

**CS-114 – Fundamental of Programing**

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**LAB MANUAL #5**

**LAB TASK**

**ME 15 Section B**

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## Task 1:

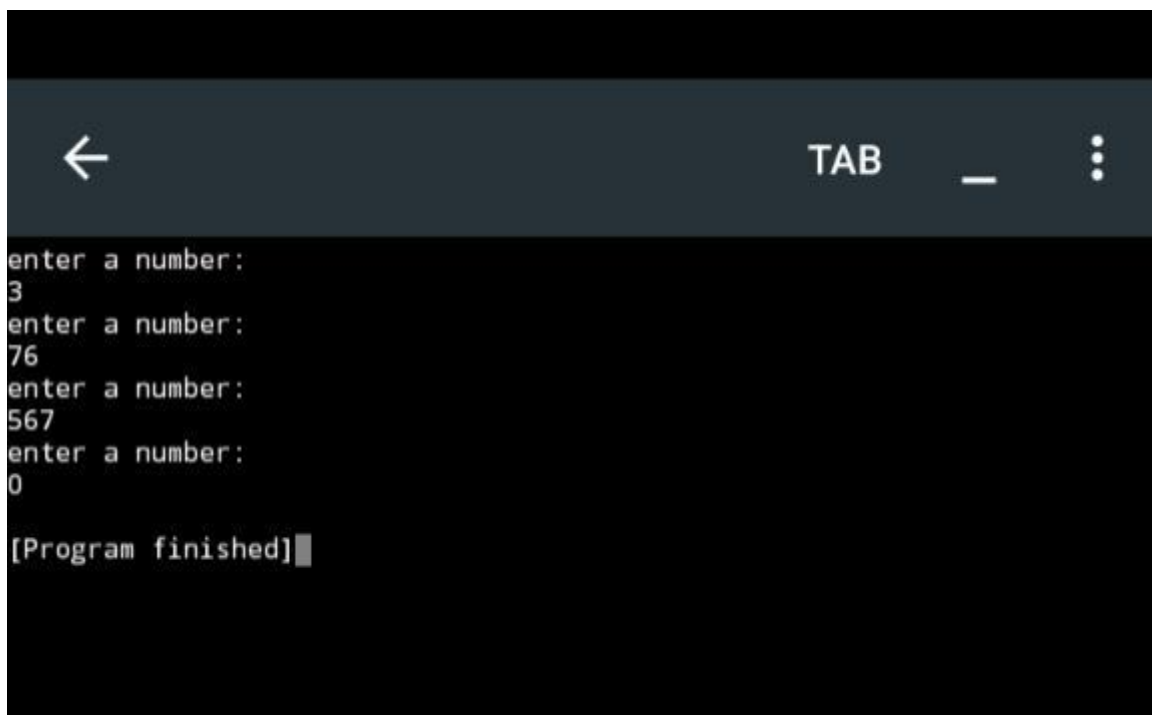
Code:

```
#include<iostream>

using namespace std;

int main()
{
    int x=1;
    do{
        cout<<"enter a number: "<<endl;
        cin>>x;
    }
    while(x>0);
}
```

Output Screen :

A screenshot of a terminal window with a dark background. The window has a title bar with a back arrow, the text 'TAB', and a vertical ellipsis. The terminal output shows the program repeatedly asking 'enter a number:' and receiving inputs 3, 76, 567, and 0. After the input 0, the message '[Program finished]' is displayed with a cursor at the end.

```
enter a number:
3
enter a number:
76
enter a number:
567
enter a number:
0
[Program finished]
```

## Task 2:

Code:

```
#include<iostream>
#include<math.h>
using namespace std;
int main()
{
    int n1, n2, res, a;
    char op;
    do{
        cout<<"Enter two numbers: "<<endl;
        cin>>n1>>n2;
        cout<<"select the operation you want to perform: Enter \n '+' for addition \n '-' for
subtraction \n '/' for division \n '%" for finding the remainder\n '*' for multiplication \n '^' for
power"<<endl;
        cin>>op;
        switch (op)
        {
            case '+' : res=n1+n2;
            break;
            case '-' : res=n1-n2;
            break;
            case '*' : res=n1*n2;
            break;
            case '/' : res=n1/n2;
            break;
            case '%" : res=n1%n2;
            break;
            case '^' : res=pow(n1, n2);
            break;
            default: cout<<"Enter a valid character."<<endl;
        }
        cout<<"The result is: "<<res<<endl;
        cout<<"Press 1 if you want to calculate again. Press 0 if you want to
terminate"<<endl;
        cin>>a;

    }
    while(a!=0);
}
```

Output Screen:

```
Enter two numbers:
67
34
select the operation you want to perform: Enter
'+' for addition
 '-' for subtraction
 '/' for division
 '%' for finding the remainder
 '*' for multiplication
 '^' for power
*
The result is: 2278
Press 1 if you want to calculate again. Press 0 if you want to terminate
1
Enter two numbers:
16
2
select the operation you want to perform: Enter
'+' for addition
 '-' for subtraction
 '/' for division
 '%' for finding the remainder
 '*' for multiplication
 '^' for power
^
The result is: 256
Press 1 if you want to calculate again. Press 0 if you want to terminate
0

[Program finished]
```

### Task 3:

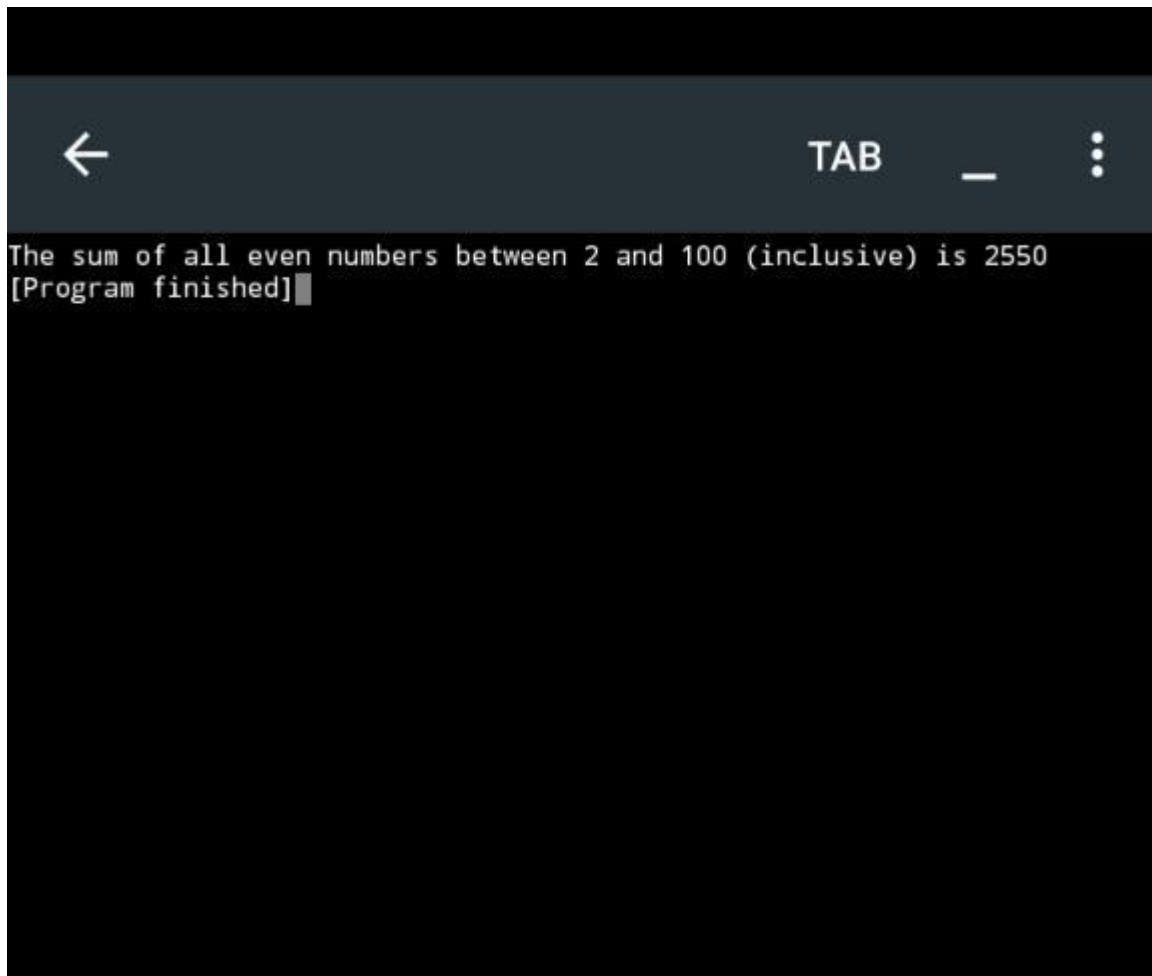
Part a:

Code:

```
#include<iostream>
using namespace std;
int main()
{
    int e=2, sum=0 ;
    while(e<=100)
    {
        sum = sum+e;
        e=e+2;
    }
    cout<<"The sum of all even numbers between 2 and 100 (inclusive) is "<<sum;

}
```

Output Screen:

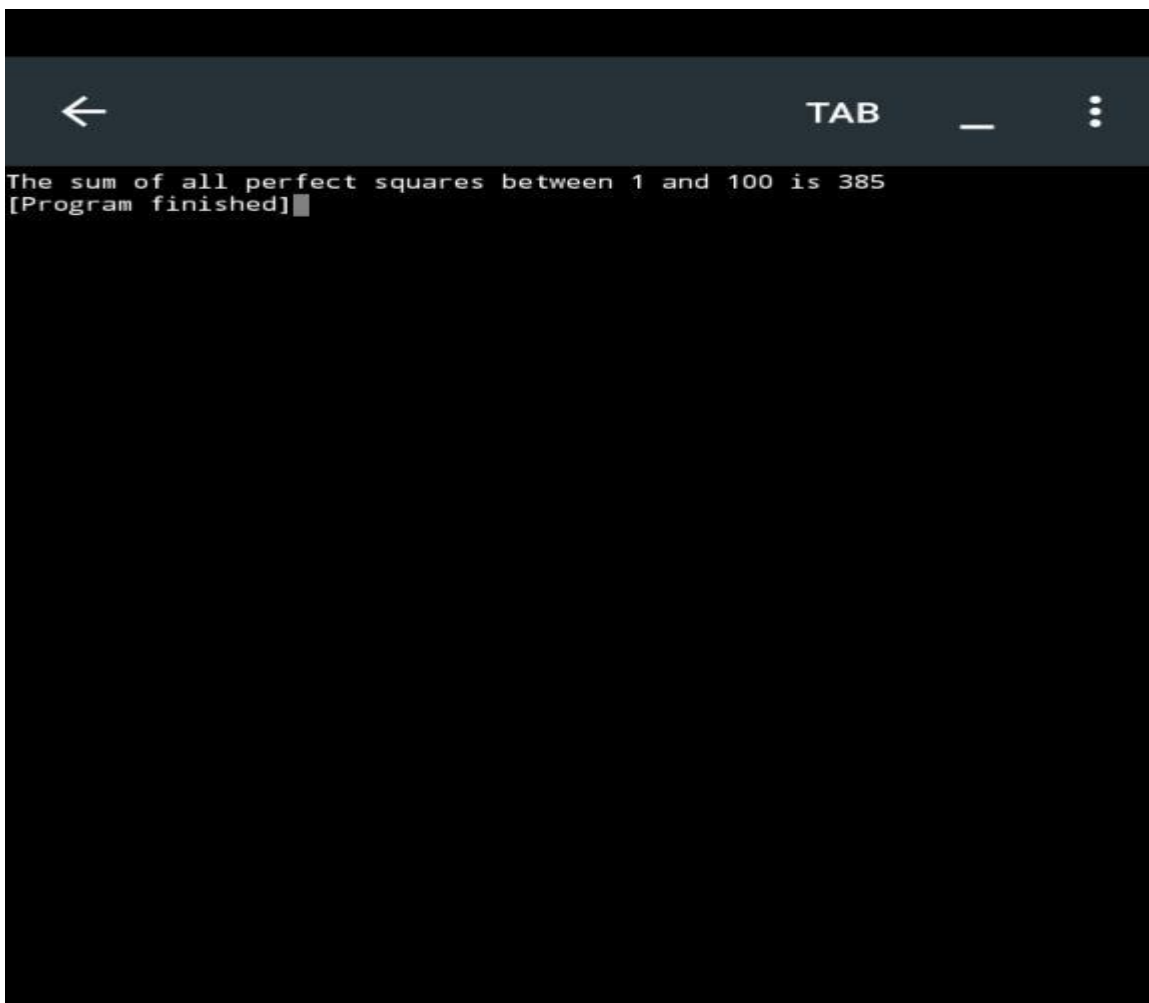
A screenshot of a terminal window with a dark background. The window has a title bar at the top with a back arrow icon on the left, the text 'TAB' in the center, and a minus sign and three vertical dots on the right. The terminal content shows the output of the program: 'The sum of all even numbers between 2 and 100 (inclusive) is 2550' followed by '[Program finished]' and a cursor. The text is in a light-colored monospace font.

Part b:

Code:

```
#include<iostream>
#include<math.h>
using namespace std;
int main()
{
    int sum=0 , n=1, sqr;
    while(n<=100)
    {
        sqr=sqrt(n);
        if(n-pow(sqr, 2)==0)
            sum=sum+n;
        n++;
    }
    cout<<"The sum of all perfect squares between 1 and 100 is "<<sum;
}
```

Output Screen:



```
The sum of all perfect squares between 1 and 100 is 385
[Program finished]
```

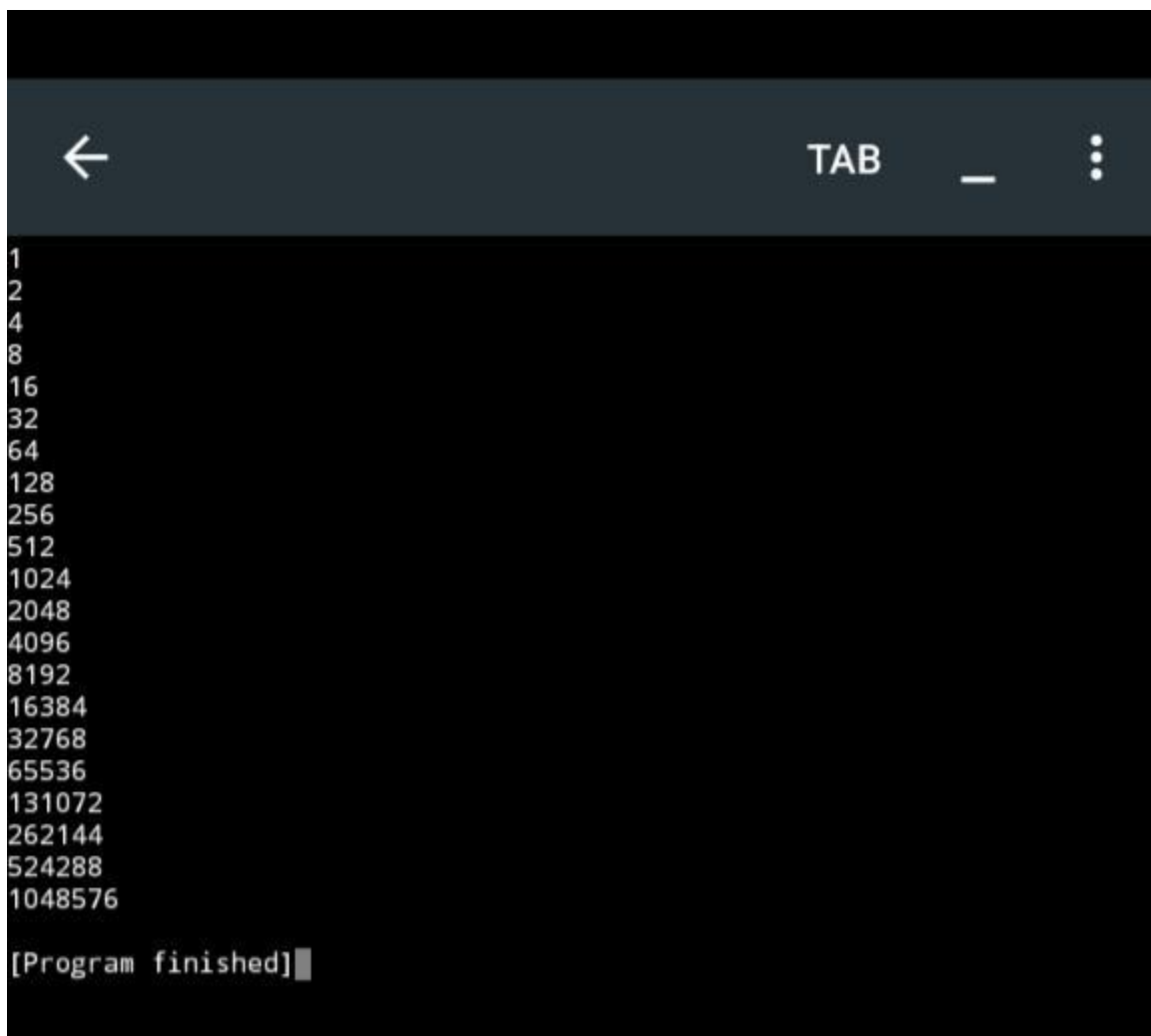
## Task 4:

Part a:

Code:

```
#include<iostream>
#include<math.h>
using namespace std;
int main()
{
    int p=0, res;
    while(p<=20)
    {
        res=pow(2,p);
        cout<<res<<endl;
        p++;
    }
}
```

Output screen:



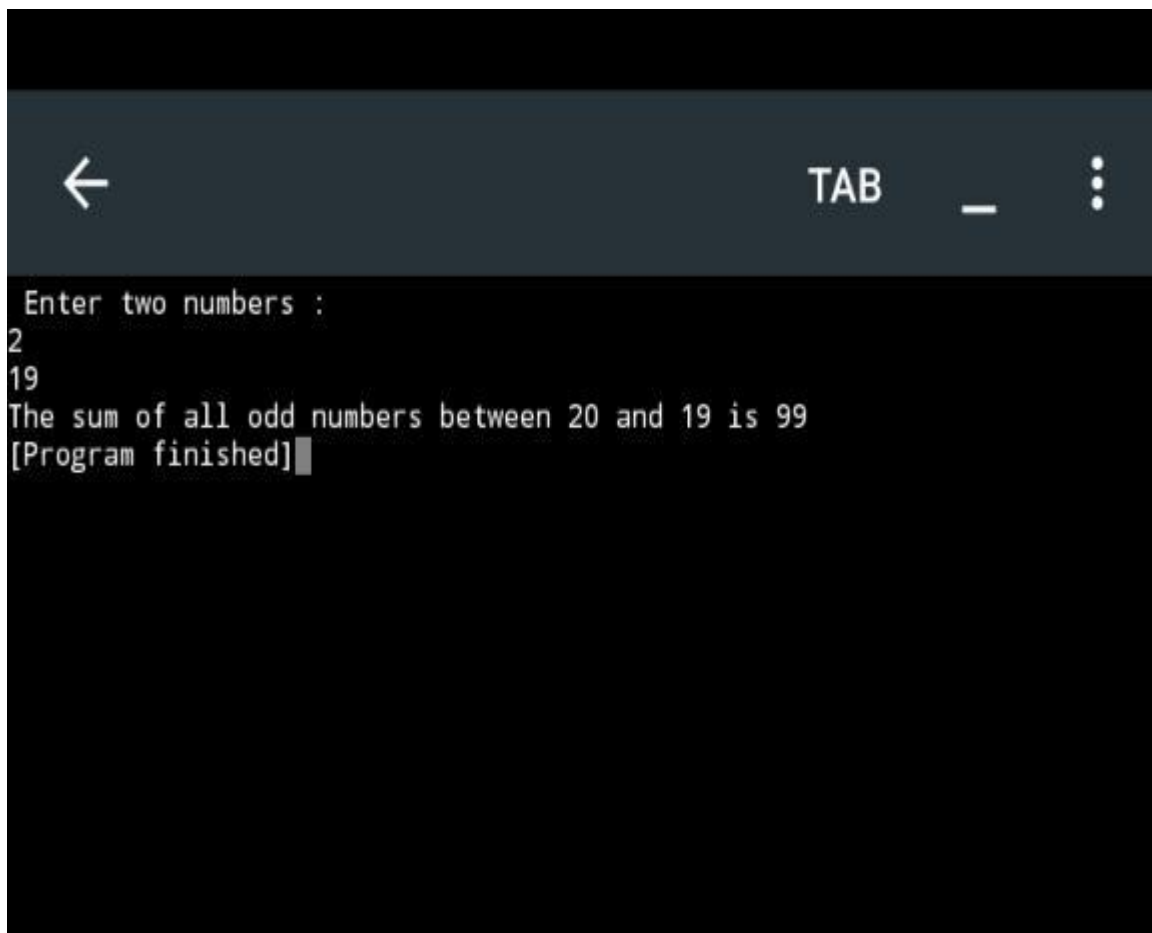
```
← TAB _ ⋮
1
2
4
8
16
32
64
128
256
512
1024
2048
4096
8192
16384
32768
65536
131072
262144
524288
1048576
[Program finished]
```

Part b:

Code:

```
#include<iostream>
#include<math.h>
using namespace std;
int main()
{
    int n1, n2, sum=0;
    cout<<" Enter two numbers : "<<endl;
    cin>>n1>>n2;
    while(n1<=n2)
    {
        if(n1%2!=0)
            sum=sum+n1;
        n1++;
    }
    cout<<"The sum of all odd numbers between "<<n1<<" and "<<n2<<" is "<<sum;
}
```

Output Screen:

A screenshot of a terminal window with a dark background. The window has a title bar with a back arrow, the word "TAB", and a vertical ellipsis. The terminal text shows the program's execution: it prompts for two numbers, receives 20 and 19, calculates the sum of odd numbers in that range (99), and displays the result before finishing.

```
Enter two numbers :
20
19
The sum of all odd numbers between 20 and 19 is 99
[Program finished]
```