Evaluation: 44 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 - 44 Questions

This is a practice test containing many practice questions. The real test will contain some questions similar to these. There are probably many more questions in this practice test than there will be time for in the real test. The real test will have approximately one question per minute.

The real test may have some questions unlike anything given here. Knowing the concepts behind the questions is necessary; memorizing these specific answers won't help.

The answers to this test are in the Answer Key on the last page(s).

1. Which command line deletes all the blank lines from the input file?
   a. `awk -F' ' '{ delete; }' file`
   b. `awk '/^$/ == "" { delete; }' file`
   c. `sed -e ' d' file`
   d. `tr -d '[^$]' <file`
   e. `sed -e '/^$/d' file`

2. Which **awk** command outputs all lines where the second field contains only the string **xyzzy** and where the third field exactly matches the first field:
   a. `$2 == /^xyzzy$/ && $3 == $1 { print }`
   b. `$1 == $3 && "xyzzy" == $2 { print }`
   c. `$2 ~ /^xyzzy/ && $3 == $1 { print }`
   d. `$2 ~ /^xyzzy/ && $3 ~ /$1/ { print }`
   e. `$3 == $1 || "^xyzzy$" ~ $2 { print }`

3. Which command displays only the top 5 lines of **file**?
   a. `sed -n -e '1,5 p' file`
   b. `sed -e '5 d' file`
   c. `sed -n -e '5 p' file`
   d. `sed -e '5 $' file`
   e. `sed -n -e '/5/ p' file`

4. What is the output (if any) of this **bash** shell program fragment? (There are blanks between all the letters in the word list sections of the **for** loops.)

```
str=''
for x in   s l i c k  r u n  o x   ; do
    for y in   l i n u x  r o c k s   ; do
        if [ $x = $y ] ; then
            str=$str$y
        fi
    done
done
echo $str | sed -e 's/^\(.....\)/\1 /'
```

   a. `x`
   b. `s`
   c. `slick runox`
   d. `linux rocks`
   e. no output

5. Which **sed** command deletes only lines that do not contain any lower-case vowels (including blank lines):
   a. `/![aeiou]/d`
   b. `s/![aeiou]\+//g`
   c. `/[aeiou]/!d`
   d. `s/^[!aeiou]*$//`
   e. `/[^aeiou]/d`

6. Which command displays only the top 5 lines of **file**?
   a. `sed -e '5 q' file`
   b. `sed -e '5 d' file`
   c. `sed -e '5 $' file`
   d. `sed -e '5 p' file`
   e. `sed -e '/5/ p' file`

7. When you place several **sed** instructions in a file called **instruction-file**, you may issue the following command to tell **sed** to apply these instructions to file **file**:
   a. `sed -f instruction-file file`
   b. `sed -v instruction-file file`
   c. `sed -r instruction-file file`
   d. `sed -n instruction-file file`
   e. `sed -w instruction-file file`

8. Which **awk** command outputs the sum of the first two fields on every line:
   a. `$FN >= 2 { print $(1+$2) }`
   b. `{ print $(1+2) }`
   c. `RN >= 2 { print $(1+$2) }`
   d. `{ print $1+$2 }`
   e. `$1 > 0 && $2 > 0 { print $(1+$2) }`

9. 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. **6**
   b. **5**
   c. **4**
   d. **3**
   e. **2**

10. Which **awk** command outputs all lines where the second field is larger than the line number:
   a. **$2 > LN { print }**
   b. **$2 > $LN { print $0 }**
   c. **NR < $2 { print }**
   d. **$NF < $2 { print }**
   e. **$2 > $NR { print }**

11. What is the **sed** command to delete all empty lines (lines with no characters) from file **file**?
   a. **sed -e '/^,$/ d' file**
   b. **sed -e '/^*$/ d' file**
   c. **sed -e '/^ $/ d' file**
   d. **sed -e '/^[^]$/ d' file**
   e. **sed -n -e '/./ p' file**

12. Which **sed** command behaves identically to this: **grep '.' file**
   a. **sed -e '/^[^]$/ d' file**
   b. **sed -e 's/.//g' file**
   c. **sed -e '/./ s/.*//' file**
   d. **sed -n -e '/./ p' file**
   e. **sed -n -e '/^$/ d' file**

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

14. Which **sed** command finds every occurrence of three adjacent letters and reverses them: (e.g. **dogcatcow** would become **godtacwoc**; but, **do3ca;c.o** would not change).
   a. **s/\(![0-9]\)\{3\}/\3\2\1/g**
   b. **s/\([a-z]\)\([a-z]\)\([a-z]\)/\3\2\1/g**
   c. **s/\(![0-9]\)\(![0-9]\)\(![0-9]\)/\3\2\1/g**
   d. **s/\(^[0-9]\)\{3,3\}/\3\2\1/g**
   e. **s/\([^0-9]\)\([^0-9]\)\([^0-9]\)/\3\2\1/g**

15. 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. **5**
   b. **4**
   c. **2**
   d. **3**
   e. **6**

16. What is the output of the following sequence of **bash** commands:
   echo 'Good-day World' | tr -d -c 'W'
   a. **GoodWay World**
   b. **GoodWay orld**
   c. **GoodW ay World**
   d. **W**
   e. **Good-day orld**

17. What is the output of this **bash** shell program fragment? (There are blanks between all the letters in the word list section of the **for** loop.)

```
in='' out=''
for char in   l i n u x   ; do
    case "$char" in
    L|l)  in=$in$char ; out=${out}L ;;
    [Xx]) in=$in$char ; out=${out}X ;;
    esac
done
echo "linux rox" | tr $in $out
```

   a. **linux rox**
   b. **louux rox**
   c. **lINUx ROx**
   d. **LINUX ROX**
   e. **LinuX roX**

18. Which **sed** command finds every line that ends in the digits **123** and removes the first occurrence of the string **xyzzy** from those lines:
   a. **/[0-9][0-9][0-9]$/s/xyzzy//**
   b. **s/xyzzy.*123$/123/**
   c. **/123$/s/xyzzy//**
   d. **s/^.*xyzzy\(.*123\)$/\1/**
   e. **/xyzzy/s/[0-9][0-9][0-9]\$//**

19. Which command line deletes all the blank lines from the input file?
   a. **awk -F' ' '{ delete; }' file**
   b. **awk '/^$/ == "" { delete; }' file**
   c. **tr -d '[^$]' <file**
   d. **sed -e ' d' file**
   e. **sed -n -e '/./p' file**

20. Which **awk** command outputs lines where the last field is numeric?
    a. `$FN == "^[0-9]\+$" { print }`
    b. `NF == /^[0-9][0-9]*$/ { print $0 }`
    c. `$FN ~ /^[0-9]*$/ { print $0 }`
    d. `FN ~ /[0-9]\+/ { print $0-FN }`
    e. `$NF ~ /^[0-9]+$/ { print }`

21. 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. 1 iteration
    b. 7 iterations
    c. 6 iterations
    d. 9 iterations
    e. 8 iterations

22. Which **sed** command turns the string **Good-Day; World-Traveller** into **Day-Good; World-Traveller**:
    a. `s/\([a-z]*\)-\([a-z]*\)/$2-$1/`
    b. `s/\(.*\)-\(.*\)/$2-$1/`
    c. `s/\([^-]\+\)-\([^-;]\+\)/\2-\1/`
    d. `s/\(![-]\+\)-\(![-;]\+\)/\2-\1/`
    e. `s!/\([-]\+\)-\([-;]\+\)/\2-\1/`

23. Which command line deletes all the blank lines from the input file?
    a. `sed -n -e '/^$/p' file`
    b. `awk '/^$/ == "" { delete }' file`
    c. `awk -F' ' '{ delete; }' file`
    d. `tr -d '[^$]' <file`
    e. `awk '! /^$/ { print }' file`

24. What is the value of variable **foobar** at the end of the loop that starts:
    `for foobar in 5 5 $# $? 6 1 ; do`
    a. **0**
    b. the value is undefined
    c. **6**
    d. **1**
    e. **5**

25. What is the **sed** command to delete all empty lines (lines with no characters) from file **file**?
    a. `sed -e '/^*$/ d' file`
    b. `sed -e '/^$/ d' file`
    c. `sed -e '/^ $/ d' file`
    d. `sed -e '/^[^ ]$/ d' file`
    e. `sed -e '/^,$/ d' file`

26. 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. 7 iterations
    d. 8 iterations
    e. 1 iteration

27. 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 )`

28. Which **awk** command outputs non-blank lines where the line number is an exact multiple of the number of fields:
    a. `/FN >= 1 && (RN % FN == 0)/ { print }`
    b. `NR > 0 && (NF % NR) == 0 { print $0 }`
    c. `/FN >= 1/ { if (RN % FN == 0) print $0 }`
    d. `1 <= NF && 0 == (NR % NF) { print }`
    e. `1 <= RN && 0 == (FN % RN) { print }`

29. 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. 7 iterations
    e. 1 iteration

30. 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. **1**
    b. **4**
    c. **5**
    d. **2**
    e. **3**

31. Which `awk` command outputs all lines where the first field begins with the letters `abc` and the last field ends with the letters `xyz`:
    a. `$1 ~ /abc$/ && $NR ~ /^xyz/ { print }`
    b. `$NF ~ /xyz$/ && $1 ~ /^abc/ { print }`
    c. `NR = /^xyz$/ && $1 = /^abc$/ { print }`
    d. `$1 == "abc" && $FN == "xyz" { print }`
    e. `$1 = /abc/ && $FN = /xyz/ { print }`

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

33. 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. 8 iterations
    b. 7 iterations
    c. 12 iterations
    d. 9 iterations
    e. 6 iterations

34. Which `sed` command takes every occurrence of an asterisk (`*`) followed by a period (`.`) and reverses all of them:
    a. `s/[*][.]/\2\1/g`
    b. `s/\(\*\)\(\.\)/\2\1/`
    c. `s/(\*)(\.)/\2\1/g`
    d. `s/\(*\)\(.\)/\2\1/g`
    e. `s/\*\./.*/g`

35. The `sed` command has the syntax format:
    `sed 'Address1, Address2 Instruction Flag' Filename(s)`
    If both `Address1` and `Address2` are omitted from the `sed` command,
    a. only the last line of the file will be examined for editing.
    b. only the first line of the file will be examined for editing.
    c. only the first 10 lines of the file will be examined for editing.
    d. all lines of the file will be examined for editing.
    e. only the last 10 lines of the file will be examined for editing.

36. Why is the instruction used in a `sed` command usually enclosed in a pair of single quotes (`'`)?
    a. because single quotes are easier to type than double quotes.
    b. to forbid the shell from interpreting some of the special characters used in the sed instruction.
    c. to distinguish the sed instruction from the optional grep expression on the sed command.
    d. to prevent sed from interpreting the instruction as a file name.
    e. to permit the shell to expand the $USER variable in the sed expression.

37. Which `sed` command deletes only lines that contain at least one non-digit?
    a. `s/^[!0-9]*$//`
    b. `/[0-9]/!d`
    c. `/[^0-9]/d`
    d. `/![0-9]/d`
    e. `s/![0-9]\+//g`

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

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

40. Which `sed` command finds every line that contains the four digits 1, 2, 3, and 4 in ascending order (but with any number of any characters in between) and deletes the first letter on these lines:
    a. `/1.*2.*3.*4/s/[a-zA-Z]//`
    b. `/[1-1]*[1-2]*[1-3]*[1-4]/s/a-zA-Z/d`
    c. `/\1.*\2.*\3.*\4/[a-zA-Z]/d`
    d. `/[0-9].*[0-9].*[0-9].*[0-9]/s//[a-zA-Z]/`
    e. `/(1)*(2)*(3)*(4)/[a-zA-Z]\1\2\3\4/d`

41. Which `awk` command outputs the third field of lines that have at least three fields:
    a. `3 <= NF { print $(1+3-1) }`
    b. `FN >= 3 { print $3 }`
    c. `/$3/ { print $2+1 }`
    d. `/$3 != ""/ { print $1+1+1 }`
    e. `2 < $FN { print $3 }`

42. What is the output of the following sequence of **bash** commands:

    echo 'Good-day World' | tr -d 'W'

    a. **Good-day orld**
    b. **GoodWay orld**
    c. **Good-day World**
    d. **GoodW ay World**
    e. **GoodWay World**

43. Which **sed** command behaves identically to this: **grep -v '.' file**

    a. **sed -e '/./ d' file**
    b. **sed -e '/./ s/.*//' file**
    c. **sed -e '/^$/ d' file**
    d. **sed -e 's/.//g' file**
    e. **sed -e '/-v ./ p' file**

44. What is the output of the following sequence of **bash** commands:

    echo 'Good-day World' | sed -e 's/^/99/g'

    a. **99Good-day World**
    b. **99ood-day World**
    c. **Good-day World**
    d. **99Good-day 99World**
    e. **99ood-day 99orld**

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Answer Key - CST 8129 – Ian Allen – Fall 2005 - CST 8129 Practice Test

```
 1. e
 2. b
 3. a
 4. c
 5. c
 6. a
 7. a
 8. d
 9. c
10. c
11. e
12. d
13. c
14. b
15. d
16. d
17. e
18. c
19. e
20. e
21. c
22. c
23. e
24. d
25. b
26. a
27. d
28. d
29. e
30. a
31. b
32. c
33. a
34. e
35. d
36. b
37. c
38. a
39. b
40. a
41. a
42. a
43. a
44. a
```

```
Count of a:  12  27%
Count of b:  6  14%
Count of c:  10  23%
Count of d:  8  18%
Count of e:  8  18%

With 5 choices: 44

Macro .cmd split no indent: 1
Macro .cmd split with indent: 13
```