COMP111 - Software Tools
Midterm Exam (version 1)
October 31, 1996

Instructions:
1. This is a closed-book exam with 100 points total.
2. Each of the 25 multiple choice questions is worth 4 points.
3. Check that you have all 3 pages.
4. Use a number two pencil to write your name, student ID, lab section and TA, and answers on the scan form.

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1. In order to list files in long format, which of the following commands should be used?
   a) *ls -a* b) *ls -d* c) *ls -l* d) *ls -s* e) *ls -t*

2. Which of the following commands does NOT always bring you to your home directory?
   a) *cd ~* b) *cd ~/.* c) *cd $HOME* d) *cd ..* e) *cd*

3. One of the following programs is NOT used to send email. Which one?
   a) *ftp* b) *elm* c) *mail* d) *mailtool* e) *pine*

4. If you are in your home directory, how to change your current directory to Tommy's home directory?
   a) *cd* b) *cd ~* c) *cd tommy* d) *cd /tommy* e) *cd ~tommy*

5. Which command can be used to find out what processes are running on a computer?
   a) *who* b) *job* c) *ps* d) *which* e) *ls*

6. Which of the following creates a directory called "..." in the current directory that is a link to the parent's parent (grandparent) directory?
a) *ln -s ... ../..* b) *ln ../.. ...* c) *ln -s ./../.. ...* d) *mkdir ...; ln ../..* e) *ln . ../../...*

7. Which one of these commands has a different result than the other four?
a) *echo | echo > cat* b) *echo* c) *echo | cat | echo* d) *echo | cat* e) *echo | echo | cat*

8. Assuming that the current working directory contains the following files:
   maxsquare.c maxsquare.h maxsquare maxsquare.txt
   What is the output of the following command?
   *% ls *.**
a) maxsquare.c maxsquare.h maxsquare maxsquare.txt
b) maxsquare.c maxsquare.h maxsquare.txt
c) maxsquare.c maxsquare.h
d) maxsquare.c maxsquare.h maxsquare
e) maxsquare

The following two questions should be answered with the files and links created by these commands.

% cat > file
This is a file
^D
% cp file copy
% ln -s file softlink
% ln softlink hardlink
% rm file

9. What will be the results of these two commands?

	% cat softlink	*% cat hardlink*
a)	No such file or directory	No such file or directory
b)	No such file or directory	This is a file
c)	This is a file	No such file or directory
d)	This is a file	This is a file
e)	None of the above	

10. Independent of the last question, assume that the following commands are executed:

% echo This is a new file > file
% cat copy >> file

Which files have identical contents? (*file1*, *file2*) means the contents of *file1* and *file2* are identical.

a) (*copy*, *file*) and (*hardlink*, *softlink*)
b) (*copy*, *softlink*) and (*file*, *hardlink*)
c) (*copy*, *hardlink*) and (*file*, *softlink*)
d) (*copy*, *hardlink*, *softlink*)
e) (*file*, *hardlink*, *softlink*)

11. Assuming that the following files exist in a directory:

star_wars.c   star_trek.txt   star_man.bak   star_trek_tng.word

What is the result of executing the following command sequence?

*% ls *_*.* | grep trek | head -1*

a) star_trek.txt
b) star_trek.txt
   star_trek_tng.word
c) star_man.bak
d) star_wars.c
   star_man.bak
e) star_trek.txt
   star_trek_tng.word

12. If a file called *number* has the following contents:

    24
    320
    11
    40

What will be the output of the following command?

% sort number

a)
11
24
40
320

b)
320
40
24
11

c)
11
40
24
320

d)
320
40
24
11

e) none of the above

13. The following command is executed in the bourne shell.

$ *echo "Hi Bob"'How's it going'?'*

What is the output of the command?

a) *Hi Bob How s it going ?*
b) *Hi Bob How's it going?*
c) *Hi BobHows it going?*
d) *Hi BobHow's it going?*
e) None of the above.

14. What is the working directory after executing the following commands in sh ?

$ *cd /usr/bin; ((cd /usr; cd local/bin); (cd ..; (cd ../etc))); { cd ./..; }*

a) /usr/bin b) /usr/local/bin c) /usr d) /etc e) /usr/etc

15. What is the output of the command

echo ??

a) ??
b) undefined
c) all filenames with 2 or more characters in the current directory will be listed
d) all filenames with exactly 2 characters in the current directory will be listed
e) none of the above

16. Execute the following commands:

% echo 123 > orig.text
% ln -s orig.text s-link
% ln orig.text h-link
% echo 456 >> s-link
% echo 789 >> h-link
% rm orig.text
% ln h-link orig.text
% cat s-link

The output of the last command will be:

a) 123
456
789

b) 123
456

c) 456
789

d) 789

e) none of the above

17. Which of the following command sequences will result in one single word being displayed on the screen?

a) *echo 'Wai... Jo san'*

b) *echo This text goes in to a file > mytext.txt*
echo So does this text >> mytext.txt
echo And this >> mytext.txt
grep text mytext.txt | grep So

c) *mkdir /usr/tmp/question*
mkdir /usr/tmp/question/one
mkdir /usr/tmp/question/one/two
mkdir /usr/tmp/question/one/two/three
mkdir /usr/tmp/question/one/two/four
cd /usr/tmp/question/one/two/three
cd ../../two/four/../../two/three/../.
ls -D

d) *man man*

e) *echo echo*

18. The command

$ *(who; date) | tee whodate.txt*

executed in sh is equivalent to which of the followings?

a) *who | tee whodate.txt; date >> whodate.txt*
b) *who | tee whodate.txt; date | tee whodate.txt*
c) *who | tee whodate.txt; date; date >> whodate.txt*
d) who; date | tee whodate.txt
e) none of the above

19. A file called ’drinks’ contains the following text.

water
tea
coffee
orange juice
coke
pineapple juice

What is displayed on the screen after executing the following command sequence?

% cat drinks | grep juice | grep o

a) water
tea
coffee
coke

b) coffee
coke

c) orange juice

d) pineapple juice

e) orange juice
pineapple juice

20. Which of the following commands will find all occurrences of "Pik Uk" in the text file *Busline.text* with the result saved in *Result.text* ?

a) *cat Busline.text | grep "Pik Uk" > Result.text*
b) *grep "Pik Uk" Busline.text | Result.text*
c) *cat Busline.text | Result.text | grep ’Pik Uk’*
d) *grep Busline.text ’Pik Uk’ > Result.text*
e) *grep ’Pik_Uk’ Busline.text > Result.text*

21. You are asked to combine the contents of three files (*f1, f2 ,f3*), sort them in alphabetical order by the first word on each line, and display the results on the screen while at the same time save the results in a file called *f4*. Which of the following pipelines exactly completes the task?

a) *mv f1 f2 f3 | sort | tee f4*
b) *cp f1 f2 f3 |sort -n |tee f4*
c) *cat f1 f2 f3 | sort | cat f4*
d) *cat f1 f2 f3 |sort | tee f4*
e) *cat f1 f2 f3 | sort -n | echo >f4*

22. When we issue the command

% sort it >it2

where is stdin from, and stdout and stderr sent?

a) stdin from the terminal, stdout to *it2*, stderr to the terminal
b) stdin from *it*, stdout to the terminal, stderr to the terminal
c) stdin from *it*, stdout to *it2*, stderr to *it2*
d) stdin from *it*, stdout to the terminal, stderr to *it2*
e) none of the above

23. Which of the following commands executed in Bourne shell will display

"which way did he go?"

on the screen (the output includes double quotes)?

1) *echo "which way did he go?"*
2) *echo ""which way did he go?""*
3) *echo '"which way did he go?"'*
4) *echo \"which way did he go"?"\"*

a) all of the above
b) 2 and 4 only
c) 4 only
d) 3 and 4 only
e) 2, 3, and 4

24. There are two directories *dir1* and *dir2* in your home directory. Their permissions are: *dir1*: d-wx------ ; *dir2*: dr-x------. There is a file *f1* in *dir1* with permission: ---------- , and there is a file *f2* in *dir2* with permission: -rw------- . Which of the following statements is true?

1. You can do *ls ~/dir2*
2. You cannot do *rm ~/dir2/f2*
3. You cannot do *cp ~/dir2/f2 ~/dir1/f3*
4. You can do *cat ~/dir1/f1*
5. You can do *cp ~/dir1/f1 ~/dir2/f2*
6. You cannot do *cp ~/dir2/f2 ~/dir1/f1*

Use a "+" if you think the statement is true, otherwise, "-". Which of the following is the right answer to these statements?

a) - + + - + +   b) + - + - + +   c) + + - - - +   d) + - - + - +   e) + - - + + +

25. The following commands are executed:

% pwd
/staff/gankw
% mkdir data
% cd data
% mkdir sub1 sub2
% echo "Unix Power Tools" > sub1/book
% ln -s sub1/book sub2
% cat sub2/book

What is the output of the last command?

a) No such file or directory.
b) Unix Power Tools
c) "Unix Power Tools"
d) The command *ln -s sub1/book* should be: *ln -s sub1/book sub2/book*
e) The command *mkdir sub1 sub2* should be: *mkdir sub1; sub2*

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26. What color is your answer book?

a) pink   b) aqua blue   c) pale yellow   d) white   e) orange