**Mid Term Paper (Spring-2022)**

**BSCS/BSIT/BSSE (Morning/Evening)**

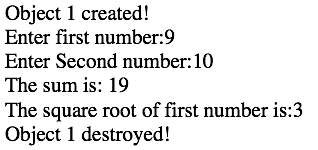
**Object Oriented Programming (CS-423)**

**Maximum Marks: 18 Total Time: 1.0 Hr**

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**Question #1: 8 Marks**

Convert the following program into class **MyMath**, where **a, b, mySum(), mySqrt() and getData()** should be members of class **MyMath**. When we run the program the following output should appear on the screen:



#include <iostream>

using namespace std;

int a=0; int b=0;

int mySum(int, int);

int mySqrt(int);

void getData();

int main()

{ getData();

cout<<"\nThe sum is:"<<mySum(a,b);

cout<<"\nThe square root of first number is:"<<mySqrt(a);

return 0;

}

**Question #2: 10 Marks**

Consider the following main function. Assuming there is no error and without changing the main function, define the required classes such that the main function compiles and execute without any error. Don’t ignore the comments written in main function:

int main() {

Child1 object1;

cout << "Private = " << object1.getPVT() << endl;

//Above line will print “Private=4”, which is value of variable ***pvt\_base*** of **Base** class.

cout << "Protected = " << object1.getProt() << endl;

//Above line will print “Protected=5”, which is value of var ***prot\_base*** of **Base** class and

//**getProt()** is a function of **Child1** class.

cout << "Public = " << object1.pub\_base << endl;

//Above line will print “Public=6”, which is the value of var ***pub\_base*** of **Base** class.

Child1 object2(7);

//Above line will initialize all the 3 data members of **Base** class with value 7.

Child2 object3;

//cout << "Private = " << object3.getPVT() << endl; //Error:int Base::getPVT()' is inaccessible

//cout << "Public = " << object3.pub\_base << endl; //Error: int Base::pub\_base' is inaccessible

Child2::display(); // Will display message **"Mid Spring 2022"**

GrandChild object4; //**GrandChild** is a child class of **Child2**

object4.getGrandParentPublic();

//Above line will print “Public=6”, which is the value of var ***pub\_base*** of **Base** class and

//**getGrandParentPublic()** is function of **GrandChild** class

return 0;

}