Linux Operating System Quiz (100 Questions)

DevOps Learning Module

This quiz covers fundamental concepts related to the Linux operating system. Choose the best answer for each question.

1. What command is used to list the contents of a directory?

   A. `list`

   B. `dir`

   C. `ls`

   D. `show`

   Answer: C
   Explanation: `ls` (list) is the standard command for listing files and directories.

2. Which command is used to change your current working directory?

   A. `cd`

   B. `chgdir`

   C. `mvdir`

   D. `pwd`

   Answer: A
   Explanation: `cd` (change directory) is used to move into a different directory.

3. What command prints the full path of your current working directory?

   A. `path`

   B. `where`

   C. `ls -a`

   D. `pwd`

   Answer: D
   Explanation: `pwd` (print working directory) displays the absolute path of your current location.

4. Which command is used to create a new directory?

   A. `crdir`

   B. `newdir`

C. `mkdir`

D. `mkf`

Answer: C
Explanation: `mkdir` (make directory) is used to create one or more new directories.

5. Which command is used to copy a file?

   A. `cp`

   B. `copy`

   C. `mv`

   D. `clone`

   Answer: A
   Explanation: `cp` (copy) is used to copy files and directories (e.g., `cp source.txt destination.txt`).

6. Which command is used to move or rename a file?

   A. `move`

   B. `ren`

   C. `cp`

   D. `mv`

   Answer: D
   Explanation: `mv` (move) is used to either move a file to a new directory or rename it (e.g., `mv oldname.txt newname.txt`).

7. Which command is used to delete a file?

   A. `del`

   B. `rm`

   C. `erase`

   D. `unlink`

   Answer: B
   Explanation: `rm` (remove) is the standard command for deleting files.

8. How do you delete an empty directory?

   A. `rmdir`

   B. `rm -d`

   C. `deldir`

   D. `rmdir` or `rm -d`

Answer: D
Explanation: `rmdir` is the classic command. `rm -d` also works to remove empty directories.

9. How do you delete a directory and all its contents (files and subdirectories)?

   A. `rmdir -all`

   B. `rm -rf`

   C. `del -rf`

   D. `rm -d`

   Answer: B
   Explanation: `rm -rf` (recursive, force) is the command to recursively and forcefully remove a directory and its contents. It is very powerful and dangerous.

10. What command displays the contents of a text file on the screen?

    A. `type`

    B. `show`

    C. `cat`

    D. `print`

    Answer: C
    Explanation: `cat` (concatenate) is commonly used to print the entire content of one or more files to the standard output.

11. Which command displays the contents of a text file one page at a time?

    A. `more` or `less`

    B. `cat -p`

    C. `page`

    D. `view`

    Answer: A
    Explanation: `more` is the original pager. `less` is a more modern, powerful pager ("less is more") that allows backward navigation.

12. What command is used to search for a specific pattern of text inside a file?

    A. `find`

    B. `search`

    C. `grep`

    D. `locate`

    Answer: C
    Explanation: `grep` (Global Regular Expression Print) searches text (from files or input) for lines that match a given regular expression.

13. What command is used to find files on the filesystem based on criteria like name, size, or type?

    A. `find`

    B. `grep`

    C. `locate`

    D. `which`

    Answer: A
    Explanation: `find` is a powerful command that actively searches the directory tree (e.g., `find / -name "foo.txt"`).

14. What command searches a pre-built database to find files quickly?

    A. `find`

    B. `grep`

    C. `locate`

    D. `searchdb`

    Answer: C
    Explanation: `locate` uses a database (often updated by `updatedb`) to find files by name almost instantly. Its drawback is that the database may be out of date.

15. What command is used to change file permissions?

    A. `chperm`

    B. `chown`

    C. `chmod`

    D. `chgrp`

    Answer: C
    Explanation: `chmod` (change mode) is used to change the access permissions (read, write, execute) of files and directories.

16. What command is used to change the owner (user) of a file?

    A. `chuser`

    B. `chown`

    C. `chmod`

    D. `chgrp`

    Answer: B
    Explanation: `chown` (change owner) is used to change the user that owns a file.

17. What command is used to change the group owner of a file?

    A. `chgroup`

B. `chown`

C. `chmod`

D. `chgrp`

Answer: D
Explanation: `chgrp` (change group) is used to change the group that owns a file. (Note: `chown user:group` can do this too).

18. What do the file permissions `755` (octal) mean?

A. `rwx r-x r-x` (Owner: rwx, Group: r-x, Other: r-x)

B. `rwx rwx rwx` (Owner: rwx, Group: rwx, Other: rwx)

C. `rwx r-x --` (Owner: rwx, Group: r-x, Other: no access)

D. `r- r- r-` (Owner: r–, Group: r–, Other: r–)

Answer: A
Explanation: 7 = (4+2+1) = rwx. 5 = (4+0+1) = r-x. So, 755 is rwx for the owner, and r-x for the group and others. This is common for directories and executables.

19. What do the file permissions `644` (octal) mean?

A. `rw- r- r-` (Owner: rw-, Group: r–, Other: r–)

B. `rwx r- r-` (Owner: rwx, Group: r–, Other: r–)

C. `rw- rw- r-` (Owner: rw-, Group: rw-, Other: r–)

D. `r- w- x-` (Owner: r–, Group: w–, Other: x–)

Answer: A
Explanation: 6 = (4+2+0) = rw-. 4 = (4+0+0) = r–. So, 644 is rw- for the owner, and r– for the group and others. This is very common for regular files.

20. What is the `root` user?

A. The first user ever created.

B. A user who can only read the root directory.

C. The "superuser" or administrator, with full, unrestricted access to the system.

D. A user account for system services.

Answer: C
Explanation: The `root` user (UID 0) is the administrative user that bypasses all permission checks and has complete control over the system.

21. What command allows a regular user to execute a single command as the `root` user?

A. `runas`

B. `admin`

C. `su`

D. `sudo`

Answer: D
Explanation: `sudo` (superuser do) allows a permitted user to execute a command as another user (usually root) by authenticating with their *own* password.

22. What command allows you to switch your current session to be the `root` user?

    A. `su`

    B. `login root`

    C. `sudo -i`

    D. `su` or `sudo -i`

    Answer: D
    Explanation: `su` (switch user) by itself asks for the *root* password. `sudo -i` or `sudo su -` asks for *your* password and gives you a root shell.

23. Which file contains information about user accounts?

    A. `/etc/users`

    B. `/etc/shadow`

    C. `/etc/passwd`

    D. `/etc/group`

    Answer: C
    Explanation: `/etc/passwd` stores user account information, including username, UID, GID, home directory, and default shell.

24. Which file contains the encrypted (hashed) passwords for users?

    A. `/etc/passwd`

    B. `/etc/shadow`

    C. `/etc/passwords.db`

    D. `/etc/secure`

    Answer: B
    Explanation: `/etc/shadow` holds the hashed passwords and password policy information. It is only readable by the root user.

25. What command is used to view running processes on the system?

    A. `proc`

    B. `ps`

    C. `show proc`

    D. `tasks`

Answer: B
Explanation: `ps` (process status) is used to display information about the currently running processes.

26. Which command provides a real-time, interactive view of running processes?

    A. `top`

    B. `ps -realtime`

    C. `htop`

    D. `top` or `htop`

    Answer: D
    Explanation: `top` is the classic, built-in tool. `htop` is a popular, more user-friendly, and colorful third-party alternative.

27. What command is used to send a signal (like "terminate") to a running process?

    A. `stop`

    B. `kill`

    C. `signal`

    D. `terminate`

    Answer: B
    Explanation: The `kill` command is used to send a signal to a process, specified by its Process ID (PID).

28. What is the signal "9" (SIGKILL) used for with the `kill` command?

    A. To gracefully stop a process (like SIGTERM).

    B. To pause a process (like SIGSTOP).

    C. To force-kill a process that is not responding.

    D. To send a "hang up" signal.

    Answer: C
    Explanation: `kill -9 <PID>` sends the SIGKILL signal, which is a non-blockable, non-ignorable signal that tells the kernel to terminate the process immediately.

29. What is the default signal sent by the `kill` command if none is specified?

    A. SIGKILL (9)

    B. SIGTERM (15)

    C. SIGHUP (1)

    D. SIGSTOP (19)

    Answer: B
    Explanation: The default is SIGTERM (terminate), which is a graceful shutdown request. The process can "catch" this signal and shut down cleanly.

30. What command is used to display the first 10 lines of a file?

    A. `head`

    B. `first`

    C. `top`

    D. `cat -n 10`

    Answer: A
    Explanation: The `head` command, by default, prints the first 10 lines of a file.

31. What command is used to display the last 10 lines of a file?

    A. `last`

    B. `tail`

    C. `bottom`

    D. `end`

    Answer: B
    Explanation: The `tail` command, by default, prints the last 10 lines of a file.

32. How do you use `tail` to continuously watch a file for new lines (like a log file)?

    A. `tail -c`

    B. `tail -f`

    C. `tail -w`

    D. `tail -live`

    Answer: B
    Explanation: The `-f` (follow) flag tells `tail` to stay open and print new lines as they are appended to the file.

33. What is the "pipe" operator (`|`) used for in the shell?

    A. To save the output of a command to a file.

    B. To send the standard output of one command to the standard input of another command.

    C. To run two commands at the same time.

    D. To separate a command from its arguments.

    Answer: B
    Explanation: The pipe is a core concept. It lets you chain commands together, e.g., `cat /var/log/syslog | grep "ERROR"`.

34. What does the `>` (redirection) operator do?

    A. Sends standard output to a file, overwriting the file if it exists.

    B. Appends standard output to a file.

C. Takes standard input from a file.

D. Sends standard error to a file.

Answer: A
Explanation: `command > file.txt` will replace the contents of `file.txt` with the output of `command`.

35. What does the `»` (redirection) operator do?

A. Sends standard output to a file, overwriting the file if it exists.

B. Appends standard output to the end of a file.

C. Takes standard input from a file.

D. Sends standard error to a file.

Answer: B
Explanation: `command » file.txt` will add the output of `command` to the end of `file.txt` without overwriting its existing content.

36. What does the `<` (redirection) operator do?

A. Appends standard output to a file.

B. Overwrites a file with standard output.

C. Sends the contents of a file as standard input to a command.

D. Compares two files.

Answer: C
Explanation: `command < file.txt` will feed the contents of `file.txt` into the standard input of `command`.

37. What is the root directory (`/`) in Linux?

A. The home directory for the `root` user.

B. The directory where all software is installed.

C. The top-level, base directory of the entire filesystem.

D. A directory for temporary files.

Answer: C
Explanation: The root directory (`/`) is the top of the filesystem hierarchy. All other directories and filesystems are mounted under it.

38. Where is the home directory for the `root` user typically located?

A. `/home/root`

B. `/`

C. `/root`

D. `/admin`

Answer: C
Explanation: Unlike regular users who have home directories in `/home`, the `root` user's home directory is `/root`.

39. Which directory contains essential system binaries (commands) available to all users?

    A. `/bin`

    B. `/sbin`

    C. `/etc`

    D. `/usr`

    Answer: A
    Explanation: `/bin` (binaries) contains fundamental commands like `ls`, `cp`, `mv`, and `bash` that are needed for the system to function.

40. Which directory contains system binaries (commands) primarily intended for use by the `root` user?

    A. `/bin`

    B. `/sbin`

    C. `/root/bin`

    D. `/usr/bin`

    Answer: B
    Explanation: `/sbin` (system binaries) contains commands for system administration, like `ifconfig`, `fsck`, and `shutdown`.

41. Which directory contains system-wide configuration files?

    A. `/conf`

    B. `/var`

    C. `/etc`

    D. `/config`

    Answer: C
    Explanation: `/etc` (et cetera) is the standard location for all system-wide configuration files (e.g., `/etc/passwd`, `/etc/fstab`).

42. Which directory is used for variable data, such as log files?

    A. `/etc`

    B. `/log`

    C. `/var`

    D. `/tmp`

Answer: C
Explanation: `/var` (variable) is for files that are expected to grow and change, most notably log files (in `/var/log`).

43. Which directory is for temporary files that are often cleared on reboot?

    A. `/var/tmp`

    B. `/temp`

    C. `/tmp`

    D. `/etc/tmp`

    Answer: C
    Explanation: `/tmp` is the standard directory for temporary files that any user can write to. These files are not guaranteed to persist across reboots.

44. Which directory contains the home directories for regular users?

    A. `/users`

    B. `/home`

    C. `/root`

    D. `/var/users`

    Answer: B
    Explanation: By default, new users are given a home directory inside `/home`, such as `/home/alice`.

45. What command is used to display disk usage (free space) for mounted filesystems?

    A. `du`

    B. `df`

    C. `free`

    D. `diskspace`

    Answer: B
    Explanation: `df` (disk free) reports the total size, used space, and free space for each mounted filesystem.

46. What command is used to estimate file and directory space usage?

    A. `du`

    B. `df`

    C. `size`

    D. `filesize`

    Answer: A
    Explanation: `du` (disk usage) summarizes the disk space used by a file or, more commonly, a directory and its contents.

47. What command is used to display information about memory usage (RAM and swap)?

    A. `mem`

    B. `top`

    C. `free`

    D. `du`

    Answer: C
    Explanation: The `free` command provides a quick summary of total, used, free, and shared memory, as well as swap space.

48. What command is used to test network connectivity to another host?

    A. `netstat`

    B. `ping`

    C. `traceroute`

    D. `ssh`

    Answer: B
    Explanation: `ping` sends ICMP "echo request" packets to a host to see if it is reachable and how long the response takes.

49. What command is used to display network interface configuration (IP addresses, etc.)?

    A. `netstat`

    B. `ifconfig` (older) or `ip addr` (newer)

    C. `netconf`

    D. `route`

    Answer: B
    Explanation: `ifconfig` was the traditional command. The `ip` command (from the `iproute2` suite) is the modern standard, e.g., `ip addr show`.

50. What command is used to display open network ports and active connections?

    A. `netstat` or `ss`

    B. `ports`

    C. `ifconfig`

    D. `ping`

    Answer: A
    Explanation: `netstat` is the classic tool. `ss` (socket statistics) is the modern, faster equivalent, e.g., `ss -tunlp`.

51. What is the standard port number for SSH (Secure Shell)?

    A. 21

B. 22

C. 23

D. 80

Answer: B
Explanation: Port 22 is the standard, registered port for the SSH service.

52. What is the standard port number for HTTP (web traffic)?

A. 80

B. 443

C. 8080

D. 25

Answer: A
Explanation: Port 80 is the standard port for unencrypted HTTP web traffic.

53. What is the standard port number for HTTPS (secure web traffic)?

A. 80

B. 443

C. 22

D. 8443

Answer: B
Explanation: Port 443 is the standard port for HTTPS (HTTP over SSL/TLS).

54. Which file is used to resolve hostnames to IP addresses locally (before DNS)?

A. `/etc/nsswitch.conf`

B. `/etc/resolv.conf`

C. `/etc/hosts`

D. `/etc/network/interfaces`

Answer: C
Explanation: The `/etc/hosts` file is a simple text file that statically maps IP addresses to hostnames.

55. Which file configures the DNS servers for the system to use?

A. `/etc/nsswitch.conf`

B. `/etc/resolv.conf`

C. `/etc/hosts`

D. `/etc/dns.conf`

Answer: B
Explanation: `/etc/resolv.conf` (resolver configuration) lists the IP addresses of the nameservers the system should query for DNS.

56. What command is used to download files from the web in the terminal?

    A. `download`

    B. `httpget`

    C. `wget` or `curl`

    D. `ftp`

    Answer: C
    Explanation: `wget` is a simple, direct-to-disk downloader. `curl` is a more powerful tool for transferring data with URLs, often used in scripts.

57. What is the `tar` command used for?

    A. To compress a file.

    B. To combine multiple files into a single archive (a "tarball").

    C. To edit text.

    D. To set file permissions.

    Answer: B
    Explanation: `tar` (tape archive) bundles files and directories into one `.tar` file. It does *not* compress by default.

58. How do you create a compressed `.tar.gz` (or `.tgz`) archive?

    A. `tar -cjf archive.tar.bz2 /path`

    B. `tar -czf archive.tar.gz /path`

    C. `gzip /path > archive.tar.gz`

    D. `tar -c /path | gzip > archive.tar.gz`

    Answer: B
    Explanation: `c` = create, `z` = filter through gzip (compress), `f` = file. This is the modern, all-in-one command. (D is the older, piped method).

59. How do you extract a `.tar.gz` archive?

    A. `tar -xzf archive.tar.gz`

    B. `tar -xjf archive.tar.gz`

    C. `unzip archive.tar.gz`

    D. `gunzip archive.tar.gz`

    Answer: A
    Explanation: `x` = extract, `z` = filter through gzip (decompress), `f` = file.

60. What command is used to display the manual (help page) for another command?

    A. `help`

    B. `info`

    C. `man`

    D. `doc`

    Answer: C
    Explanation: `man` (manual) displays the documentation for a command (e.g., `man ls`).

61. What is the `dmesg` command used for?

    A. To display kernel ring buffer messages (e.g., hardware detection on boot).

    B. To send a message to all users.

    C. To check disk space.

    D. To manage system daemons.

    Answer: A
    Explanation: `dmesg` (display message) prints the kernel's message buffer, which is very useful for debugging hardware and driver issues.

62. What is the "init" system?

    A. The system for initializing new hard drives.

    B. The first process (PID 1) that starts after the kernel, responsible for starting all other services.

    C. The system for initializing a user's shell.

    D. The networking configuration system.

    Answer: B
    Explanation: The "init" process (PID 1) is the parent of all other processes. Modern systems typically use `systemd`, while older ones used `SysVinit` or `Upstart`.

63. What is the dominant, modern init system used by most major Linux distributions (RHEL, Debian, Ubuntu)?

    A. `SysVinit`

    B. `Upstart`

    C. `runit`

    D. `systemd`

    Answer: D
    Explanation: `systemd` is the modern, service-based init system and service manager.

64. With `systemd`, what command is used to start the `nginx` service?

    A. `service nginx start`

B. `systemctl start nginx`

C. `/etc/init.d/nginx start`

D. `start nginx`

Answer: B
Explanation: `systemctl` is the primary tool for controlling `systemd`. (A is the older, compatibility command).

65. With `systemd`, what command is used to enable `nginx` to start on boot?

A. `systemctl on nginx`

B. `systemctl enable nginx`

C. `chkconfig nginx on`

D. `systemctl boot nginx`

Answer: B
Explanation: `systemctl enable` creates the necessary symbolic links to make the service start at boot time.

66. With `systemd`, what command is used to check the status of the `nginx` service?

A. `systemctl status nginx`

B. `systemctl check nginx`

C. `service nginx status`

D. `ps -ef | grep nginx`

Answer: A
Explanation: `systemctl status` provides a detailed view of the service's state, including whether it's running, enabled, and its most recent log entries.

67. What command is used to view the `systemd` logs (the journal)?

A. `cat /var/log/messages`

B. `dmesg`

C. `journalctl`

D. `systemctl logs`

Answer: C
Explanation: `journalctl` is the command used to query and view the `systemd` journal.

68. What is the package manager for Debian/Ubuntu-based systems?

A. `yum`

B. `apt` (or `apt-get`)

C. `rpm`

D. `pacman`

Answer: B
Explanation: `apt` (Advanced Package Tool) is the high-level tool, while `dpkg` is the low-level tool, for managing `.deb` packages.

69. What is the package manager for Red Hat/CentOS/Fedora-based systems?

    A. `yum` (older) or `dnf` (newer)

    B. `apt`

    C. `dpkg`

    D. `pacman`

    Answer: A
    Explanation: `yum` (Yellowdog Updater, Modified) was the classic tool. `dnf` (Dandified YUM) is its modern replacement. Both manage `.rpm` packages.

70. How do you install the `nginx` package using `apt`?

    A. `apt install nginx`

    B. `apt get nginx`

    C. `apt-get -i nginx`

    D. `apt-get update nginx`

    Answer: A
    Explanation: `apt install <package>` is the modern command. (The older command is `apt-get install <package>`).

71. How do you update the package lists (repositories) using `apt`?

    A. `apt install`

    B. `apt upgrade`

    C. `apt update`

    D. `apt-cache update`

    Answer: C
    Explanation: `apt update` (or `apt-get update`) downloads the latest list of available packages from the repositories. It *must* be run before an install or upgrade.

72. How do you install the `nginx` package using `yum`?

    A. `yum add nginx`

    B. `yum install nginx`

    C. `yum update nginx`

    D. `yum get nginx`

Answer: B
Explanation: `yum install <package>` (or `dnf install <package>`) is the command to install a package.

73. What is the low-level package tool used by `yum` (e.g., to install a `.rpm` file directly)?

    A. `rpm`

    B. `dpkg`

    C. `yum-install`

    D. `rpm-install`

    Answer: A
    Explanation: `rpm` (Red Hat Package Manager) is the low-level tool for managing `.rpm` files, (e.g., `rpm -ivh <file.rpm>`).

74. What is the low-level package tool used by `apt`?

    A. `rpm`

    B. `dpkg`

    C. `apt-pkg`

    D. `deb-install`

    Answer: B
    Explanation: `dpkg` (Debian Package) is the low-level tool for managing `.deb` files (e.g., `dpkg -i <file.deb>`).

75. What is the "shell"?

    A. The kernel.

    B. The command-line interpreter that reads and executes your commands.

    C. The graphical user interface.

    D. The filesystem.

    Answer: B
    Explanation: The shell is the program that provides the command-line interface, such as `bash`, `zsh`, or `sh`.

76. What is the most common default shell on modern Linux systems?

    A. `sh`

    B. `csh`

    C. `bash`

    D. `zsh`

    Answer: C
    Explanation: `bash` (Bourne-Again SHell) is the default login shell for most users on most Linux distributions.

77. Which file in your home directory is executed when you log into an interactive `bash` shell?

    A. `~/.bash_profile` or `~/.bash_login`

    B. `~/.bashrc`

    C. `~/.profile`

    D. `~/.bash_profile` (or `~/.bash_login` or `~/.profile`)

    Answer: D
    Explanation: For a *login* shell, `bash` looks for `.bash_profile`, then `.bash_login`, then `.profile`, and runs the first one it finds.

78. Which file in your home directory is executed when you start a new non-login `bash` shell (like opening a new terminal window)?

    A. `~/.bash_profile`

    B. `~/.bashrc`

    C. `~/.profile`

    D. `~/.bash_shell`

    Answer: B
    Explanation: `~/.bashrc` (run commands) is for non-login interactive shells. This is where you typically put your aliases and custom prompts.

79. How do you set an environment variable (`MY_VAR`) for your current shell session?

    A. `set MY_VAR="hello"`

    B. `MY_VAR="hello"`

    C. `export MY_VAR="hello"`

    D. `env MY_VAR="hello"`

    Answer: C
    Explanation: `export` makes the variable available to the current shell and all child processes started from it. (B only sets it for the shell itself).

80. What is the `$PATH` environment variable?

    A. The path to your home directory.

    B. The path to the kernel.

    C. A colon-separated list of directories that the shell searches for commands.

    D. The path to the `/etc` directory.

    Answer: C
    Explanation: When you type `ls`, the shell looks in the directories listed in `$PATH` (e.g., `/bin`, `/usr/bin`) to find the `ls` executable.

81. What command shows you the location of a command (e.g., `ls`) by searching the `$PATH`?

    A. `where`

B. `find`

C. `which`

D. `locate`

Answer: C
Explanation: `which ls` will search the `$PATH` and return the full path, (e.g., `/bin/ls`).

82. What is "stdout"?

A. Standard Output (the main channel for a command's normal output).

B. Standard Error (the channel for error messages).

C. Standard Input (the channel for user input).

D. A file in `/dev`.

Answer: A
Explanation: Standard Output (file descriptor 1) is the default place commands send their results, which is usually the terminal.

83. What is "stderr"?

A. Standard Output.

B. Standard Error (the channel for error messages).

C. Standard Input.

D. A log file.

Answer: B
Explanation: Standard Error (file descriptor 2) is a separate channel used for error messages, so they don't get mixed up with normal output (e.g., when piping).

84. How do you redirect *only* standard error to a file?

A. `command 1> file.txt`

B. `command 2> file.txt`

C. `command &> file.txt`

D. `command | file.txt`

Answer: B
Explanation: `2>` redirects file descriptor 2 (stderr). (`1>` or just `>` is for stdout).

85. How do you redirect *both* standard output and standard error to the same file?

A. `command > file.txt 2> file.txt`

B. `command > file.txt 2>&1`

C. `command &> file.txt`

D. Both B and C are common ways.

Answer: D
Explanation: `2>&1` redirects stderr to "wherever stdout is currently going." The `&>` is a modern `bash` shortcut for the same thing.

86. What is `/dev/null`?

    A. A file that is full.

    B. A special device file (a "black hole") that discards all data written to it.

    C. A device file that produces an infinite stream of zeros.

    D. A log file for hardware failures.

    Answer: B
    Explanation: It's a "null device." It's often used to silence unwanted output, e.g., `command > /dev/null 2>&1`.

87. What is a "cron job"?

    A. A failed command.

    B. A scheduled task that runs automatically at a specific time or interval.

    C. A system log file.

    D. A kernel module.

    Answer: B
    Explanation: Cron jobs are managed by the `cron` daemon and are defined in a "crontab" file.

88. What command is used to edit the current user's crontab file?

    A. `crontab -e`

    B. `cron -edit`

    C. `edit /etc/crontab`

    D. `systemctl edit cron`

    Answer: A
    Explanation: `crontab -e` (edit) opens the user's crontab in their default text editor.

89. What does the crontab entry `*/5 * * * * /path/to/script.sh` mean?

    A. Run the script at 5 AM every day.

    B. Run the script on the 5th day of every month.

    C. Run the script every 5 minutes.

    D. Run the script 5 times every hour.

    Answer: C
    Explanation: The five fields are (minute, hour, day-of-month, month, day-of-week). `*/` means "every," so `*/5` in the minute field means "every 5 minutes."

90. What is the `ssh` command used for?

    A. To copy files securely.

    B. To get a secure, encrypted command-line shell on a remote server.

    C. To check a server's status.

    D. To start a system service.

    Answer: B
    Explanation: `ssh` (Secure SHell) is the standard tool for securely logging into and managing remote Linux servers.

91. What command is used to securely copy a file to a remote server?

    A. `scp`

    B. `cp -s`

    C. `ssh-copy`

    D. `sftp`

    Answer: A
    Explanation: `scp` (secure copy) uses SSH to securely transfer files (e.g., `scp file.txt user@host:/tmp/`).

92. What is the `~/.ssh/authorized_keys` file used for?

    A. It stores the user's *private* key.

    B. It stores the host's *public* key.

    C. It contains a list of *public* keys that are allowed to log into this account.

    D. It stores the `ssh` client configuration.

    Answer: C
    Explanation: This file enables public key (passwordless) authentication. If you add someone's public key to this file, they can log in using their matching private key.

93. What is the `~/.ssh/id_rsa` file?

    A. The user's default *private* key.

    B. The user's default *public* key.

    C. A list of authorized keys.

    D. The server's host key.

    Answer: A
    Explanation: This is the default filename for a user's RSA private key. It is highly sensitive and must be kept secret.

94. What is the `~/.ssh/id_rsa.pub` file?

    A. The user's default *private* key.

B. The user's default *public* key.

C. A list of authorized keys.

D. The server's host key.

Answer: B
Explanation: This is the public key, derived from the private key. This is the key you share and copy into `authorized_keys` files on other servers.

95. What is the `sed` command used for?

A. To search for text.

B. To set file permissions.

C. A "stream editor" used for performing text transformations (like find-and-replace) on a file.

D. To sort a file.

Answer: C
Explanation: `sed` (Stream EDitor) is a powerful tool for filtering and transforming text, e.g., `sed 's/foo/bar/g' file.txt`.

96. What command displays the differences between two files?

A. `diff`

B. `compare`

C. `grep`

D. `wc`

Answer: A
Explanation: `diff` (difference) analyzes two files and outputs the lines that are different between them.

Access-Control-Request-Method: POST Access-Control-Request-Headers: content-type

97. What does the `wc` command do?

A. Writes to a file.

B. Counts the number of lines, words, and bytes in a file.

C. Changes the working directory.

D. Compares two files.

Answer: B
Explanation: `wc` (word count) is used to count lines (`-l`), words (`-w`), and bytes/characters (`-c`).

98. What is a "filesystem" in Linux?

A. The `/bin` directory.

B. A `.tar.gz` file.

C. The method used by the kernel to organize, store, and retrieve data on a disk (e.g., ext4, XFS, Btrfs).

D. The list of all users.

Answer: C
Explanation: A filesystem is the data structure and logic that controls how data is stored and accessed on a storage device (like a hard drive partition).

99. What is the `mount` command used for?

A. To attach a filesystem (like a disk partition or network share) to a directory in the filesystem tree.

B. To count the number of files.

C. To create a new filesystem.

D. To unmount a filesystem.

Answer: A
Explanation: Mounting makes a filesystem accessible. For example, `mount /dev/sdb1 /mnt/data` attaches the partition `/dev/sdb1` to the `/mnt/data` directory.

100. What command is used to see a list of all currently mounted filesystems?

A. `mount` (with no arguments)

B. `df`

C. `ls /mnt`

D. Both A and B.

Answer: D
Explanation: Running `mount` by itself lists all active mounts. `df` (disk free) also lists all mounted filesystems, but with usage statistics.