**Part 1**​ **(Shell scripting)**

**Note1:**​ For the following assignments, accept only integer values from user.If user enters value other than integer display error message and terminate the program. **Note2:**​ If you want to perform the following arithmetic operations with Floating point values make use of **Basic calculator** ​in your script.

(**Hint:**​ use **bc**​ command for Basic calculator)

1)Write a shell script to Print prime numbers from 1 to **n**​. Read the value of **n** from user. - **prime.sh**

**#!bin/bash**

**echo “enter a number m and n”**

**read m n**

**for a in $(seq $m $n)**

**do**

**k=0**

**for i in $(seq 2 $(expr $a – 1))**

**do**

**if [ $(expr $a % $i) -eq 0 ]**

**then**

**k=1**

**break**

**fi**

**done**

**if [ $k -eq 0 ]**

**then**

**echo $a**

**fi**

**done**

2)Write a script to check given number is even or odd. – **even.sh**

**#!/bin/bash**

**echo “Enter a no: “**

**read num**

**if [[ `expr $num%2` -ne 0 ]]**

**then**

**echo “odd no”**

**else**

**echo”even no”**

**fi**

3. Write a shell script to convert a decimal number to binary number.

#!/bin/bash

**echo “enter a no: “**

**read a**

**bin\_no=””**

**while [ $a -gt 0 ]**

**do**

**rem=`expr $a % 2 `**

**bin\_no=$rem$bin\_no**

**a=`expr $a / 2 `**

**done**

**echo “bin\_no”**

4)Write a script to **swap**​ 2 numbers using intermediate variable. – **swap.sh**

#!/bin/bash

**echo “no 1 is”**

**read num1**

**echo “no 2 is”**

**read num2**

**num3=$num1**

**num1=$num2**

**num2 =$num3**

**echo “After swap”**

**echo “no 1 is $num1”**

**echo “no 2 is $num2”**

5) Write a script to **swap**​ 2 numbers without using intermediate variable. **Swapp.sh**

**#!/bin/bash**

**echo “enter 1 no”**

**read num1**

**echo “enter 2 no”**

**read num2**

**num1 = $[ num1+num2 ]**

**num2 = $[ num1-num2 ]**

**num1 = $[ num1-num2 ]**

**echo “no 1 is $num1”**

**echo “no 2 is $num2”**

6) Write a script to reverse a number using while loop. Rev.sh

Example:

input : 12 output: 21

input : 213 output: 312

input : 125634 output:436521

**#!/bin/bash**

**echo “enter a no: “**

**read n**

**rev=0**

**while [[ $n -gt 0 ]]**

**do**

**a=` expr $n % 10 `**

**rev=` expr $rev \\* 10 + $a `**

**n=` expr $n / 10 `**

**done**

**echo “$rev”**

7)print multiplication table of integer using while loop. **Table.sh**

**#!/bin/bash**

**echo “Enter a no”**

**read n**

**a=0**

**s=0**

**while [[ $a -le 10 ]]**

**do**

**s=`expr $a \\* $n`**

**echo “$n X $a + $s”**

**a=$(($a+1))**

**done**

8. Get year as an input from user and find whether year is leap year or not. **Leap.sh**

**#!/binbash**

**echo “enter a year: “**

**read y**

**if [[ $y%400 – eq 0]] && [[ $y%100 -eq 0 ]]**

**then**

**echo “leap year”**

**elif [[ $y%100 -ne 0 ]] && [[ $y%4 -eq 0 ]]**

**then**

**echo “leap year”**

**else**

**echo “not a leap year”**

**fi**

9. Write a script to read the number of rows to be displayed in the pattern and print following pattern using for loop:

1

2 3

4 5 6

….....

10. Write a script using **case**​ condition to do the following

- Display “Press any key of keyboard and then press enter key”

- If the given input is number display “The input is digit.” message - If the given input is lowercase letter then display “The input is lowercase Letter.” message

- If the given input is uppercase letter then display “The input is Uppercase letter.” message

11.Write a for loop to display the outputs of **Date,pwd, df** ​commands. **df** command displays system disk usage details.

(**Hint:**​ give these commands as input to for loop)

12.Write a script to take filename as argument and display the file exists or not **Note:**​ If the file exists in current working directory just give filename as argument, If not give absolute path of that file as argument.

13.Write a script to take directory name as argument and display the directory exists or not.

**Note:**​ If the directory exists in current working directory just give filename as argument, If not give absolute path of that file as argument.

14.Read a file and display the contents of the file line by line using for loop and pass the file as command line argument to the script.

15.Read a file and display the contents of the file line by line using while loop and pass the file as command line argument to the script.

16.Write a shell script to read array elements as command line arguments assign the arguments to array and do the following

- Display the length of the array.

- Display the all elements and their index values.

Example :

let the array elements are as follows

arr[0]=”zero”, arr[1]=”one”, arr[2]=”two”,

output should be :

length of the array : 3

index 0 element is “zero”

index 1 element is “one”

index 2 element is “two”

17. Write a program to read array of 10 integers from user and find the smallest number in the array and print it.

18. Write a single shell script to do the following

- read two numbers as input from terminal.

- write Add,Sub and Mul functions to perform addition,subtraction and multiplication between two integers.

- Display the results(**Note:** ​To display float results using basic calculator.)