



Part C

Number of questions: Three (03) essay questions

Mark allocation: 35

1.
  - a. "It is possible to execute a command inside the echo command". Justify the above statement using an example. (2 mark)
  - b. List three (03) types of quotes in the bash shell and explain its usage. (3 mark)
  - c. Write a shell script to get five (05) inputs (numbers) as command line arguments, then sort them according to ascending order and get the sum of three (03) middle numbers and finally print the answer on the shell. (4 mark)
2.
  - a. What is "/dev/null"? (2 mark)
  - b. Briefly explain "Pipe" in Linux using a suitable example. (3 mark)
  - c. If the directory listing is too long and scrolls off the page, briefly explain how to view a page at a time. (2 mark)
  - d. Briefly explain the output of the following command:  
time ls -l (2 mark)
  - e. Write a shell script that checks a list of users given through the command line is logged in or not. (5 mark)
3. You are required to write a shell script to calculate the instalment for a given loan amount according to the specified interest rate, the number of years and save each calculated record to a file.

In the main body of your script, first, you need to create a file called 'loan.txt' adding the content as 'LOAN DETAILS'. Then ask the user whether he needs to calculate an instalment of a particular loan amount or not. If the user response is yes; you need to call a function to calculate the instalment (use a while loop to call the function until the user finishes calculating instalment for different values.). When the user selects no, end the script by printing "The end! Bye."

When creating the function, you need to consider the following factors.

The function should be given the principal amount, interest rate per annum (without the percentage (%) symbol; eg if the loan rate is 12% per annum, it should be input as 12) and the

number of years the loan to be granted as user inputs and finally print the loan instalment on the shell.

Further, you need to save the details about each loan instalment to the file named 'loan.txt' according to the following format:

"The loan amount for a principal amount of Rs.100000, for 3 years at the rate of 12%:  
Rs. 3777"

Note:

The following formula is needed to calculate the instalment.

$$\text{instalment} = \frac{(\text{principal amount} + \text{total interest})}{\text{Total number of months}}$$

(12 mark)

