Ex. No: 5

FINDING OUT SUM

Aim

To write a shell script that accepts a numerical value N and to find out sum.

Algorithm

1. Read n
2. Set i=0, sum=0
3. While (i< n), do the following.
   i) i=i+1
   ii) sum=sum+i
4. Repeat step 2 until i < n is true
5. Print sum
6. Stop

Program

```
echo -n "Enter the value of N: "
read n
i=0
sum=0
while [ $i -lt $n ]
do
  (( i=i + 1 ))
  (( sum=sum + i ))
done
echo "Sum of first $n numbers = $sum"
```

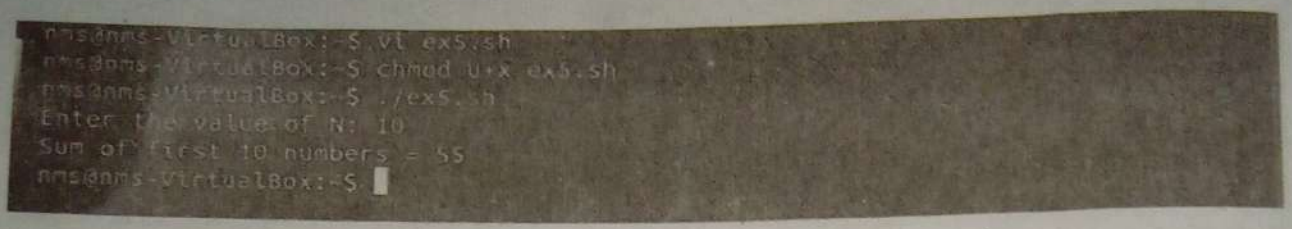
Execution procedure

Create a new vi or gedit editor file ex1.sh. Enter the script in the editor. After entering press **Esc** key to switch to command mode. A **:** appears at left bottom corner of the window. There, type **wq** for saving the program and quiting from the editor. The program file name should be with **.sh** extension. For executing the program, give the command as

```
$chmod u+x ex5.sh
$./ex5.sh
```

By giving the above commands, the script will be executed and the output will be obtained.

Sample output



Result

Thus the above shell script is executed successfully and the output is obtained.

Ex. No: 6

FACTORIAL OF A GIVEN NUMBER

Aim

To write a shell script to find the factorial of a given number.

Algorithm

1. Read n
2. Set fact=1, i=1
3. While(i<=n), do the following.
   i) fact = fact * i
   ii) i = i + 1
4. Repeat step 2 until i<=n is true
5. Print fact
6. Stop

Program

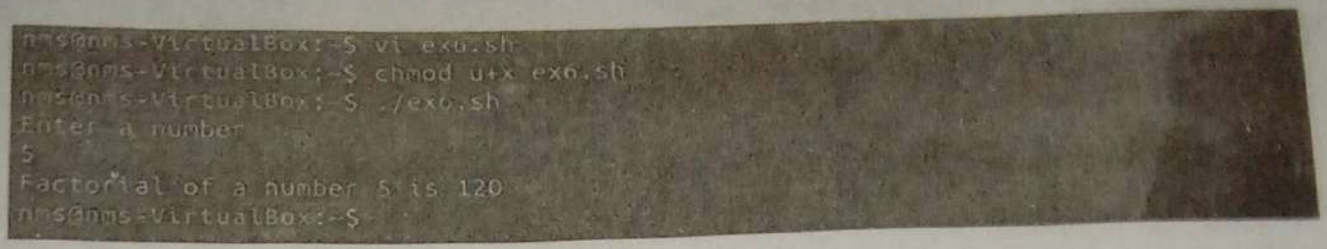
```
echo "Enter a number"
read n
fact=1
i=1
while [ $i -le $n ]
do
  (( fact=fact * i ))
  (( i=i + 1 ))
done
echo "Factorial of a number $n is $fact"
```

Execution procedure

$chmod u+x ex6.sh

$./ex6.sh

Sample output



Result

Thus the above shell script is executed successfully and the output is obtained.

Ex. No: 7

ARITHMETIC CALCULATOR

Aim

To write a shell script to perform arithmetic calculator using case statement.

Algorithm

1. Read the two operand values a and b.
2. Display the menu as
   a) Addition
   b) Subtraction
   c) Multiplication
   d) Division
3. Print "Enter your choice".
4. Read your choice c among 1, 2, 3, 4
5. Check c using case statement.

   if 1 $\Rightarrow$ s = a + b

   if 2 $\Rightarrow$ s = a – b

   if 3 $\Rightarrow$ s = a * b

   if 4 $\Rightarrow$ s = a/b
6. Print the result s.
7. Stop.

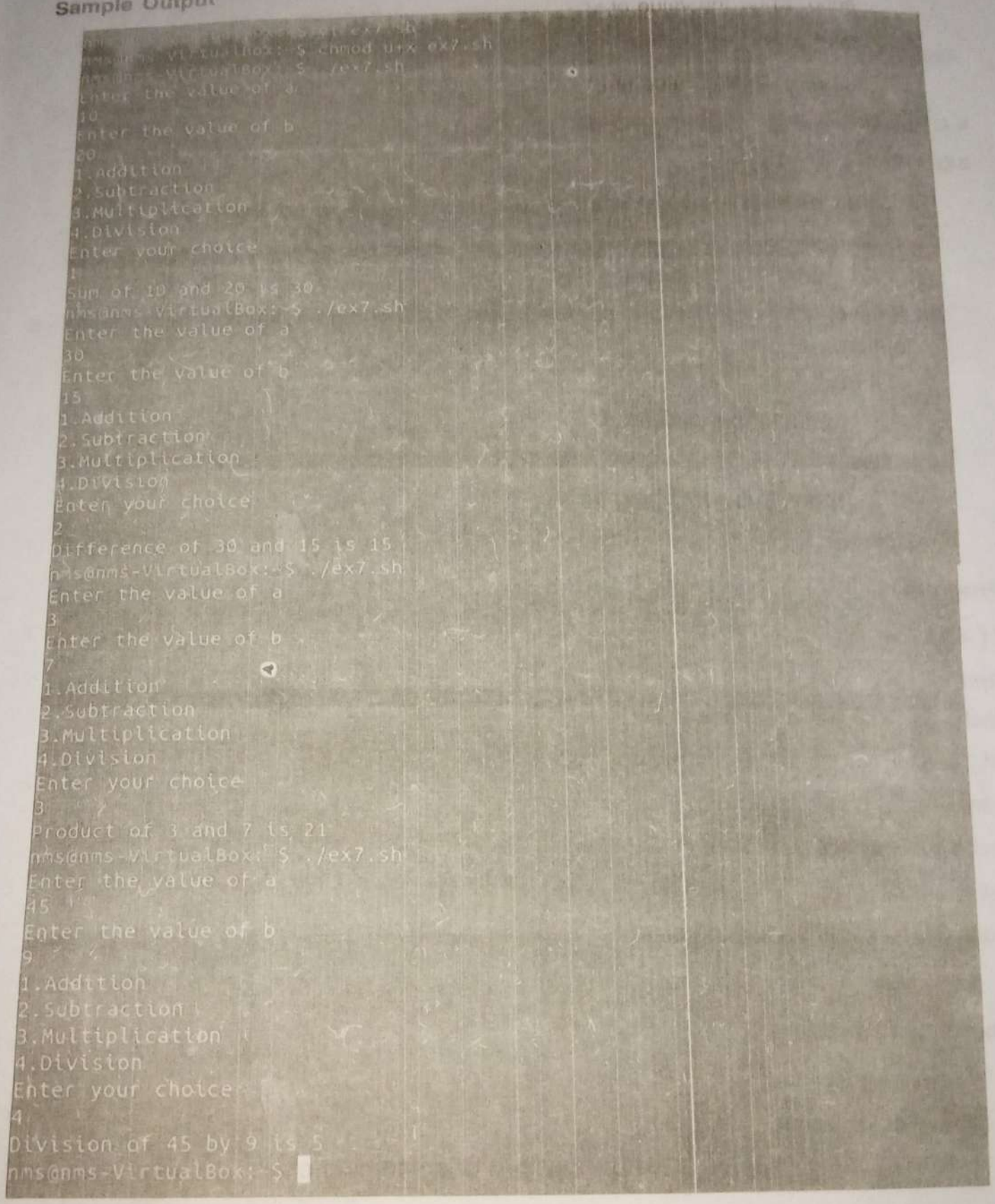
Program

```
echo "Enter the value of a"
read a
echo "Enter the value of b"
read b
echo "1.Addition"
echo "2.Subtraction"
echo "3.Multiplication"
echo "4.Division"
echo "Enter your choice"
read c
case $c in
        1) (( s = $a + $b ))
        echo "Sum of $a and $b is $s " ;;
        2) (( s = $a - $b ))
        echo "Difference of $a and $b is $s" ;;
        3) (( s = $a \* $b ))
        echo "Product of $a and $b is $s" ;;
        4) (( s = $a / $b ))
        echo "Division of $a by $b is $s" ;;
esac
```

Execution Procedure

```
$chmod u+x ex7.sh
$./ex7.sh
```

Sample Output



Result

Thus the shell script for arithmetic calculator is developed using case statement, executed and the output is obtained.

Pro

Ex. No: 8

USING COMMAND LINE ARGUMENTS

Aim

To write a shell script that takes a command line argument and reports on whether it is a directory, a file or something else.

Algorithm

1. Check whether the command line argument1 is a file or not using –f option.
2. If true
   print 'It is an ordinary file'.
3. If false, check whether the command line argument1 is a directory or not using -d option.
   - If true
     print 'It is a directory'.
     else
     print 'It is something else'.
4. Stop.

Program

```
if [ -f $1 ]
then
 echo $1 "---> It is an ordinary file"
elif [ -d $1 ]
then
 echo $1 "---> It is a directory"
else
 echo $1 "---> It is something else"
fi
```

Execution Procedure

$chmod u+x ex8.sh

$./ex8.sh name

where "name" may be a file or directory or something else.