Lab Assignment

Exception Handling and Templates

1. Write a C++ program that demonstrates the use of try, catch, and throw to handle exceptions.

2. Write a program that divides two numbers. Handle exceptions for division by zero using multiple catch blocks.

3. Write the template for the following function in C++ and execute it for various datatypes

```
int MyMax(int a, int b){
return x>y?x:y;
}
```

4. Write the C++ template for the following program of Bubble sort and check the sorting of various datatype arrays:

```
void bubbleSort(int a[], int n) {
   for (int i = 0; i < n - 1; i++)
      for (int j = n - 1; i < j; j--)
         if (a[j] < a[j - 1])
           swap(a[j], a[j - 1]);
}
```

5. Write the C++ template for the following code:

```
int main(){
show(100,"hello hello");
show('k',1500);
show(1.23,2987);
}
```

6. Overload the C++ function template for the following code:

```
int main(){
show(100,"hello hello");
```

```
show(3,3);
}
```

7. Write a C++ program for class template to create a generic object with one numeric datatype variable (int, float, double, long etc) and public functions (a) constructor (b) divideBy2().

8. Write the same program as in (7) with function definitions outside the class using scope resolution operators along with class template.

9. Write a C++ program to illustrate class type with non-type parameter?