General Instructions:

* Follow the instructions given in each section.
* Do not write anything on the question paper, except your roll no.
* Make sure that you attempt the questions in order.

**Section - A**

**(Q 1 to 10: Each question carries 1 mark)**

Q.1 What is the output of the following program?

x = 3; y = 5; z = 10; if [( $x -eq 3 ) -a ( $y -eq 5 -o $z -eq 10 )] then echo $x else echo $y fi

1. 1
2. **3**
3. 5
4. Error

Q. 2. Which of the following command provides the list of the functions defined in the login session?

1. declare -f
2. declare -F
3. **both declare -f and -F**
4. none

Q.3. Which command is used to display network connection statistics?

1. **netstat**
2. ping
3. traceroute
4. ifconfig

Q.4. What is the maximum value that the load average can reach?

1. 1
2. **There is no maximum value**
3. 100
4. 10

Q.5. Akshay used hostname command on terminal/shell. What output will he get?

1. **hostname of the system**
2. available ram statistics
3. network connectivity status of system
4. none

Q.6. Navish used cal command on terminal/shell. Which command should he use?

1. a calculator will be opened on shell
2. date and time will be displayed
3. **calendar of current month will be displayed**
4. None **min**

Q.7. Jack wants to look for the calendar of 2020. Which flag should he use with cal command?

1. -w
2. -m
3. **-y**
4. -n

Q.8. What does simple uname command tell you?

1. username
2. **system information**
3. hostname
4. all usernames in system

Q.9. What default signal kill command carries?

1. SIGTERM
2. SIGHUP
3. **SIGKILL**
4. SIGINT

Q.10What is the initial ttl value of first packet traceroute command sends?

1. 0
2. 10
3. **1**
4. 3

**Section - B**

**(Q 11 to 15: Each question carries 2 marks)**

Q.11. Which command can be used to display the IP address configuration of a network interface?

1. **ifconfig**
2. ping
3. traceroute
4. dig

Q.12What is the function of the ps command?

1. To display the contents of a file
2. To display the current date and time
3. **To display information about running processes**
4. To display the system's hostname

Q.13. What is the function of the bg command?

1. To display the current working directory
2. **To send a process to the background**
3. To display the system's calendar
4. To display the location of a command

Q.14 Which command can be used to perform arithmetic calculations in the command line interface?

1. cal
2. date
3. which
4. **bc**

Q.15. What is the purpose of a shebang line in a shell script?

1. To comment out a section of code
2. **To define the default shell to be used to run the script**
3. To specify command line arguments
4. To declare variables

**Section – C**

**(Q 16 to 19: Each question carries 5 marks)**

Q.16. **You are a network administrator and you have received reports of internet connectivity issues between two servers on the network. What steps would you take to troubleshoot the issue using network troubleshooting commands in Linux?**

Q.17. **Write a shell script program to check if a number is positive and even or not.**

Q.18. **Perform the following operations with suitable command (1 mark each)**

(i) Print the date in format “06 June 2020 08:44:56 PM IST 20-06-06

(ii) Set the system date and time to June 06, 2020 and 22:15:00

(iii) Print Alias name in Linux

(iv) Limit the number of packets

(v) Display the modification time of the disk usage.

Q.19. **Write commands to perform following operations (1 mark each)**

(i) To print all the system information (Kernel name, network node, etc)

(ii) To display all the interfaces available in the system

(iii) To route the packets through the gate

(iv) To sets the priority of a process

(v) To activate the driver for the given interface