**General Instructions:**

* **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. Which command displays the current date and time in Linux?

a. uptime

**b. date**

c. hostname

d. uname

Q2. Which command displays information about the current operating system?

**a. uname**

b. which

c. ps

d. cal

Q3. What command displays the location of a specific executable file?

**a. which**

b. fg

c. nice

d. ping

Answer: a

Q4. Which command shows a list of currently running processes?

**a. ps**

b. bg

c. traceroute

d. ifconfig

Q5. Which command is used to set the priority of a process in Linux?

a. ping

**b. nice**

c. fg

d. traceroute

Q6.What command is used to display the network configuration of a Linux system?

a. ping

**b. ifconfig**

c. traceroute

d. cal

Q7. Which command is used to troubleshoot DNS issues in Linux?

a. ping

b. traceroute

**c. nslookup**

d. bg

Q8. Which command is used to display the version of a Linux distribution?

**a. uname**

b. bg

c. ps

d. date

Q9. Which command is used to display the process ID of a running process?

a. bg

b. fg

**c. ps**

d. nice

Q10. Which command is used to execute a script in Linux?

a. exec

**b. source**

c. run

d. start

**SECTION-B (5\*2 mark=10 marks)**

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

Q1.Which command can be used to perform arithmetic calculations in the command line interface?

A) cal

B) date

C) which

**D) bc**

Answer: D) bc

Q2.The which command is used to:

A) Display the system's calendar

**B) Display the location of a command**

C) Display the system's hostname

D) Display the current time

Answer: B) Display the location of a command

Q3.What is the function of the ps command?

A) To display the contents of a file

B) To display the current date and time

**C) To display information about running processes**

D) To display the system's hostname

Answer: C) To display information about running processes

Q4.What is the function of the bg command?

A) To display the current working directory

**B) To send a process to the background**

C) To display the system's calendar

D) To display the location of a command

Answer: B) To send a process to the background

Q5.What is the difference between a shell variable and an environment variable?

a. Shell variables are set globally, while environment variables are local to a script

b. Shell variables are temporary, while environment variables are permanent

**c. Shell variables are local to a script, while environment variables are set in the shell's environment**

d. There is no difference between shell and environment variables

Answer: c. Shell variables are local to a script, while environment variables are set in the shell's environment.

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

Q1. Explain the difference between a process and a thread.

Answer: A process is a running instance of a program, while a thread is a subset of a process that can execute concurrently with other threads in the same process. A process has its own memory space and system resources, while threads share the same memory space and resources within a process.

Q2. How would you use the "ps" command to list all processes that are consuming more than 50% of the CPU?

Answer: You can use the "ps" command with the "axo" options to list all running processes and their CPU usage percentage. To filter the output for processes consuming more than 50% CPU, you can pipe the output to the "awk" command to compare the CPU usage percentage with the threshold value. The command would look like this: "ps axo pid,%cpu | awk '$2 > 50 {print $1}'".

Q3. Write commands to execute following:

a.How would you use the "ps" command to list all processes that are consuming more than 50% of the CPU?

Answer: "ps -eo pid,%cpu | awk '{if ($2 > 50.0) print $1}'"

b.How would you use the "kill" command to terminate a process by its process ID (PID)?

Answer: "kill [PID]"

Q4.Scenario: You want to check the system information and see which operating system you are running.

a) Which command will you use to see the operating system information?

b) How can you see the system's kernel version?

Answer:

a) To see the operating system information, we can use the "uname" command with the "-a" option.

b) To see the system's kernel version, we can use the "uname" command with the "-r" option.