NATIONAL UNIVERSITY OF SCIENCE AND TECHNOLOGY

SCHOOL OF MECHANICAL AND MANUFACTURING ENGINEERING

CS-114 - Fundamental of Programing

LAB MANUAL # 6 (Home Task)

ME -15 (C)

SUBMITTED BY:

MOHAMMAD GULZAIB

SUBMITTED TO:

SIR M. AFFAN

1. **Write a program using break or continue statement that only adds prime numbers from 1 to 50 and display the sum on screen.**

Code:

```
#include<iostream>
using namespace std;
int main(){
    int b=0,r=0;
    for(int i=2;i<=50;i++)    //for loop to go from 1 to 50
    {
        for(int j=2;j<i;j++){ //for loop for divisor to go 1 less than i
            if(i%j!=0){       //if i is not completed divided by j then the loop will continue skipping the next statements
            continue;}
            b++;              //when i will be fully divided by j then b will be increased by 1

        }
        if(b==0){             //b will only be zero when there would be prime number because we have removed 1 and the number itself in previous loop
            if(i>45)          //for output because after 45 only 47 comes so it will comes out with equal
            cout<<i<<" = ";
            else
            cout<<i<<" + ";   //for all others less than 45 will be printed with +
            r=r+i;
    }
       b=0;                  //reassign 0 to b for next itteration
    }

    cout<<r;                  //sum output
    return 0;
}
```

Result:

```
2 + 3 + 5 + 7 + 11 + 13 + 17 + 19 + 23 + 29 + 31 + 37 + 41 + 43 + 47 = 328
--------------------------------
Process exited after 0.2436 seconds with return value 0
Press any key to continue . . .
```

2. **Write a program in C++ to create the following pattern.**

Code:

```
#include<iostream>
using namespace std;
int main(){
    for(int i=1;i<=5;i++) //as the max rows are 5
    {
        for(int j=1;j<=i;j++){  //as the number of output in each row is equal to number of row
            cout<<j<<" ";
        }
        cout<<endl;             //after each row completed it will transfer it to next line
    }
    return 0;
}
```

Result:

```
1
1 2
1 2 3
1 2 3 4
1 2 3 4 5

--------------------------------
Process exited after 0.2913 seconds with return value 0
Press any key to continue . . .
```

3. Write a C++ program to print:

Code:

```
#include<iostream>
using namespace std;
int main(){
    int b=0;
    cout<<"1"<<endl;     //for first number of the pattern
    for(int i=1;i<=6;i++)  //as the odd numbers are not in output but if they would be included then the rows would be 6
    {
        if(i%2==0){        //as remaining numbers are even so by using if only even numbers will be shown in output
            for(int j=1;j<=i;j++){
                cout<<i<<" ";
            }
        }
        cout<<endl;
    }
    return 0;
}
```

Result:

```
1

2 2

4 4 4 4

6 6 6 6 6 6

--------------------------------
Process exited after 0.2952 seconds with return value 0
Press any key to continue . . .
```