

Surname, Name:

Section:

Student No:

**Closed Book, closed note exam. You are required to write down commands with necessary arguments and options; and make sure that they work. Your script and output should match. Give the best result that you can give!**

**Each question worths 4 points unless otherwise stated.**

**Over 100 points is bonus.**

**Unless otherwise stated for question k, your answers as command must be in k.sh and output should in k.txt both should be in Answers directory.**

SIGNATURE .....

Time of Submission:

**Prelude:** Before solving questions you should:

- let NAME be your FirstLast name as ascii (MAkgul, ASOzgur, LMessi, LionelMessi) (do not use Turkish Characters, ı ğ ş ç ü ö )
- create NAME and NAME/Answers directories `mkdir -p ~/NAME/Answers`
- script NAME/Answers/NAME.Log
- touch NAME/Answers/Your-Full-Name
- download the questions file and unzip it in NAME Directory, ( maintaining directory structure), unzip file-path  
`cd ~/NAME` or simply `cd NAME`  
use one of the commands  
`wget http://liste.ctis.bilkent.edu.tr/courses/166/LabM2.zip`  
`wget http://lab7t/download/LabM2.zip`

unzip LabM2

- `mkdir -p ~/NAME/Answers/Dir{1,2,3,4,5,6,7,8,9}`
- `export PATH=.:$PATH`
- **Your working directory will be LabQ, files that you operate on will be in LabQ. Your answers will be written under NAME; shell scripts and solution files under NAME/Answers; you need to redirect selected output to NAME/Answers directory. Also commands that you use should ve saved/copied under Answers. You can collect commands under cevaplar.sh provided you include question numbers**

**For some questions, you may work directly in Name/Answers. Please indicate that in cevaplar.sh.**

**Remember final versions of all \*.sh Awk, Sed and \*.SH files will be in NAME/Answers.**

**Your scripts should work.**

- **When you finish** (that is when exam ends), you will zip NAME directory with command  
`cd ; zip -ry NAME NAME`
- upload NAME.zip

1. copy everything in LabQ into Dir1 with cp . Keep owner and date info. term LabQ will not be copied but everything inside it (recursively). Use relative addressing
2. copy everything in the current directory into Dir2 using tar without using any explicit tar file
3. copy everything in the current directory into Dir3 using tar via creating tar file LabQ.tar
4. copy everything in the current directory into Dir4 using rsync
5. copy everything in the current directory into Dir5 using a cpio file
6. copy all \*.txt and \*JPEG files in LabQ (on the surface and within directories) into Dir6 using cpio
7. combine all \*.txt files within LabQ hierarchy which are more than 5k and less than 20k in size into file ALL.TXT in Answers
8. Consider all files in the current directory: including sub directories
  - determine all lines among all files which contains words ayse or elif, case insensitive
9. Consider all \*.txt files in LabQ (on the surface) determine files which contains words **elif** or **ayse** case insensitive on a line, (under 9.txt) and combine them (under 9.TXT)
10. find all \*.txt files and \*.SH within LabQ hierarchy and put these files in TXT1.zip
11. find all \*.txt files within LabQ hierarchy and put these files in TXT1.cpio
12. extract contents of AB.tar.gz into Dir7 so that after the operation AB.tar.gz remains intact .
13. find lines in Dene3.txt.bz2 containing words elif and ayse case insensitive without using bunzip2 and bzcata
14. Combine Dene.txt.Z Dene2.txt.gz and Dene3.txt.bz2 into DENE.txt so that after the operation original files remains intact. (n other words you can not use gunzip and gzip, or something similarly]
15. give permissions of **yap.SH** as suid to owner ; owner has read, write, execute; and read execute to group and others have write and execute rights. Use octal method
16. add read permissions for file **exec.SH** to all , add write and sticky bit to others, add to write and suid property to group; and execute to owner; all in a single statement, and use symbolic method
17. set following permissions for **x.SH** using symbolic method: user read, write and execute, group read and execute and suid; and for others execute and write and sticky bit.
18. Given a.txt, we want to determine the lines containing words Net and Fox case sensitive and put them in files 18-1.txt, 18-2.txt and 18-3.txt . How would you do it using:(each 2)

**grep:**

**sed:**

**awk:**

19. given a.txt, we want to determine the lines containing **only** one of strings Net and Fox and put them in files 19-1.txt, 19-2.txt and 19-3.txt How would you do it using:(each 2)

**grep:**

**sed:**

**awk:**

20. Given A.txt we want to: (each **2** points )
- Delete all strings Net and Fox (**using Sed** )  
Give command and write new file as Answers/B1.txt
  
  - On lines containing Internet, replace Fox with Firefox  
Give command and write file as Answers/B2.txt (**using vi/vim**)
  
  - Do the above using sed, and write into B3 - On lines 1 to line containing ElifNet insert "BASLA " at the beginning,  
Give commands and write file as Answers/B4.txt
  
  - On line starting with "minternet" to line with BitNeT add to the end of each line word " BITTI" Give commands and write file as Answers/B5.txt
21. given satis.txt, compute total number of units sold for each fruit using Awk. Hint: use associative arrays. Print amounts for apple and orange.
22. we want to run /usr/bin/temizlik.sh every Sunday and Thursday 2:25 in January, March, May and August. How would you do it ?
23. we want run long-jobs.sh at 2:00 three days later . How would you do it ?
24. How would you determine all httpd processes and kill it ?
25. stat.c is a simple program to compute mean and variance. stat is a compiled program from stat.c. a sample input is given as input.txt. Write a simple shell script when executed, will run program stat with input input.txt and will write its output in output.txt , and possible errors to error.txt. Please run the resulting shell script and output.txt and error.txt should be in Answers as well as shell script
26. Determine list of public rsync archives(modules) at 139.179.33.200 and copy files in these modules into Answers
27. In 139.179.33.200 there is user named **ctis** and passwd ctis1548. create an empty file with your Name.LastName (ascii only) and copy using rsync into /home/ctis
28. In the above machine there is an unlisted module **deney** ) with user ctisx is authorized to upload into it. user ctisx has the password ctisx. Upload Name.LastName into module deney using rsync.

29. Write bash script which will print:
- "Welcome"
  - Name of script
  - Number of arguments
  - Each argument on a line by itself
  - "Goodbye"
30. Write a bash script which will sum its arguments (assuming all integers) and
- print argument vector at the beginning
  - at the end print "Sum of x terms is equal to y" where x is the number of arguments and y is total
  - use while and shift
31. Given grade.txt, determine number of A, F, and number of passing students. use Bash script with case construct.
32. Write a bash script which will take an arbitrary number of arguments; for each arguments, bash script will do the following:
- check whether arguments exists as an object of current system, if it is not give an error message and continue (exit with value 1)
  - if its an ordinary file, print its size and exits
  - if its a directory print its disk usage and exit
  - Otherwise, print a message like "object x exists but it is not an ordinary file or directory" and exit . **8 pts**
33. You are given uyu-1.sh uyu-2.sh uyu-3.sh and uyu-4.sh executable shell scripts. **6 points**
- Run uyu-1.sh, uyu2-sh, uyu-3.sh and uyu-4.sh in the background successively, give the result of "jobs" in 33-1.txt in Answers.
  - put uyu-2.sh in foreground, and stop it, give results of "jobs" in33-2.txt in Answers
  - kill uyu-1.sh using % notation, and put uyu-2.sh (uyu-3.sh) into background and kill it, and give resulting "jobs" result in 33-3.txt