* **Follow the instructions given in each section.**
* **Make sure that you attempt the questions in order.**

**SECTION-A (10\*1 mark=10 marks)**

***(All questions are compulsory)***

Q1. What is a shell script?

**A. A program written in a shell language**

B. A program written in a high-level programming language

C. A program written in a machine language

D. A program written in an assembly language

Q2. What is the exit status of a command or script?

A. The output of the command or script

**B. The value returned by the command or script to the operating system**

C. The time it took for the command or script to execute

D. The size of the command or script

Q3. What is the default exit status of a successful command or script?

**A. 0**

B. 1

C. 2

D. 3

Q4. What does the exit status of 1 indicate in a script?

A. Successful execution

**B. Non-zero exit status**

C. Syntax error

D. Permission denied

Q5. How can you check the exit status of a command or script?

A. By using the echo command

B. By using the pwd command

C. By using the exit command

**D. By using the $?**

Q6. What is the purpose of a for loop in a Linux script?

a) To execute a command repeatedly while a certain condition is true

**b) To execute a command a specific number of times**

c) To execute a command once

d) To execute a command until a certain condition is true

Q7. What is the basic syntax for a for loop in a Linux script?

a) for (condition)

**b) for (variable; condition; increment)**

c) for (expression)

d) for (variable)

Q8. Which of the following statements is true about the do-while loop in a Linux script?

**a) The loop executes at least once, regardless of the condition**

b) The loop executes until the condition is true

c) The loop executes until the condition is false

d) The loop executes based on a specified number of iterations

Q9. What is the basic syntax for a do-while loop in a Linux script?

**a) do (command) while (condition)**

b) while (condition) do (command)

c) for (variable; condition; increment) do (command)

d) if (condition) then (command)

Q10. Which of the following is NOT a valid shell script loop control statement in Linux?

a) break

**b) exit**

c) continue

d) return

**SECTION-B (10\*2 mark=20 marks)**

***(All questions are compulsory)***

Q1. What is the purpose of the exit command in a shell script?

**A. To terminate the script immediately**

B. To print a message to the console

C. To pause the script

D. To clear the screen

Q2. What is the purpose of the set -e command in a shell script?

A. To set the exit status of the script to 0

B. To ignore any errors that occur in the script

**C. To exit the script immediately if any command fails**

D. To print the output of each command to the console

Q3. Which of the following is true about the exit status of a pipeline?

A. The exit status is the sum of the exit statuses of each command in the pipeline

**B. The exit status is the exit status of the last command in the pipeline**

C. The exit status is always 0

D. The exit status is always 1

Q4. What is the purpose of the trap command in a shell script?

A. To catch errors that occur during the execution of the script

**B. To execute a command when a signal is received by the script**

C. To change the exit status of the script

D. To pause the script

Q5. What is the difference between the exit and return commands in a shell script?

**A. The exit command terminates the script, while the return command returns to the calling function**

B. The return command terminates the script, while the exit command returns to the calling function

C. Both commands have the same purpose

D. The exit command is used in a subshell, while the return command is used in a function

Q6. Which command is used to display the contents of a directory in Linux?

**a. ls**

b. cd

c. mkdir

d. rm

Q7. Which command is used to change the ownership of a file in Linux?

**a. chown**

b. chmod

c. chgrp

d. mv

Q8. What is the default shell in most Linux distributions?

**a. Bash**

b. Csh

c. Ksh

d. Zsh

Q9. Which command is used to create a new file in Linux?

**a. touch**

b. echo

c. cat

d. rm

Q10. Which command is used to display the IP address of a Linux machine?

**a. ifconfig**

b. ping

c. nslookup

d. netstat

**SECTION-C() (4x5 marks=20 marks)**

Q1. 6 Write a shell script that prompts the user to enter a number between 1 and 10. If the user enters a valid number, the script should use a for loop to print the multiplication table for that number. If the user enters an invalid number or a non-numeric input, the script should display an error message and prompt the user to try again.

ans:

#!/bin/bash

echo "Enter a number between 1 and 10: "

read num

if [[ "$num" =~ ^[1-9]$|^10$ ]]; then

for (( i=1; i<=10; i++ ))

do

echo "$num x $i = $((num\*i))"

done

else

echo "Error: Please enter a valid number between 1 and 10."

fi

Q17. You are a software developer working on a Linux operating system. You have written a C program to perform some specific tasks, and you want to compile and execute it using the GCC compiler. What steps would you follow to compile and execute the program?

Ans: To compile and execute the C program using GCC compiler on Linux, you need to follow these steps:

Open the terminal and navigate to the directory where the C program file is located.

Type the following command to compile the program: gcc program\_name.c -o program\_name

To execute the program, type the following command in the terminal: ./program\_name

Q18. Print a pattern of numbers in a right triangle shape for a value n.

For Example:

n= 5

1

1 2

1 2 3

1 2 3 4

1 2 3 4 5

ans :

#!/bin/bash

# This script prints a diamond pattern of asterisks

#!/bin/bash

# This script prints a right triangle pattern of numbers

for (( i=1; i<=5; i++ ))

do

for (( j=1; j<=i; j++ ))

do

echo -n "$j "

done

echo ""

done

Q19.

a. What is exit status in Linux?

Ans- Exit status is a numeric value that represents the status of a program or

command after it has finished executing. A value of 0 indicates success,

while any other value indicates an error.

b. What is time stamping in Linux?

ans: Time stamping is a mechanism used in Linux to keep track of the time a file was last accessed, modified or changed.

**SECTION-C (1x10 marks=10 marks)**

Q1.

1. What is the default exit status of a successful command in a shell script?

ans : The default exit status of a successful command is 0.

1. What is the difference between a compiled program and a scripted program?

ans : A compiled program is translated into machine code and executed directly, while a scripted program is interpreted by a separate program.

1. What is the purpose of the -l flag in GCC?

ans : The -l flag specifies the library to link with the compiled program.

1. What is time stamping?

ans : Time stamping is the process of recording the date and time when an event occurred,

typically in electronic or digital format. The purpose of time stamping is to provide a reference point

for when an event occurred, allowing for accurate sequencing of events and enabling the tracking

of time-sensitive information.

1. What is the difference between absolute and relative time stamping?

ans : Absolute time stamping provides a specific date and time for an event, while relative time stamping indicates the amount of time that has elapsed since a previous event.