

Member ID: \_\_\_\_\_

Time: \_\_\_\_\_

Rank: \_\_\_\_\_



# Linux Operating System Fundamentals

350

**STATE 2025**

**CONCEPT KNOWLEDGE:**

Multiple Choice (50 @ 2 points each)

\_\_\_\_\_ (100 points)

**Test Time: 60 minutes**

**GENERAL GUIDELINES:**

*Failure to adhere to any of the following rules will result in disqualification:*

1. Member must hand in this test booklet and all printouts if any. Failure to do so will result in disqualification.
2. No equipment, supplies, or materials other than those specified for this event are allowed in the testing area. No previous BPA tests and/or sample tests (handwritten, photocopied, or keyed) are allowed in the testing area.
3. Electronic devices will be monitored according to ACT standards.

### Multiple Choice Questions

*Directions:* Identify the letter of the choice that best completes the statement or answers the question.

1. Which command is used to copy files or directories?
  - A. mv
  - B. cp
  - C. copy
  - D. clone
2. How do you move or rename a file in Linux?
  - A. move
  - B. cp
  - C. mv
  - D. ren
3. Which command is used to delete files in Linux?
  - A. rm
  - B. del
  - C. erase
  - D. remove
4. What command is used to display the first few lines of a file?
  - A. head
  - B. top
  - C. start
  - D. begin
5. Which command allows you to append output to a file?
  - A. echo >>
  - B. write >>
  - C. append
  - D. cat
6. What is the command to compress files using gzip?
  - A. zip
  - B. compress
  - C. gzip
  - D. tar

7. How do you change the ownership of a file or directory?
  - A. chmod
  - B. chown
  - C. chgrp
  - D. own
8. Which command is used to view processes running on a system?
  - A. ps
  - B. proc
  - C. top
  - D. tasklist
9. How do you execute a command in a different shell?
  - A. bash
  - B. sh
  - C. exec
  - D. run
10. Which command is used to display disk usage?
  - A. df
  - B. du
  - C. diskuse
  - D. disk
11. Which command is used to start a service in a systemd-based Linux system?
  - A. service start
  - B. systemctl start
  - C. system start
  - D. init start
12. How do you stop a service in a systemd-based system?
  - A. systemctl stop
  - B. service stop
  - C. system stop
  - D. init stop
13. Which command is used to restart a service in a systemd-based Linux system?
  - A. service restart
  - B. systemctl restart
  - C. init restart
  - D. system restart

14. How do you check the status of a service in a systemd-based Linux system?
- A. systemctl status
  - B. service status
  - C. init status
  - D. system status
15. Which command is used to install a package using the YUM package manager?
- A. yum install
  - B. apt-get install
  - C. rpm install
  - D. pkg add
16. How do you update all packages using the APT package manager?
- A. apt-get update
  - B. apt-get upgrade
  - C. apt-get install
  - D. apt-get dist-upgrade
17. Which command removes a package but keeps its configuration files in a Debian-based system?
- A. dpkg -r
  - B. apt-get remove
  - C. apt-get purge
  - D. dpkg -P
18. Which command is used to forcefully terminate a process by its name?
- A. killall
  - B. pkill
  - C. kill -9
  - D. kill
19. How do you find the process ID of a running process by its name?
- A. pidof
  - B. pgrep
  - C. ps
  - D. top
20. Which command is used to view all currently running processes?
- A. ps
  - B. top
  - C. htop
  - D. all

21. How do you bring a background process to the foreground?
- A. fg
  - B. bg
  - C. bring
  - D. front
22. How do you mount a partition to a specific directory?
- A. mount /dev/sda1 /mnt
  - B. mount -t ext4 /mnt /dev/sda1
  - C. mount -o /mnt /dev/sda1
  - D. mount /mnt /dev/sda1
23. Which command is used to unmount a partition?
- A. umount
  - B. dismount
  - C. unmount
  - D. eject
24. If you have a disk with a total size of 1TB and 200GB is used, what is the percentage of used space?
- A. 20%
  - B. 50%
  - C. 80%
  - D. 40%
25. How do you create a swap space on a new partition?
- A. mkswap
  - B. mkfs.swap
  - C. swapon
  - D. mkfs -t swap
26. Which command is used to activate the swap space on a partition?
- A. swapon
  - B. swaponable
  - C. swapon -a
  - D. swapon -e
27. Which command is used to label a partition with a specific name?
- A. e2label
  - B. mklable
  - C. tune2fs -L
  - D. label

28. How do you extend a file system after resizing a logical volume?
- A. resize2fs
  - B. lvresize
  - C. growfs
  - D. extresize
29. Which command is used to change the ownership of a file in Linux?
- A. chown
  - B. chmod
  - C. chgrp
  - D. ownfile
30. Which command is used to add a new printer in a CUPS-managed system?
- A. lpadmin
  - B. cupsadd
  - C. lpstat
  - D. printconf
31. How do you print a file named document.txt from the command line?
- A. lp document.txt
  - B. print document.txt
  - C. lpr document.txt
  - D. lpq document.txt
32. If you want to allow a specific IP address through the firewall, which command should you use in iptables?
- A. iptables -A INPUT -s IP\_ADDRESS -j ACCEPT
  - B. iptables -A INPUT -s IP\_ADDRESS -j DROP
  - C. iptables -I INPUT -s IP\_ADDRESS -j REJECT
  - D. iptables -P INPUT -s IP\_ADDRESS -j ALLOW
33. How do you display detailed information about all network interfaces?
- A. ifconfig -a
  - B. ip a
  - C. netstat -i
  - D. route
34. How do you create a new group in Linux?
- A. groupadd
  - B. addgroup
  - C. newgroup
  - D. creategroup

35. Which command is used to add a user to a group?
- A. usermod -aG
  - B. useradd -G
  - C. groupadd -u
  - D. groupmod -a
36. How do you remove a user from a group in Linux?
- A. gpasswd -d
  - B. groupdel
  - C. groupmod -R
  - D. usermod -G
37. If a user is part of 3 groups and you add them to 2 more, how many groups are they part of now?
- A. 5
  - B. 3
  - C. 2
  - D. 6
38. Which command is used to change a user's primary group?
- A. usermod -g
  - B. usermod -G
  - C. groupmod -p
  - D. gpasswd -g
39. How do you display a list of all groups in Linux?
- A. cat /etc/group
  - B. groups
  - C. listgroups
  - D. showgroups
40. How do you display the list of all open network ports and associated processes?
- A. netstat -tuln
  - B. ss -ltn
  - C. lsof -i
  - D. iptables -L
41. Which command allows you to modify the permissions of a file to make it executable by the owner only?
- A. chmod u+x
  - B. chmod +x
  - C. chmod 700
  - D. chmod 755



42. How do you limit the maximum number of concurrent user logins?
- A. Edit /etc/security/limits.conf
  - B. Use ulimit -n
  - C. Edit /etc/login.defs
  - D. Use setuid
43. Which command is used to monitor CPU usage by each user?
- A. top -u
  - B. ps aux
  - C. w
  - D. sar -u
44. How do you set up password aging for a user so they must change their password every 30 days?
- A. chage -M 30
  - B. passwd -x 30
  - C. usermod -x 30
  - D. chpasswd -x 30
45. Which file would you edit to deny SSH access to specific users?
- A. /etc/ssh/sshd\_config
  - B. /etc/hosts.deny
  - C. /etc/ssh/ssh\_config
  - D. /etc/deny.ssh
46. How do you allow only a specific IP address to access SSH?
- A. Add it to /etc/hosts.allow
  - B. Edit /etc/ssh/sshd\_config
  - C. Use iptables to allow the IP
  - D. Add it to /etc/hosts.deny
47. Which file stores the password policies, such as minimum length and complexity?
- A. /etc/login.defs
  - B. /etc/passwd
  - C. /etc/security/limits.conf
  - D. /etc/security/pwquality.conf
48. How do you enable or disable the root login via SSH?
- A. Edit /etc/ssh/sshd\_config
  - B. Use sudo visudo
  - C. Use passwd -l root
  - D. Edit /etc/sudoers

49. Which command is used to view the history of commands executed by users?

- A. history
- B. last
- C. commands
- D. logread

50. How do you prevent a user from changing their password?

- A. chage -m 99999
- B. passwd -n 99999
- C. usermod -L
- D. passwd -l