**Shell Scripting**

**Multiple Choice And Theory Question**

**1]** How can you find out how long the system has been running?

**a. Command “uptime”**

b. Command “time”

c. Command “datetime”

d. None

**2] How to get input from the terminal for shell script**?

a. 'input' command

**b. 'read' command**

c. 'echo' command

d. None

**3] What is the use of “$?” sign in shell script**?

a. Print the name of the shell.

b. No. of arguments to a shell script.

**c. Check whether previous command is executed successfully or not**

d. None

**4] What are the redirect options to use for sending both standard output and standard error to the same location**?

a. 2 >&

b. &>

c. 2>&1

**d. Both b and c**

**5]** How to display all array indexes at once?

**a. echo ${!array[@]}**

b. echo ${array[\*]}

c. echo ${array[@]}

d. None

**6]** What is the difference between $$ and $!?

a. $$ gives the last error code of the currently executing process whereas $! returns the exit code of the process that recently went into background.

b. $$ gives the no. of arguments of the currently executing process whereas $! holds the list of arguments of the process that recently went into background.

**c. $$ gives the process id of the currently executing process whereas $! shows the process id of the process that recently went into background.**

d. None

**7] Given a file find the count of lines containing word “ABC”**

a. grep c- “ABC” file1

**b. grep -c “ABC” fle1**

c. grep c “ABC” file1

d. None

**8]** How to remove array element with id 3?

a. remove array[2]

b. unset array[2]

c. remove array[1]

**d. unset array[3]**

**9]** How to add new array element with id 99?

a. array[98]="New\_element"

b. set array[99]="New\_element"

**c. array[99]="New\_element"**

d. None

**10] How can you set the default rwx permission to all users on  every file which is created in**

**the current shell?**

a. umask 555

b. umask 666

**c. umask 777**  
 d. Umask 888

11] What is the use of $# in shell scripting?

a. Exit code of the shell script.

b. Error code of the command last executed.

**c. Count of the arguments passed to a shell script**

d. None

12] How to display the first element of an array?

a. echo array[1]

b. echo ${array[1]}

**c.** **echo ${array[0]}**

d. echo array[0]

13] How to define array in shell script?

a. array=["Hello" "We" "are" "TechBeamers"]

b. array=("Hello" "We" "are" "TechBeamers")

c. array="Hello","We" "are","TechBeamers"

d. array={"Hello" "We" "are" "TechBeamers"}

14] How to debug a shell script?

a. sh -x testscript.sh

b. sh -d testscript.sh

c. sh -nv testscript.sh

**d.** **Both a and c**

15] What is the correct comparison statement in Linux shell Scripting?

a. if ( $x -gt $y )

b. if [ $x -gt $y ]

c. if $x -gt $y

d. None

**Theory Question**

**1] Write a program to find prime number between 1 to 100 using shell scripting**

**2] Write a calculator program using switch case [Addition , Substraction , division ,and Multiplication].**

**3] Write a program to find the given number is palindrome or not using shell scripting.**

**4] Write a program to sort a array in asending order using shell scripting.**

**5] Write a program to find the number of words in a string using shell scripting.**

**6] Wite a program to reverse a array elements using shell scripting.**

**7] Write a program to delete repeating elements in array.**

**8] What is Bash ? What is chmod ? What are all possible modes ? How to chnage the mode ?**

**9] Write a program to reverse a string using shell scripting**

**10] Write a program to find factorial of given number using shell scripting**

**Solution**

**1] Write a program to find prime number between 1 to 100 using shell scripting**

**#!/bin/bash**

**echo "Enter the min Start of range:"**

**read -p "Min=>" min**

**echo "Enetr the max range:"**

**read -p "Max=>" max**

**for((index1=1;index1<=$max;index1++))**

**do**

**flag=0**

**for((index2=2;index2<=`expr $i / 2`;index2++))**

**do**

**if [ `expr $index % $index` -eq 0 ]**

**then**

**flag=1**

**fi**

**done**

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

**then**

**echo "$index1"**

**fi**

**done**

**2] Write a calculator program using switch case [Addition , Substraction , division ,and Multiplication].**

**#!/bin/bash**

**echo "Enetr the two number to do mathematical operation:"**

**read -p "Number1=>" number1**

**read -p "Number2=>" number2**

**echo "Enetr the choice 1] Add 2]Sub 3]mul 4]Div "**

**read -p "Choice=>" choice**

**case "$choice" in**

**Add | add) echo "Addtion = `expr $number1 + $number2`";;**

**Sub | sub) echo "Substration= `expr $number1 - $number2`";;**

**Mul| mul) echo " Multiplication= `expr $number1 \\* $number2`";;**

**Div | div) echo "Division= `expr $number1 / $number2`";;**

**\*) echo "Answer not recognized";;**

**esac**

**3] Write a program to find the given number is palindrome or not using shell scripting.**

**#!/bin/bash**

**echo "Enter a number:"**

**read -p "Number=>" number**

**temp=$number**

**reverse=0**

**while [ $temp -ne 0 ]**

**do**

**modulus=`expr $temp % 10`**

**mul=`expr $reverse \\* 10`**

**reverse=`expr $mul + $modulus`**

**temp=`expr $temp / 10`**

**done**

**if [ $number -eq $reverse ]**

**then**

**echo "Palindrome"**

**else**

**echo "Not a palindrome"**

**fi**

**4] Write a program to sort a array in asending order using shell scripting.**

**#!/bin/bash**

**echo "Enetr the length of array:"**

**read -p "length=>" length**

**for(( index1=0;index1< $length;index1++))**

**do**

**echo "Enetr `expr $index1 + 1`"**

**read array[$index1]**

**done**

**for(( index1=0;index1< $length;index1++))**

**do**

**for(( index2=`expr $index2 + 1`;index2< $length;index2++))**

**do**

**if [ ${array[$index1]} -gt ${array[$index2]} ]**

**then**

**temp=${array[$index1]}**

**array[$index1]=${array[$index2]}**

**array[$index2]=$temp**

**fi**

**done**

**done**

**echo "Array asendig order :"**

**for(( index1=0;index1< $length;index1++))**

**do**

**echo array[$index1] = ${array[$index1]}**

**done**

**5] Write a program to find the number of words in a string using shell scripting.**

**#/bin/bash**

**echo "Enetr the input string:"**

**read -p "string=>" string**

**echo $string | wc -w**

**6] Wite a program to reverse a array elements using shell scripting.**

**#/bin/bash**

**echo "Enter the array length:"**

**read -p "length=>" length**

**echo "Enetr the array element:"**

**for (( index1=0;index1< $length;index1++ ))**

**do**

**echo "Enter `expr $index1 + 1`:"**

**read array[$index1]**

**done**

**for(( index1=0, index2=`expr $length - 1` ; index2 > index1;index1++,index2-- ))**

**do**

**temp=${array[$index1]}**

**array[$index1]=${array[$index2]}**

**array[$index2]=$temp**

**done**

**echo "reverse array element:"**

**for((index1=0;index1< $length ; index1++))**

**do**

**echo "array[$index1]=${array[$index1]}"**

**done**

**7] Write a program to delete repeating elements in array.**

**#!/bin/bash**

**echo "Enter array length:"**

**read -p "length=>" length**

**echo "Enetr the array element:"**

**for((index1=0;index1< $length;index1++))**

**do**

**echo "Enetr array [$index1]:"**

**read array[$index1]**

**done**

**flag=0**

**for((index1=0;index1< $length;index1++))**

**do**

**for((index2=`expr $index1 + 1`;index2 < $length;index2++))**

**do**

**if [ ${array[$index1]} -eq ${array[$index2]} ]**

**then**

**flag=1**

**length=`expr $length - 1`**

**for((index3=$index2 ; index3 < $length ; index3++))**

**{**

**array[$index3]=${array[`expr $index3 + 1`]}**

**}**

**else**

**index2= `expr $index2 + 1`**

**fi**

**done**

**done**

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

**then**

**echo "No duplicate"**

**else**

**for((index1=0;index1<`expr $length - 1`; index1++))**

**do**

**echo "array[$index1]=${array[$index1]}"**

**done**

**fi**

**8] What is Bash ? What is chmod ? What are all possible modes ? How to chnage the mode ?**

**9] Write a program to reverse a string using shell scripting.**

**#!/bin/bash**

**reverse= “ ”**

**read -p "Enter string:" string**

**length=${#string}**

**for (( index=$length-1; index>=0; index-- ))**

**do**

**reverse="$reverse${string:$index:1}"**

**done**

**echo "$reverse"**

**10] Write a program to find factorial of given number using shell scripting**

**#!/bin/bash**

**echo "Enetr number:"**

**read -p "Number" number**

**fact=1**

**var=1**

**while (( $var <= $number ))**

**do**

**fact=$(( $var \* $fact ))**

**var= `expr $var + 1`**

**done**

**echo "factorial= $fact"**