Section 1: File and Directory Management

1. **Display the current working directory?**
   pwd

2. **List all the contents of your current directory, including hidden files?**
   ls -la

3. **Change your directory to the `Desktop`?**
   cd ~/Desktop

4. **Create two directories named `dir1` and `dir2` on the Desktop?**
   mkdir dir1 dir2

5. **Inside `dir1`, create a file named `file1.txt`?**
   touch dir1/file1.txt

6. **Inside `dir2`, create a file named `file2.txt`?**
   touch dir2/file2.txt

7. **Using nano or vim Write the numbers 1 to 9 into `file1.txt`?**
   nano dir1/file1.txt
   (Type `1` to `9`, then save and exit.)

8. **From the home directory Copy the contents of `file1.txt` into `file2.txt`?**
   cp dir1/file1.txt dir2/file2.txt

9. **From the home directory, delete `file1.txt` inside `dir1`?**
   rm dir1/file1.txt

10. **Remove the directory `dir1` from the Desktop?**
    rmdir dir1

11. **Redirect the output of the network configuration command to a file named `network_info.txt` on the Desktop?**
    ifconfig > ~/Desktop/network_info.txt

12. **Open the Desktop folder and show all files with detailed information?**
    ls -la ~/Desktop

Section 2: Users and Groups Management

13. **Create a new user with your name?**
    sudo adduser yourname

14. **Set a password for your user?**
    passwd yourname

15. **Open the file that contains user information and verify that your user has been added?**
    cat /etc/passwd | grep yourname

16. **Add your user to the file that gives administrative privileges?**
    sudo usermod -aG sudo yourname

17. **Switch to your user and confirm the user identity?**
    su - yourname
    whoami

18. **Create a new group named `testgroup`?**
    sudo groupadd testgroup

19. **Add your user to `testgroup`?**
    sudo usermod -aG testgroup yourname

20. **Add the group `testgroup` to the file that gives administrative privileges?**
    sudo usermod -aG sudo testgroup

21. **Remove your user from the file that gives administrative privileges?**
    sudo deluser yourname sudo

22. **Check if your user still have administrative privileges.**
    groups yourname

23. **Check which groups your user belongs to?**
    groups

Section 3: Permissions and Ownership

24. **Set the permissions of `file2.txt` on the Desktop to allow the owner to read, write, and execute; the group to read and execute; and others to read?**
    chmod 751 ~/Desktop/dir2/file2.txt

25. **Check the permissions of `file2.txt` to verify the change?**
    ls -l ~/Desktop/dir2/file2.txt

26. **Change the ownership of `file2.txt` to your user?**
    sudo chown yourname ~/Desktop/dir2/file2.txt

27. **verify the ownership of `file2.txt`?**
    ls -l ~/Desktop/dir2/file2.txt

28. **Change back the ownership of a file `file2.txt` ?**
    sudo chown root ~/Desktop/dir2/file2.txt

29. **Grant write permission to everyone for `file2.txt`?**
    chmod a+w ~/Desktop/dir2/file2.txt

30. **Remove the write permission for the group and others for `file2.txt`?**
    chmod go-w ~/Desktop/dir2/file2.txt

31. **Delete `file2.txt` after making the necessary ownership and permission changes?**
    rm ~/Desktop/dir2/file2.txt

32. **What command would you use to recursively change the permissions of all files and directories inside a folder named `project` to '755'?**
    / chmod -R 755 project

Section 4: Process Management

33. Install a system monitor tool that provides an interactive process viewer(htop)?
sudo apt install htop

34. Display all running processes?
ps aux

35. Display a tree of all running processes?
pstree

36. Open the interactive process viewer and identify a process by its PID?
htop

37. Kill a process with a specific PID?
kill <PID>

38. Start an application and stop it using a command that kills processes by name(exeyes)?
exeyes & # Start the application
pkill exeyes # Stop it

39. Restart the application, then stop it using the interactive process viewer?
Start with `exeyes`, then use `htop` to find and kill it.

40. Run a command in the background, then bring it to the foreground(exeyes)?
exeyes & # Run in the background
fg # Bring to foreground

41. Check how long the system has been running?
uptime

42. List all jobs running in the background?
jobs

Section 5: Networking Commands

43. Display the network configuration?
ifconfig

44. Check the IP address of your machine?
hostname -I

45. Test connectivity to an external server?
ping -c 4 google.com

46. Display the routing table?
route -n

47. Check the open ports and active connections?
netstat -tuln

48. Show the IP address of the host machine and the VM, and verify if they are on the same network. 49. Trace the route to an external server?

```
ifconfig  # Check your IPs
```

50. Find out the default gateway?

```
traceroute google.com
```

51. Check the MAC address of your network interface?

```
ip route | grep default
```

52. Ensure that the VM can access external networks?

```
ip link show
```

Section 6: UFW Firewall

53. Enable the firewall?

```
sudo ufw enable
```

54. Allow SSH connections through the firewall?

```
sudo ufw allow ssh
```

55. Deny all incoming traffic by default?

```
sudo ufw default deny incoming
```

56. Allow HTTP and HTTPS traffic?

```
sudo ufw allow http
sudo ufw allow https
```

57. Allow port 20?

```
sudo ufw allow 20
```

58. Reset the firewall settings?

```
sudo ufw reset
```

59. Delete a rule from the firewall.

```
sudo ufw delete allow ssh
```

60. Disable the firewall?

```
sudo ufw disable
```

61. View the stasudo ufw disabletus of the firewall?

```
sudo ufw status
```

62. Log firewall activity and view it?

```
sudo ufw logging on
cat /var/log/ufw.log
```

Section 7: Searching and System Information

63. Delete the command history?

```
history -c
```

64. Search for a kali in the `/etc/passwd` file?
grep kali /etc/passwd

65. Search for a kali in the `/etc/group` file?
grep kali /etc/group

66. Locate the `passwd` file?
locate passwd

67. Locate the shadow file and open it?
locate shadow
sudo cat /etc/shadow

68. Search for all configuration files in the `/etc` directory?
find /etc -type f -name "*.conf"

69. Search recursively for a specific word in the `/var/log` directory?
grep -r "specific_word" /var/log

70. View the system’s kernel version?
uname -r

71. Display the system’s memory usage?
free -h

72. Show the system’s disk usage?
df -h

73. Check the system's uptime and load average?
uptime

74. Display the current logged-in users?
who

75. Check the identity of the current user?
whoami

76. View the `/var/log/auth.log` file?
cat /var/log/auth.log

77. Shred the `auth.log` file securely?
sudo shred -u /var/log/auth.log

78. How do you lock a user account to prevent them from logging in?
sudo passwd -l username

79. What command would you use to change a user's default shell?
chsh -s /bin/bash username

80. Display the system's boot messages?
dmesg

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