two**
    c. **mkdir foo foo/bar ; rmdir foo**
    d. **date >foo ; cp foo/. bar**
    e. **cat /etc/passwd > mail idallen@ncf.ca**

59. Which of the following shell command lines displays the names in the current directory that are exactly three numeric digits long (and nothing else)?
    a. **`echo [0-90-90-9]`**
    b. **`echo ???`**
    c. **`echo [0-9][0-9][0-9]`**
    d. **`echo [1-3][1-3][1-3]`**
    e. **`echo [1-31-31-3]`**

60. What is the link count of directory **`dir`** after this set of successful commands?
```
mkdir dir ; cd dir ; touch foo ; mkdir a b c
```
    a. 5
    b. 3
    c. 1
    d. 2
    e. 4

61. How can you ask the **`bash`** shell to complete commands or file names for you?
    a. Type **`[CONTROL]-[ALT]-[DEL]`** and the shell will present a menu of commands.
    b. You can type the first part of the command or file name and press the **`TAB`** key.
    c. You can type the first part of the command or file name and press the **`ALT`** key.
    d. Type **`[CONTROL]-[D]`** and the shell will present a menu of commands.
    e. Type **`[ALT]-[F2]`** the shell will present a menu of commands.

62. What is in the file named **`file`** after this command sequence:
```
echo a >c ; echo b >>c ; mv c d >file
```
    a. **`a`**
    b. no such file (nonexistent file)
    c. **`a`** followed by **`b`**
    d. **`b`**
    e. nothing - **`file`** is empty - no data

63. Select the correct **`bash`** shell order of command line processing:
    a. aliases, globs, variables, redirection
    b. redirection, aliases, globs, variables
    c. aliases, redirection, variables, globs
    d. aliases, variables, redirection, globs
    e. aliases, variables, globs, redirection

64. If **`pig=12`** and **`cat=99`** then which of the following **`bash`** command lines outputs only the word **`hi`** (and nothing else)?
    a. **`[ pig -ne cat ] && echo hi`**
    b. **`[ pig = pig ] && echo hi`**
    c. **`[pig!=pig] || echo hi`**
    d. **`[pig -eq 12] || echo hi`**
    e. **`[!pig = cat] && echo hi`**

65. What is the output of this sequence of three shell commands:
```
umask 762 ; touch newfile ; ls -l newfile
```
    a. **`-------r-- 1 me me 0 Oct 1 1:12 newfile`**
    b. **`------xr-x 1 me me 0 Oct 1 1:12 newfile`**
    c. **`-rwxrw--w- 1 me me 0 Oct 1 1:12 newfile`**
    d. **`--------wx 1 me me 0 Oct 1 1:12 newfile`**
    e. **`-rw-rw--w- 1 me me 0 Oct 1 1:12 newfile`**

66. Which of these first lines will cause this executable file to be interpreted using the Bash shell?
    a. **`!#/bin/bash -u`**
    b. **`!/bin/bash`**
    c. **`#!/bin/bash`**
    d. **`#/bin/bash`**
    e. **`/bin/bash -u`**

67. What is the **`bash`** shell output of this command sequence:
```
true && echo Hello     There $?
```
    a. no output
    b. **`Hello There 0`**
    c. **`Hello There ?`**
    d. **`Hello     There 1`**
    e. **`Hello     There ?`**

68. If **`happy`** were a file of text containing 50 different lines, what would be the output of this exact command line: **`diff happy happy`**
    a. no output
    b. the contents of file **`happy`** would be displayed
    c. an error message because **`diff`** doesn't allow the same file name twice
    d. several lines, which are the lines that are different between the two files
    e. an error message because **`diff`** only allows one file name

69. If a **`bash`** 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 $2 $2`**
    c. **`./foo "$1" '$2'`**
    d. **`./foo "bar" 'bar'`**
    e. **`./foo '$2' bar`**

70. Which command sequence below outputs only lines 10-15 of the Unix password file?
    a. **`tail -10 /etc/passwd | head -15 /etc/passwd`**
    b. **`head -10 /etc/passwd | tail -5 /etc/passwd`**
    c. **`tail -15 /etc/passwd | head -5`**
    d. **`head -15 /etc/passwd | tail -6`**
    e. **`head -15 /etc/passwd | tail -5 /etc/passwd`**

Answer Key - DAT 2330 – Ian Allen – Fall 2003 - DAT 2330 Unix Final - 30%

Office use only: 16 3 11 39 31 6 48 35 8 25 63 45 52 66 55 19 36 9 28 21 5 18 46 68 14 12 42 15 51 57 1 17 32 38 44 13 23 53 47 22 33 41 34 61 59 26 29 56 64 60 7 65 69 4 58 2 10 50 40 37 67 43 70 24 30 54 27 62 20 49

1. e
2. e
3. e
4. c
5. e
6. c
7. b
8. d
9. e
10. c
11. d
12. c
13. b
14. a
15. c
16. e
17. d
18. d
19. d
20. b
21. e
22. b
23. e
24. d
25. c
26. b
27. d
28. c
29. e
30. d
31. c
32. a
33. d
34. e
35. a
36. c
37. a
38. d
39. b
40. e
41. e
42. c
43. b
44. c
45. e
46. a
47. c
48. e
49. c
50. e
51. c
52. d
53. a
54. e
55. d
56. e
57. d
58. b
59. c
60. a
61. b
62. e
63. c
64. b
65. a
66. c
67. b
68. a
69. e
70. d

Count of a: 9 13%
Count of b: 11 16%
Count of c: 17 24%
Count of d: 14 20%
Count of e: 19 27%

With 5 choices: 70
1 2 3 4 5 6 7 8 9 10 11 12
13 14 15 16 17 18 19 20 21
22 23 24 25 26 27 28 29 30
31 32 33 34 35 36 37 38 39
40 41 42 43 44 45 46 47 48
49 50 51 52 53 54 55 56 57
58 59 60 61 62 63 64 65 66
67 68 69 70

Macro .cmd splits: 36
Macro .ans splits: 0