OC - Fall 2018 (IIIT Sri City)

Practice Assignment 6

1. Write the output of the following bash program with justification:

```
#!/bin/bash
a=2334;let "a += 1";echo "a = $a";
b=${a/23/BB};echo "b = $b";
let "b += 1";echo "b = $b";
c=BB34;echo "c = $c";
d=${c/BB/23};echo "d = $d";
let "d += 1";echo "d = $d";
e='';echo "e = $e";
let "e += 1";echo "e = $e";
echo "f = $f";
let "f += 1";echo "f = $f";
```

2. Write a bash shell script that reads a string from keyboard and validate whether the input is an email id or not.

3. Write a bash shell script that takes 2 dates (in the form of dd/mm/yyyy) and displays the difference between these two dates in terms of number of years, months and days.

4. Write a bash script that changes all file/sub-directory names in the current directory to uppercase. After running your program show the output using ls command.

5. Write a bash script that takes two inputs as command line arguments; the first input is a pattern and the second input is a file/directory name; the program finds whether the given pattern is present in the given file/directory name or not; if pattern is found and second input is a file then append the sentence “Pattern found in file name” in that file; if pattern is found and second input is a directory then create a file inside this directory with the name of first input (i.e. with the name of pattern given) and write the content “Pattern found in directory name” in this created file.

6. Write a bash script that takes any number as the input and print that number in words. For example: if input number is “739” the output is “Seven Three Nine”.

7. What will be the output of following script:

```
#!/bin/bash
COUNTER=20
while [ $COUNTER –lt 10 ];
do
        echo COUNTER $COUNTER
        let COUNTER=$COUNTER-1
done
```

   Explain your answer.

8. Write a bash script to find the prime factors of any number. For example, the prime factor of 20 is 2,2,5 such that 2×2×5=20.

9. Write the script using while loop to generate the following output:

```
0
1 0
2 1 0
3 2 1 0
4 3 2 1 0
5 4 3 2 1 0
6 5 4 3 2 1 0
7 6 5 4 3 2 1 0
8 7 6 5 4 3 2 1 0
9 8 7 6 5 4 3 2 1 0
```

10. Write a bash shell script using function to calculate the factorial of a number.

11. A lucky number is one whose individual digits add up to 7, in successive additions. For example, 62431 is a lucky number (6 + 2 + 4 + 3 + 1 = 16, 1 + 6 = 7). Write a bash script to check whether a given number is lucky number or not.

12. An Armstrong number is an integer such that the sum of the cubes of its digits is equal to the number itself. For example, 371 is an Armstrong number since $(3)^3$ + $(7)^3$ + $(1)^3$ = 371. Write a bash script to find and print Armstrong numbers between 1 and 10000.

13. A perfect number is a positive integer that is equal to the sum of its proper positive divisors, that is, the sum of its positive divisors excluding the number itself. The first perfect number is 6, because 1, 2, and 3 are its proper positive divisors, and 1 + 2 + 3 = 6. Write a bash script to check whether a given number is perfect number or not.

14. A palindrome is a word, phrase, number, or other sequence of characters which reads the same backward or forward. For example word “eye” is a palindrome. Write a bash script to check whether a given string is palindrome or not.