PRINT Name: _____ **LAB Section:** ☐☐☐

Test Version: ____   **One-Answer Multiple Choice**   **50 Questions – 15 of 15%**

☞ Read **all** the words of these instructions and **both** sides (back and front) of all pages.
☞ Use your full, unabbreviated name on the mark-sense form. Do not abbreviate your name.
☞ Put the three-digit **Test Version** above into **NO. OF QUESTIONS** and **NO. OF STUDENTS**
☞ Fill in the bubbles with pencil only, no pen. Enter your NAME, Test Version, and answers.
☞ Manage your time. Answer questions you know, first. One Answer per question.

1. *[15/59]* Which line below puts only the count of the number of lines in the password file into the variable **count**?
   a. **count=$(awk -F: /etc/passwd | wc -l)**
   b. **count=$(cat -c /etc/passwd)**
   c. **count=$(wc -l /etc/passwd)**
   d. **count=$(wc -l /etc/passwd | awk '{print $1}')**
   e. **count=$(wc /etc/passwd | awk echo $1)**

2. *[16/59]* What is the correct syntax to mount an MS DOS formatted floppy disk (do not assume that there is an entry in **/etc/fstab**)?
   a. **mount -t vfat /dev/fd0 /mnt/floppy**
   b. **mount /dev/floppy /mnt/fd0**
   c. **mount -t vfat /mnt/floppy /dev/fd0**
   d. **mount -t iso9660 /dev/fd0 /mnt/floppy**
   e. **mount -t msdos /dev/floppy /mnt/floppy**

3. *[18/59]* What is the output (if any) of this **bash** shell program fragment? (There are blanks between all the letters in the word list section of the **for** loop.)
   ```
   s=0
   for i in 1 2 3 4 5 6 7 8 9
   do
       s=$((s+i))
   done
   echo "$s"
   ```
   a. **1**   b. **45**
   c. **123456789**   d. **1 2 3 4 5 6 7 8 9**
   e. **987654321**

4. *[18/59]* Which of the following invocations of **command.sh** is dependent on a correct current directory to work properly?
   a. **command.sh**   b. **/root/bin/command.sh**
   c. **/bin/command.sh**   d. **usr/bin/command.sh**
   e. **/usr/bin/command.sh**

5. *[20/59]* To set up SSH key login in Linux, what is the command to copy the public key to the server?
   a. **ssh-add**   b. **ssh**   c. **ssh-agent**
   d. **ssh-copy-id**   e. **ssh-keygen**

6. *[26/59]* If a shell script **myscript.sh** is called this way:
   ./shifttest.sh a b c d
   and the first line inside the script below the script header is
   shift 2; echo "$#$1"
   what is the output of that line?
   a. **4c**   b. **3b**   c. **2c**   d. **2a**   e. **2b**

7. *[28/58]* If **archive.tar.gz** is a compressed tar archive, which command could you run to produce a listing of its contents without extracting it?
   a. **tar -tgz archive**   b. **tar -tzf archive**
   c. **tar -tzf archive.tar.gz**   d. **tar -tgz archive.tar.gz**
   e. **tar -xzf archive.tar.gz**

8. *[29/59]* Which arguments to **mount -o bind** would create a file system loop that would cause problems for recursive commands such as **find,** du or **rm**-rf
   a. **/home/user/private /public**
   b. **/var1 /var**
   c. **/home /home/wjiang/dir**
   d. **/var/home /home**
   e. **/home /var/home**

9. *[30/59]* In the **/etc/sudoers** file, what word goes in front of **ALL=(ALL) ALL** to allow the user **wjiang** to run commands as **root**?
   a. **%wjiang**   b. **wheel**   c. **wjiang**
   d. **sudoers**   e. **#wjiang**

10. *[31/59]* What is the correct syntax to redirect both standard output and standard error into the same output file?
    a. **ls -l >bar 2>&1**   b. **ls -l 2>$1 >bar**
    c. **ls -l 2>&1 >bar**   d. **ls -l >bar 2>bar**
    e. **ls -l >bar 2>$1**

11. *[32/59]* What command line modifies and moves (in one command line) the home directory **foo** to **bar** for the existing user **wjiang**?
    a. **usermod -m -d /home/foo /home/bar**
    b. **usermod -d -m /home/bar wjiang**
    c. **usermod -m -d /home/bar wjiang**
    d. **usermod -d -m /home/wjiang bar**
    e. **usermod -dm /home/bar wjiang**

12. *[32/59]* Which line below is most likely to be the beginning of an error message?
    a. **echo 1<&2 "... "**   b. **echo 2>&1 "... "**
    c. **echo 2>$1 "... "**   d. **echo 1>&2 "... "**
    e. **echo 2<$1 "... "**

13. *[33/59]* If you have a file **crontab.day** of commands in **crontab** format, you could submit that file to be your live **crontab** file by running which of the following commands?
    a. **crontab -l crontab.day**
    b. **crontab > crontab.day**
    c. **crontab < crontab.day**
    d. **crontab -e crontab.day**
    e. **echo crontab.day | crond**

14. *[33/59]* Which of the following commands could be used to disable password authentication for the user, **wjiang**?
    a. **passwd -l wjiang**   b. **passwd_disable wjiang**
    c. **passwd -d wjiang**   d. **passwd -x wjiang**
    e. **gpasswd wjiang**

15. *[34/59]* If **string=centOS** then which one of the following **case** patterns will match this statement: **case "$string" in**
    a. **???tOS) echo yes ;;**
    b. **?centO?) echo yes ;;**
    c. **@) echo yes ;;**
    d. **(*OS echo yes ;;**
    e. **[cent] | [CENT]) echo yes ;;**

16. *[34/59]* If **bar** is a directory that contains only the file **foo** and **/dir1** is an empty directory, what is in **/dir1** after running the following command?
    rsync -avH bar/. /dir1
    a. **foo**   b. a symlink to foo   c. nothing
    d. **dir1**   e. **bar**

17. *[35/59]* Of the following directories, which would you expect to contain the most system administration commands that require **root** privileges?
    a. **/sys/admin/bin**   b. **/sbin**
    c. **/usr/bin**   d. **/usr/local/bin**
    e. **/bin**

18. *[35/59]* To resume a stopped process in the background using Job Control, where *N* is the job number of the process and *PID* is its process ID, you would type
    a. **bg** %*PID*   b. **fg** *N*   c. **fg** *PID*
    d. **fg** %*PID*   e. **bg** %*N*

19. *[36/59]* Which of the following commands would you use configure the **httpd** daemon to run in runlevels **2**,**3**,**4**, and **5**?
    a. **httpd --levels 2345 on**   b. **httpd run 2345**
    c. **runlevel httpd on**   d. **service httpd on**
    e. **chkconfig httpd on**

20. *[39/59]* Which of the following could you use as options for the **tar** command to extract a gzip-compressed archive?
    a. **-tgz**   b. **-czf**   c. **-ezvf**   d. **-egvf**   e. **-xzvf**

21. *[39/59]* Which of the following is a proper way to change the **/etc/sudoers** file?
    a. **vi /etc/sudoers**   b. **vim /etc/sudoers**
    c. **echo > /etc/sudoers**   d. **visudo**
    e. **nano /etc/sudoers**

22. *[40/59]* What would the following command do: **at 7pm**
    a. issue an error message
    b. read commands from stdin to be run every day at 7pm
    c. run the user´s **crontab** jobs at 7pm
    d. read commands from stdin to be run once at 7pm
    e. run the user´s **crontab** jobs every day at 7pm

23. *[41/59]* Which **fdisk** internal command letter displays the list of all partitions?
    a. **q**   b. **p**   c. **L**   d. **f**   e. **l**

24. *[42/59]* What command will show the amount of free disk space in a partition?
    a. **find**   b. **ls**   c. **df**   d. **fdisk**   e. **mount**

25. *[42/59]* What command would you use to list your **at** job numbers?
    a. **at -c**   b. **at -q**   c. **at -m**   d. **at -v**   e. **atq**

26. *[42/59]* Which of the following commands would be used to add the user **wjiang** to the group **wheel**?
    a. **usrgrp wjiang wheel**
    b. **useradd wjiang wheel**
    c. **gpasswd -a wjiang wheel**
    d. **groupadd -a wheel wjiang**
    e. **groupmod -a wjiang wheel**

27. *[42/59]* Which of the following commands would you use to resize an **ext4** file system to consume the remaining free space on its volume?
    a. **mkfs**   b. **fsck.ext4**   c. **resize2fs**
    d. **mkfs.ext4**   e. **fsck**

28. *[42/59]* What is the correct output of the following command? **printf "hello %s, your number is %d" wenjuan 33**
    a. **hello %s, your number is %d wenjuan 33**
    b. Issue a syntax error information
    c. **hello, your number is**
    d. **hello %wenjuan, your number is %33**
    e. **hello wenjuan, your number is 33**

29. *[43/59]* In an argument to **rsync** or **scp** a colon would come immediately after a
    a. local host   b. remote file   c. absolute pathname
    d. local file   e. remote host

30. *[44/59]* Fill in the blanks. The **chroot** program takes a(n) _____ which will be the _____ for a shell or a command.
   - *a.* directory, argument
   - *b.* option, input
   - *c.* input, option
   - *d.* argument, ROOT directory
   - *e.* command, argument

31. *[44/59]* To see a list of disk partitions that the kernel has detected, you could look at the contents of which file?
   - *a.* **/lib/partitions**
   - *b.* **/dev/partitions**
   - *c.* **/etc/partitions**
   - *d.* **/proc/partitions**
   - *e.* **/dev/sda**

32. *[45/59]* If you want a directory **www** to be added automatically to the HOME directory of every newly created account, where would you put the **www** directory so that useradd would make this happen?
   - *a.* **/etc/default**
   - *b.* **/etc/skel**
   - *c.* **/etc/profile**
   - *d.* **/etc/sysconfig/default**
   - *e.* **/etc/login.defs**

33. *[45/59]* What would be the output of the following command line:
   ```
   echo a b c | awk '{print $NF}'
   ```
   - *a.* **a b c**
   - *b.* no output
   - *c.* **NF**
   - *d.* **3**
   - *e.* **c**

34. *[45/59]* Which of the following options for **bash** or **sh** might useful for debugging a shell script?
   - *a.* **-c**
   - *b.* **-x**
   - *c.* **-z**
   - *d.* **-r**
   - *e.* **-l**

35. *[46/59]* Assuming you are not currently **root** and are a **sudoer**, which of the following commands could you use to simulate a full login as **wjiang** without knowning their password?
   - *a.* **sudo - wjiang**
   - *b.* **sudo wjiang**
   - *c.* **su - wjiang**
   - *d.* **su sudo wjiang**
   - *e.* **sudo su - wjiang**

36. *[46/59]* Which command line adjusts the CPU priority of the **tar** command?
   - *a.* **tar -10**
   - *b.* **bg**
   - *c.* **fg**
   - *d.* **tar -n**
   - *e.* **nice tar**

37. *[46/59]* Which of the following commands could be used to force the user **wjiang** to change their password the next time they log in?
   - *a.* **chage -d 0 wjiang**
   - *b.* **passwd -d 0 wjiang**
   - *c.* **passwd wjiang**
   - *d.* **gpasswd wjiang**
   - *e.* **force -d 0 wjiang**

38. *[47/59]* Fill in the blanks. To perform critical filesystem operations, you should use at least the safety of _____ mode, but even safer would be _____ .
   - *a.* runlevel, "Live CD"
   - *b.* single-user, multi-user
   - *c.* single-user, "Live CD"
   - *d.* rescue, power-off
   - *e.* "Live CD", multi-user

39. *[47/59]* Which of the following commands could be used to bring a system into single user mode?
   - *a.* **shutdown now**
   - *b.* **shutdown -h now**
   - *c.* **telinit 0**
   - *d.* **init 0**
   - *e.* **telinit 6**

40. *[48/59]* Which of the following commands could be used to create a group named **wheel**?
   - *a.* **newgrp wheel**
   - *b.* **gpasswd -c wheel**
   - *c.* **gpasswd -a wheel**
   - *d.* **groupadd wheel**
   - *e.* **gshadow -a wheel**

41. *[48/59]* Which of the following commands on a Unix/Linux system displays the processes running on the system showing the relations of the processes?
   - *a.* **toplist**
   - *b.* **listtop**
   - *c.* **pstree**
   - *d.* **pstop**
   - *e.* **psls**

42. *[50/59]* Fill in the blanks. If you try to _____ a filesystem, and the command fails, you might use the _____ command to look for the cause.
   - *a.* **fsck, rm**
   - *b.* **mkfs, rmdir**
   - *c.* **umount, mkdir**
   - *d.* **mount, mkfs**
   - *e.* **mount, fsck**

43. *[50/59]* To send **SIGTERM** to a process with process ID **30727**, which of the following commands would you use?
   - *a.* **send 30727 SIGTERM**
   - *b.* **send -SIGTERM 30727**
   - *c.* **kill -SIGTERM 30727**
   - *d.* **signal -SIGTERM 30727**
   - *e.* **kill 30727 SIGTERM**

44. *[51/59]* A **crontab** entry of **5 6 * * * /bin/somecommand** would run **somecommand** when and how often?
   - *a.* at 6:05am every day
   - *b.* at 5:06am every business day
   - *c.* at 6:05am every business day
   - *d.* at 5:06am every day
   - *e.* at 12:05am every business day and Saturday

45. *[52/59]* The **cron** system can run commands at most every
   - *a.* millisecond
   - *b.* minute
   - *c.* second
   - *d.* hour
   - *e.* day

46. *[53/59]* Which of the following commands would you use to install the **mailx** software package (and its dependencies) on your CentOS virtual machine?
   - *a.* **install pkg mailx**
   - *b.* **yum -i mailx**
   - *c.* **pkg -i mailx**
   - *d.* **pkginst mailx**
   - *e.* **yum install mailx**

47. *[53/59]* Which of the following commands would you use to start the **httpd** daemon, if you had just installed it and if it were not already running?
    a. **httpd service on**   *b.* **go httpd**
    c. **service httpd start**   *d.* **chkconfig httpd on**
    e. **kill -SIGSTART httpd**

48. *[55/59]* Which of the following signals cannot be handled or ignored?
    a. **SIGSUSP**   *b.* **SIGHUP**   *c.* **SIGKILL**
    d. **SIGINT**   *e.* **SIGTERM**

49. *[56/59]* Which of the following commands could be used to create a new user named **wjiang**, with full name "Wenjuan Jiang" ?
    a. **passwd -c "Wenjuan Jiang" wjiang**
    b. **usermod -c "Wenjuan Jiang" wjiang**
    c. **useradd -c "Wenjuan Jiang" wjiang**
    d. **newuser -c "Wenjuan Jiang" wjiang**
    e. **newuser wjiang -c "Wenjuan Jiang"**

50. *[59/59]* A **-H** option to **rsync** would cause it to
    a. work verbosely   *b.* preserve hard links
    c. preserve timestamps   *d.* not overwrite newer files
    e. overwrite newer files

This page intentionally left blank.