Qualitative Assessment - 2

1. Explain the three primary modes of the Linux VI Editor (Command mode, Insert mode, and Last Line/Ex mode). Describe the steps a user must take to switch between these modes and the specific role of the Esc key.

2. Compare the functionality of the grep and cut commands. Provide a practical example of a "pipelined" command where you would use both to search for a specific pattern and then extract a particular column from that result.

3. Explain the difference between Standard Redirection (using > and >>) and Linux Pipes (|). Specifically, describe how the tee command functions and why it is useful when you need to save output while still viewing it on the terminal.

4. Consider a file with the permission string -rwxr-x---. Convert this symbolic representation into its numeric (octal) equivalent and define the specific access rights granted to the Owner, the Group, and Others.

5. Discuss the find command's utility. Write a command to locate all files ending in .txt within the /home directory that have been modified within the last 7 days.

6. Differentiate between Local and Global (Environment) variables in a shell environment. Explain why the export command is necessary when you want a variable defined in one script to be accessible by a sub-process or child script.

7. Define Command Substitution. Demonstrate the syntax used to perform substitution by writing a script snippet that stores the current system date into a variable and then displays it with a custom message.

8. Compare and contrast the while loop and the until loop. Explain the logical condition required for each loop to terminate and provide a short code example of an until loop.

9. Explain the syntax and execution flow of the case statement. Describe a scenario where using a case statement is more efficient than using multiple if-then-elif-else conditions.

10. Analyze the impact of the break and continue statements on loop execution. How does the shell's behavior differ when a continue statement is triggered versus when a break statement is encountered?