

REVIEW TEST for ULI101

QUESTIONS

PART A	MULTIPLE CHOICE	16 MARKS
PART B	MATCHING	10 MARKS
PART C	UNIX COMMANDS	20 MARKS
PART D	SHORT ANSWERS and VI	12 MARKS
PART E	FILE MANAGEMENT	18 MARKS
PART F	SCRIPTING	12 MARKS
PART G	XHTML	12 MARKS
TOTAL MARKS		100 MARKS

PROFESSOR (S):

SPECIAL INSTRUCTIONS:

1. AIDS: ONE 8 ½ x 11 INCH REFERENCE SHEET
(HAND-WRITTEN,BOTH SIDES)
2. ANSWER ALL QUESTIONS ON THE EXAM PAPER.

NOTE:

The real exam has 6 parts (very similar to this Review) and it is of similar length and a difficulty level. It goes for 90 marks.

Sample Answers

Please email me if you have any questions about the suggested answers.

PART A – MULTIPLE CHOICE

16 MARKS

Choose by **circling** the best answer for each question (circle only 1 answer).
One point will be awarded for each correct answer.

1. To search for short descriptions and manual names for the Unix command containing the keyword “*chat*”, you issue the Unix command:
 - a) `man chat`
 - b) **`man -k chat`**
 - c) `man -s chat`
 - d) `man -f chat`
2. Which of the following are features of the Unix OS?
 - a) Allow more than one person to communicate with the computer.
 - b) Allow users to share or restrict access to their files.
 - c) Allow a routine series of Unix commands to be run automatically as shell scripts.
 - d) **All of the above are features of the Unix OS.**
3. Assuming that the user is currently in their home directory, which of the following Unix commands will copy the entire contents of the user’s home directory (including subdirectory contents) to a directory called `~/backup`?
 - a) `copy ~ ~/backup`
 - b) **`cp -r ~ ~/backup`**
 - c) `cp . ~backup`
 - d) Both a and b
4. Which of the following Unix commands will change permissions for all files contained in the directory pathname `~/unx122/samples` to allow full permissions for the user, read and execute permissions for group and others?
 - a) `chmod 711 ~/unx122/samples`
 - b) `chmod 755 ~/unx122/samples`
 - c) **`chmod 755 ~/unx122/samples/*`**
 - d) `chmod 766 ~/unx122/samples`
5. Which of the following Unix commands will display lines 3 to 7 of a 10 line file called *fun* that is contained in your current directory?
 - a) `head -7 fun | tail -5`
 - b) `tail -8 fun | head -5`
 - c) **both a and b**
 - d) `cat fun | head -5`

6. A command that could be used to determine if a filename is a directory is:

- a) type
- b) **file**
- c) dir
- d) grep

7. When displaying the contents of a text file (while being in “vi” editor), one screen at a time, to find the word "pipe" enter:

- a) find pipe
- b) **/pipe**
- c) grep pipe
- d) next pipe

8. What will happen if the following Unix command is issued:

```
sort yourfile | tail -25 > abc
```

- a) **The last 25 lines (sorted in alphabetical order) will be stored in file *abc* overwriting the previous file content.**
- b) The last 25 lines (sorted in alphabetical order) will be appended to file *abc*.
- c) Lines 25 to the bottom of the file will be stored in file *abc*.
- d) Lines 25 to the bottom of the file will be stored in file *abc*, overwriting the old file content

9. The octal number 7325 represents _____ as a binary number.

- a) **111011010101**
- b) 111001010100
- c) 111111010110
- d) 111000110111

10. Assume that the following Unix commands have just been issued:

```
$ touch myfile  
$ chmod 640 myfile
```

What are the permissions for the file myfile that was just created?

- a) r - x r - x - - -
- b) r - - r - - - - -
- c) r w x r - x - - -
- d) **r w - r - - - - -**

11. Assuming that you are in the “vi” editor in command mode, which of the following commands will abort the current editing session?
- a) Q
 - b) :w
 - c) ZZ
 - d) **:q!**
12. Which of the following Unix commands will display all lines in the file called *report* that begin with 3 numbers?
- a) `grep “[0-9][0-9][0-9]” report`
 - b) `grep “[1-9][1-9][1-9]$” report`
 - c) **`grep “[0-9][0-9][0-9]” report`**
 - d) `grep “^[^a-zA-Z][^a-zA-Z][^a-zA-Z]” report`
13. Which of the following operations use bit-wise operations?
- a) Changing directory and file permissions.
 - b) Setting up the user mask.
 - c) Performing mathematical calculations.
 - d) **All of the above.**
14. A shell script can perform the following task(s):
- a) Is used to automatically run routine Unix commands.
 - b) Can be used to configure a user’s environment upon login.
 - c) Is a file that contains Unix commands to achieve a task.
 - d) **All of the above are tasks performed by a shell script.**
15. Which of the following environment variables contains your primary Unix prompt:
- a) HOME
 - b) PWD
 - c) PROMPT
 - d) **PS1**
16. Which of the following environment variables contains your login shell:
- a) LOGIN
 - b) **SHELL**
 - c) BASH
 - d) ENV

PART B – MATCHING**10 MARKS**

For each of descriptions on the Left WRITE THE LETTER from the Right corresponding to the correct term. Put this letter on the Far Left for each of the terms.

- | | |
|--|---------|
| 1. Symbol for the Parent Directory | A) PS2 |
| D) .. | B) / |
| 2. Standard Input symbol | C) \ |
| G) < | D) .. |
| 3. Matches exactly ONE character in the filename generation | E) > |
| K) ? | F) 2> |
| 4. Secondary Unix Prompt (Environment variable) | G) < |
| A) PS2 | H) ENV |
| 5. Beginning of the conditional segment (Shell Scripting) | I) |
| O) if | J) * |
| 6. Escape character for Regular Expressions | K) ? |
| C) \ | L) -ne |
| 7. Leaving the “ftp” prompt | M) exit |
| M) exit | N) 0 |
| 8. End of the line symbol (Regular Expressions) | O) if |
| R) \$ | P) fi |
| 9. Not equal to (Shell Scripting – Strings matching) | Q) \$? |
| T) != | R) \$ |
| 10. Redirect to Standard Error symbol | S) bye |
| F) 2> (actually should be “Redirect Standard Error Symbol”) | T) != |

PART C – UNIX COMMANDS**20 MARKS**

Use the information displayed below to answer questions 1 to 4:

\$ **cat cars**

```
chevy novass    79 60
ford  mustang  65 45
volvo gl        78 102
ford  ltd       83 15
chevy nova     80 50
honda accord   81 30
ford  thundbd   84 10
chevy impala   62 85
ford  bronco    87 25
```

Show the exact output (what is displayed) by each of the following Unix commands. Assume the file *cars* is located in your current directory.

1. `tail +6 cars` (2 marks)

```
honda accord    81 30
ford  thundbd   84 10
chevy impala    62 85
ford  bronco    87 25
```

+6 --> start at line 6 and all the way to the end

2. `grep "[^]* [^]* [6-8][14]" cars` (3 marks)

```
honda accord    81 30
ford  thundbd   84 10
```

3. `grep chevy cars | sort -n -k4` (2 marks)

```
chevy nova      80 50
chevy novass    79 60
chevy impala    62 85
```

4. `sort -nk3 cars | grep "[^0]$"` (3 marks)

```
chevy impala    62 85
ford  mustang   65 45
volvo gl        78 102
ford  ltd       83 15
ford  bronco    87 25
```

PART C – UNIX COMMANDS

20 MARKS

For questions 5 to 8, each question must be answered with a single Unix command, without making use of the command separator character ; (semicolon). You can assume that all files are contained in your current directory (unless specified).

5. Write a single Unix command to save the current date and time into a file called *current_date*. This file should only contain the current date and time. (2 marks)

```
date > current_date
```

6. Write a single Unix pipeline command to store a sorted list of lines that do contain name Jones (any case) in a file called *phone_numbers.txt* at the back of the file “PHONES” (3 marks)

```
grep -i "jones" phone_numbers.txt | sort >> PHONES
```

7. Write a single Unix pipeline command to display the total number of lines in a file “mine.txt” beginning with a number, but not ending with the odd number. (3 marks)

```
grep '^[0-9].*[^13579]$(' mine.txt | wc -l
```

8. Write a single Unix pipeline command to display only lines 7 to 14 for a file called “input” contained in your parent directory (2 marks)

```
head -14 ../input | tail -8
```

PART D – SHORT ANSWERS**12 MARKS**

1. Complete the following conversion table (show your work). (4 marks)

Octal	Hexadecimal	Binary
257	AF	1010111
1655	3AD	1110101101

2. Explain step by step in terms of **stdin** and **stdout** what the following Unix command does: (3 marks)

```
ls -l ../BigDir | grep "^d" >> BigDirList 2> MyLog
```

- i) send the stdout of “ls -l ../BigDir” to the pipeline
- ii) the grep “^d” command get its stdin from the pipeline
- iii) redirect the stdout of the grep “^d” command and append it to the file BigDirList

For next question you will assume that you are in the “vi” editor in the command mode and you need to indicate exactly what needs to be typed and any capital letter must be underlined.
(5 marks)

3. a) Delete lines 24, 25 and 26 in the file.
24G3dd **go to line 24 (24G) and delete 3 lines (3dd) from the current cursor position**
- b) Move up 5 lines and paste the content of the buffer above that line.
5kP
- c) Copy (yank) 4 space delimited words into the buffer.
4ye
- d) Paste the content of the buffer after the last character of the current line
\$p
- e) Add text to the beginning of the current line
I

PART E – FILE MANAGEMENT

18 MARKS

All answers are based on the following tree diagram displayed below. You can assume that your Matrix username is called *skywalker* and you will be currently located in the directory called */home/skywalker* for each of the following questions. Assume all questions are independent of one another. *skywalker* and *obiwan* belong to different groups.

```
/home
|- skywalker
|   |-- jedi_manual.txt
|   |-- rebel.TXT
|   |-- create_force1.TXT
|   |-- create_force2.c
|   |-- HOMEWORK1
|   |-- HOMEWORK2
|   |-- POD_RACER
|       |-- op_manual.txt
|       |-- schedule
|           |-- june.txt
|           |-- august.txt
|- obiwan
|   |-- create_force1.TXT
|   |-- light_saber.txt
|   |-- pointers.c
|   |-- TRAINING
|       |-- jedi_mind_trick.txt
```

Additional Information:

Directories are: **home**, **skywalker**, **HOMEWORK1**, **HOMEWORK2**, **POD_RACER**, **schedule**, **obiwan**, and **TRAINING**.

1. Write a single Unix command to add the following directory path starting from the **POD_RACER** directory. (2 marks)

```
POD_RACER
|-- MANUALS
|-- PARTS
|-- FUSION
```

mkdir -p POD_RACER/MANUALS POD_RACER/PARTS/FUSION

2. Write a single Unix command to allow the user *obiwan* to at least read the files in your *schedule* directory. You can assume you have pass-through permissions in your *home* and *POD_RACER* directories. (2 marks)

chmod -R o+r POD_RACER/schedule

3. Write a single Unix command to copy all text files (i.e. files that end with an uppercase or lowercase *.txt*) in *obiwan*'s home directory to your home directory. Make certain that you do not accidentally overwrite any of your files. (2 marks)

cp -i ~obiwan/*.txt ~obiwan/*.TXT ~/

4. Write a single Unix command to remove all files and directories in your *POD_RACER* directory. Make certain to have the system prompt you prior to removing files or directories. (2 marks)

```
rm -ir POD_RACER
```

5. Write a single Unix command to create a file in your home directory called *pointers_obiwan.c* that is a link to the file called *pointers.c* in obiwan's home directory. (2 marks)

```
ln ~obiwan/pointers.c ~/pointers_obiwan.c
```

6. Write a single Unix command to change the file called *june.txt* to *july.txt*. (1 mark)

```
mv ~/POD_RACER/schedule/june.txt ~/POD_RACER/schedule/july.txt
```

7. Write a Unix pipeline command to display only directory filenames in your current directory. (2 marks)

```
ls -l | grep "^d"
```

8. Write a single Unix command to list only directories contained in your home directory that end with two letters (either uppercase or lowercase – 3 marks).

```
ls -l | grep "^d" | grep '[ ]\.[A-Za-z][A-Za-z]$'
```

9. Without knowing your current directory move both text files from "schedule" directory to your "home" directory. (2 marks)

```
mv ~/POD_RACER/schedule/*.txt ~/
```

10. Without knowing your current directory save a list of all files and directories (trailed with /) of the directory "POD_RACER" at the end of the file "rebel.TXT". (2 marks)

```
ls -F ~/POD_RACER >> ~/rebel.TXT
```

PART F – SCRIPTING 12 MARKS

1. Write a Bash shell script named **phone.bsh** that prompts the user to enter first or last or any portion of person's name, so that can be found the appropriate entry in the phone directory file called "phones" which may be found in the "~unx122/examples" directory. If the user tries to enter name as the argument on the command line, he/she will get a warning message "You need to provide name when prompted by this script!". If the person's entry does NOT exist in the file "phones" then it will be displayed the following message "**Name** NOT found in the phone directory file!" (where **Name** is the user's input).

Sample Run #1:

Tue Dec 06:Rev\$ **phone.bsh** Saul

You need to provide name when prompted by this script!

Sample Run #2:

Tue Dec 06:Rev\$ **phone.bsh**

Enter a name to search for:

Saul

BERMAN SAUL NH 2533 BUSINESS STUDIES DIVISION 3380A

Tue Dec 06:Rev\$

Sample Run #3:

Tue Dec 06:Rev\$ **phone.bsh**

Enter a name to search for:

Tyler

Tyler not found in the phone directory file!

Tue Dec 06:Rev\$

Write the code for phone.bsh below (use the back of the previous page if necessary):

(6 marks)

2. Consider the following bash shell script called "match.sh":

Tue Dec 06:Rev\$ **cat match.sh**

```
#!/bin/bash
```

```
echo -n "Enter Word One: "
```

```
read word1
```

```
echo -n "Enter Word Two: "
```

```
read word2
```

```
if [ "$word1" = "$word2" ]
```

```
then
```

```
    echo "Match"
```

```
else
```

```
    echo "No match"
```

```
fi
```

```
if [ $? -eq 0 ]
```

```
then
```

```
    echo "That's all folks!"
```

```
fi
```

a) Write down the command to give yourself and your group members permission to execute the above script.

(1 mark)

```
chmod ug+x match.sh
```

b) Write the output when the script is executed and user provided as respective inputs “apple” and “APPLE”

(3 marks)

```
Enter Word One: apple
Enter Word Two: APPLE
No match
That's all forks!
```

Question #1 Solution:

```
Tue Dec 06:Rev$ cat phone.bsh
dsp=echo
if [ "$#" -ne 0 ]
then
    $dsp "You need to provide name when prompted by this script!"
    exit 1
fi
$dsp "Enter a name to search for: "
read name
grep -i $name ~unx122/examples/phones
if [ $? -ne 0 ]
then $dsp "$name not found in the phone directory file!"
fi
```

PART G – XHTML 12 MARKS

Here is some XHTML code:

```
<?xml version='1.0' encoding='UTF-8'?>
<!DOCTYPE html PUBLIC "-//W3C//DTD XHTML 1.0 Transitional//EN"
'DTD/xhtml11-transitional.dtd'>
<html>
  <head>
    <title>Exams</title>
  </head>
  <body>
    <h1>Exams</h1>
    <h2>Fall 2005</h2>
    <table border="2">
      <tr>
        <td colspan="7">
          Exams
        </td>
      </tr>
      <tr>
        <th rowspan="2">Sunday</th>
        <th>Monday</th>
        <th>Tuesday</th>
        <th>Wednesday</th>
        <th>Thursday</th>
        <th>Friday</th>
        <th rowspan="2">Saturday</th>
      </tr>
      <tr>
        <td>ULI101<br />
        IPC144</td>
        <td>ELS</td>
        <td>IOS110</td>
        <td>HWD101</td>
        <td>OFF</td>
      </tr>
    </table>
  </body>
</html>
```

Draw what this will look like when it is displayed in a browser:

