

**INDIAN INSTITUTE OF SPACE SCIENCE AND TECHNOLOGY  
THIRUVANANTHAPURAM 695 547**

**First Year B. Tech. - Tuorial Sheet  
MA122-Computer Programming and Applications**

10.02.2017

Tutorial 1

1. Use for loops to construct a program that displays a pyramid of Xs on the screen. The pyramid should look like this

```
X
XXX
XXXXX
XXXXXXX
XXXXXXXXX
```

2. Write a program that reads a six digit integer and prints the sum of its six digits.
3. Write a program which takes a nonzero positive integer  $n$  from user and uses a while loop to compute and print sum of squares of integers from one to  $n$ . (For example, if 5 is input, then program will calculate  $1^2 + 2^2 + 3^2 + 4^2 + 5^2$  and print 55.)
4. Write a program to find if given number is a power of 2.
5. What is the output of the following programs:

- (a) (Note: When outputting floating point numbers, cout has a default precision of 6 and type float has a precision of 7 significant digits.)

```
1 #include <iostream>
2 int main()
3 {
4     using namespace std;
5     float fValue = 123456789.0f;
6     cout << fValue << endl;
7     fValue = 111.22222222222222f;
8     cout << fValue << endl;
9     return 0;
10 }
```

(b)

```
1 #include<iostream>
2 int main()
3 {
4     using namespace std;
5     int code,flag;
6     if(code==1&&flag==0)
7         cout<<code+flag<<endl;
8     return 0;
9 }
```

(c)

```
1 #include<iostream>
2 using namespace std;
3 int i=1,j=1;
4 int main()
5 {
6     int k=5,z;
7     i=(++i)%2;
8
9     (k=(j++)%2);
10
11     cout<<"i= "<<i<<" , "<<" j= "<<j<<" , "<<"k= "<<k<<" , z= "<<z<<endl;
12     return 0;
13 }
```

(d)

```
1 #include <iostream>
2 using namespace std;
3 int main()
4 {
5     int n = 15;
6     for ( ; ; )
7         cout << n;
8     return 0;
9 }
```

(e)

```
1 #include <iostream>
2 using namespace std;
3 void func(int a, bool flag = true)
4 {
5     if (flag == true ) {
6         cout << "Flag is true. a = " << a;
7     }
8     else {
9         cout << "Flag is false. a = " << a;
10    }
11 }
12 int main()
13 {
14     func(200, false);
15     return 0;
16 }
```

(f)

```
1 #include<iostream>
2
3
4 int main()
5 {
6     int no,rev=0,r,a;
7     using namespace std;
8     cout<<"Enter the num: ";
9     cin>>no;
10    a=no;
11    while(no>0)
12    {
13        r=no%10;
14        rev=rev*10+r;
15        no=no/10;
16    }
17    cout<<rev;
18    return 0;
19 }
```

6. List the errors in the following code

```

1 #include <iostream>
2 int main()
3 {
4     int z=3;
5     int x == z;
6     int y = 7;
7     cout << "\n";
8     cout << x + y << " " << x * y
9     return 0;
10 }

```

7. List the errors in the following code

```

1 #include <iostream>
2 using namespace std;
3 int main()
4 {
5     int const p = 5;
6     cout << ++p;
7     return 0;
8 }

```

8. List the errors in the following code

```

1 // function example
2 #include <iostream>
3 using namespace std;
4 int main ()
5 {
6     int z;
7     z = addition (5,3);
8     cout << "The result is " << z;
9 }
10 int addition (int a, int b)
11 {
12     int r;
13     r=a+b;
14     return r;
15 }

```