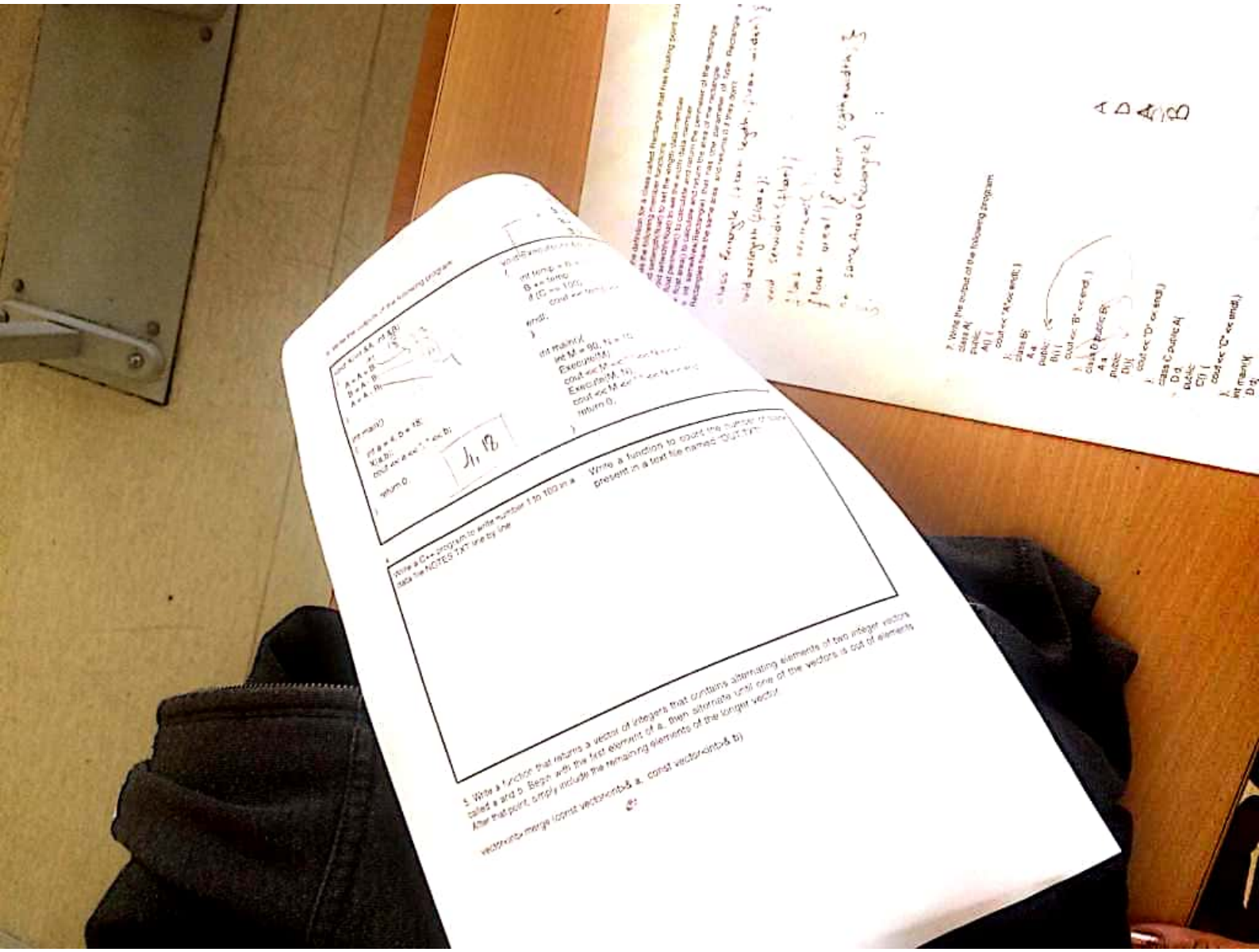
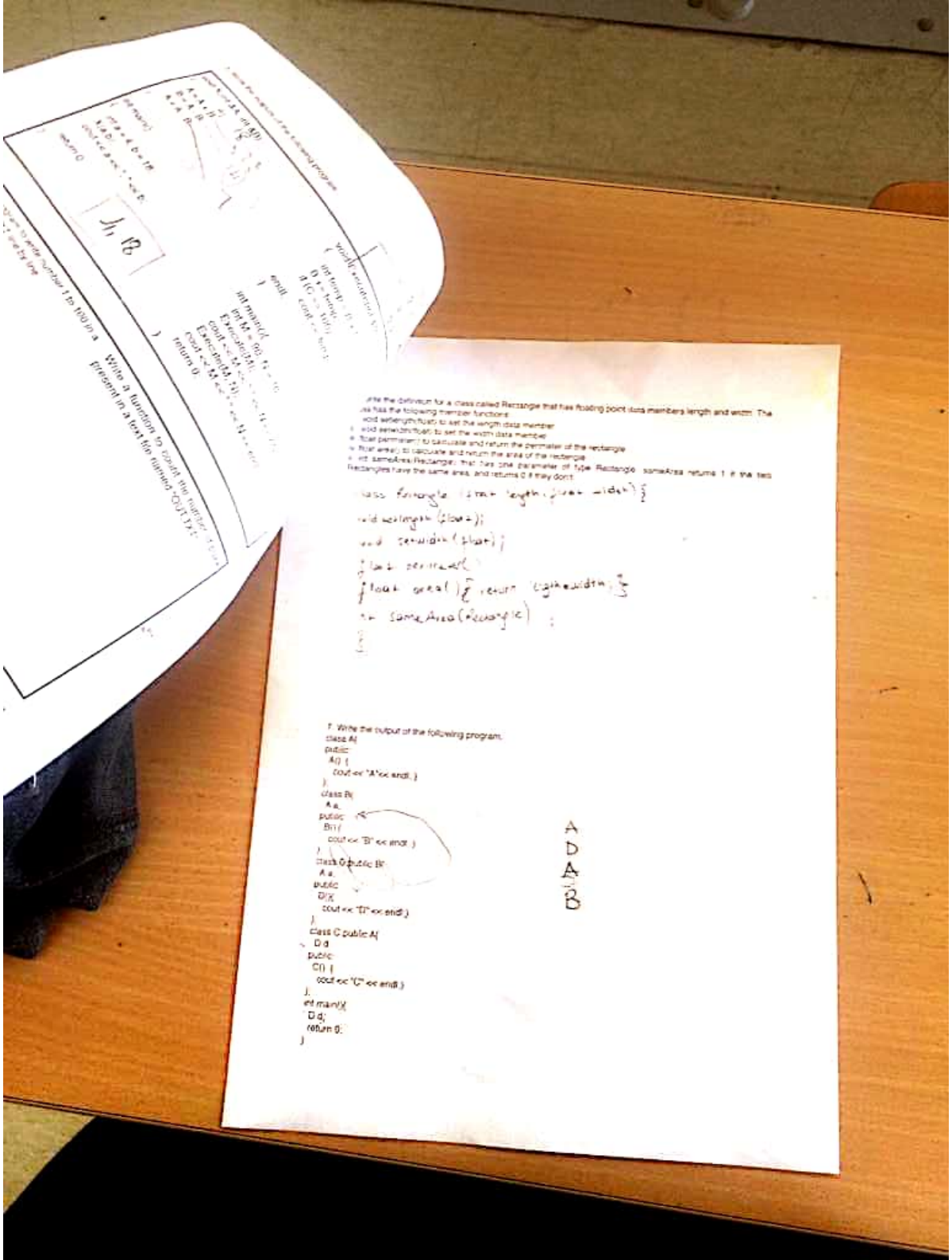




Write the definition for a class called Rectangle that has floating point data members length and width. The class has the following member functions:

- void setlength(float): to set the length data member
- void setwidth(float): to set the width data member
- float perimeter(): to calculate and return the perimeter of the rectangle
- float area(): to calculate and return the area of the rectangle
- int sameArea(Rectangle): that has one parameter of type Rectangle. sameArea returns 1 if the two Rectangles have the same area, and returns 0 if they don't

```
class Rectangle { float length; float width; };
void setlength(float);
void setwidth(float);
float perimeter()
{float area(){ return length*width;};
int sameArea(Rectangle);
};
```

7. Write the output of the following program.

```
class A{
public:
 A() {
  cout<< "A"<<endl; }
};
class B{
 A a;
public:
 B(){
  cout<< "B"<<endl; }
};
class C public B{
 A a;
public:
 C(){
  cout<< "C"<<endl;}
};
class C public A{
 D d
public:
 C(){
  cout<< "C"<<endl;}
};
int main(){
 D d;
 return 0;
}
```

A
D
A
B

COM102 Final Exam 14.06.2019

1. Consider the following declaration and answer the questions given below :

```
class PPP{
  int H;
 protected :
  int S;
 public :
  void input (int);
  void out();
};

class QQQ : private PPP{
  int T;
 protected :
  int U;
 public :
  void indata(int, int);
  void outdata();
};

class RRR : public QQQ{
  int M;
 public :
  void Set();
};
```

i. Name the base class and derived class of the class QQQ.
ii. Name the data member(s) that can be accessed from function disp().
iii. Name the member function(s), which can be accessed from the objects of class RRR.
iv. Is the member function out() accessible by the object of the class QQQ?

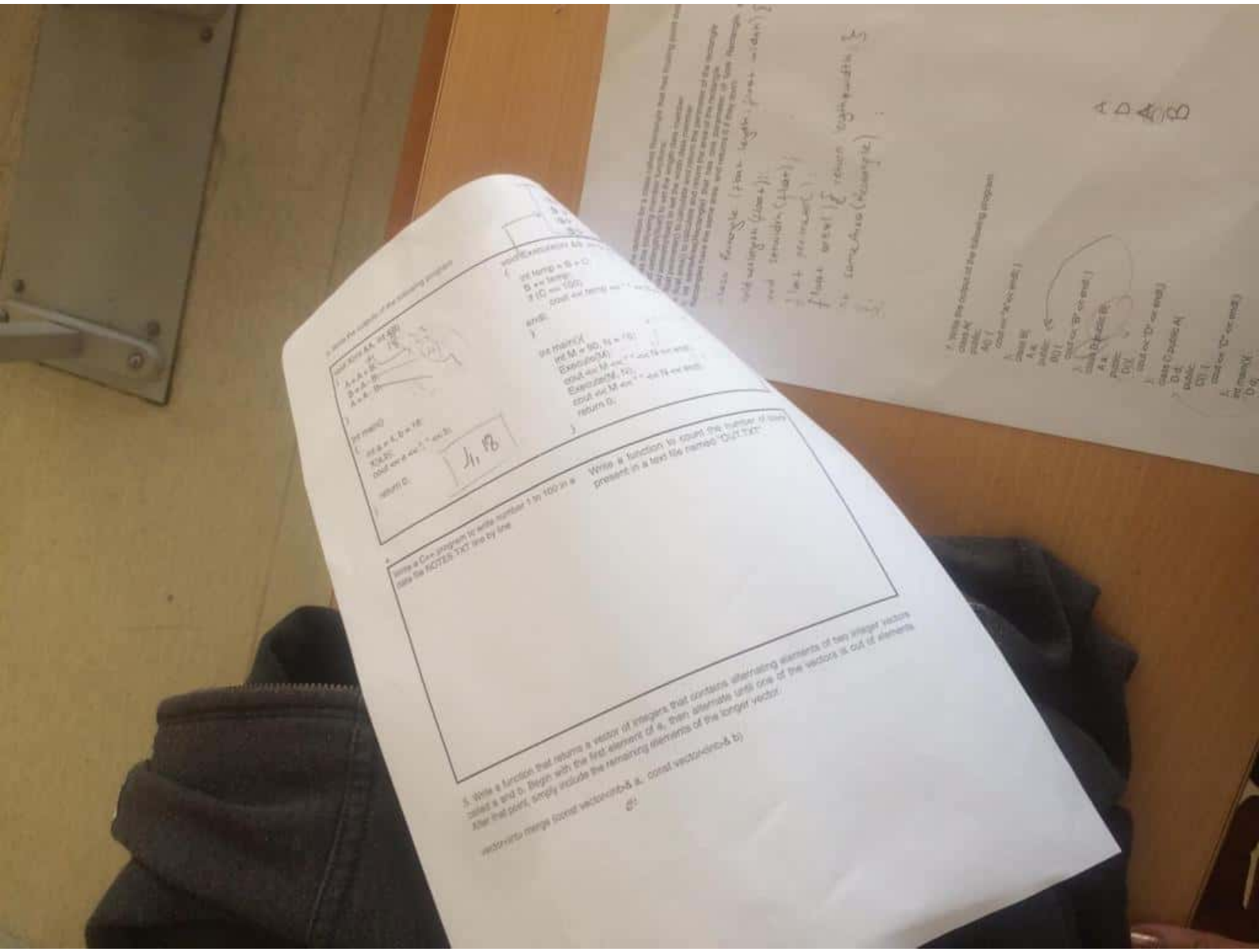
2. Consider the definition of the following class:

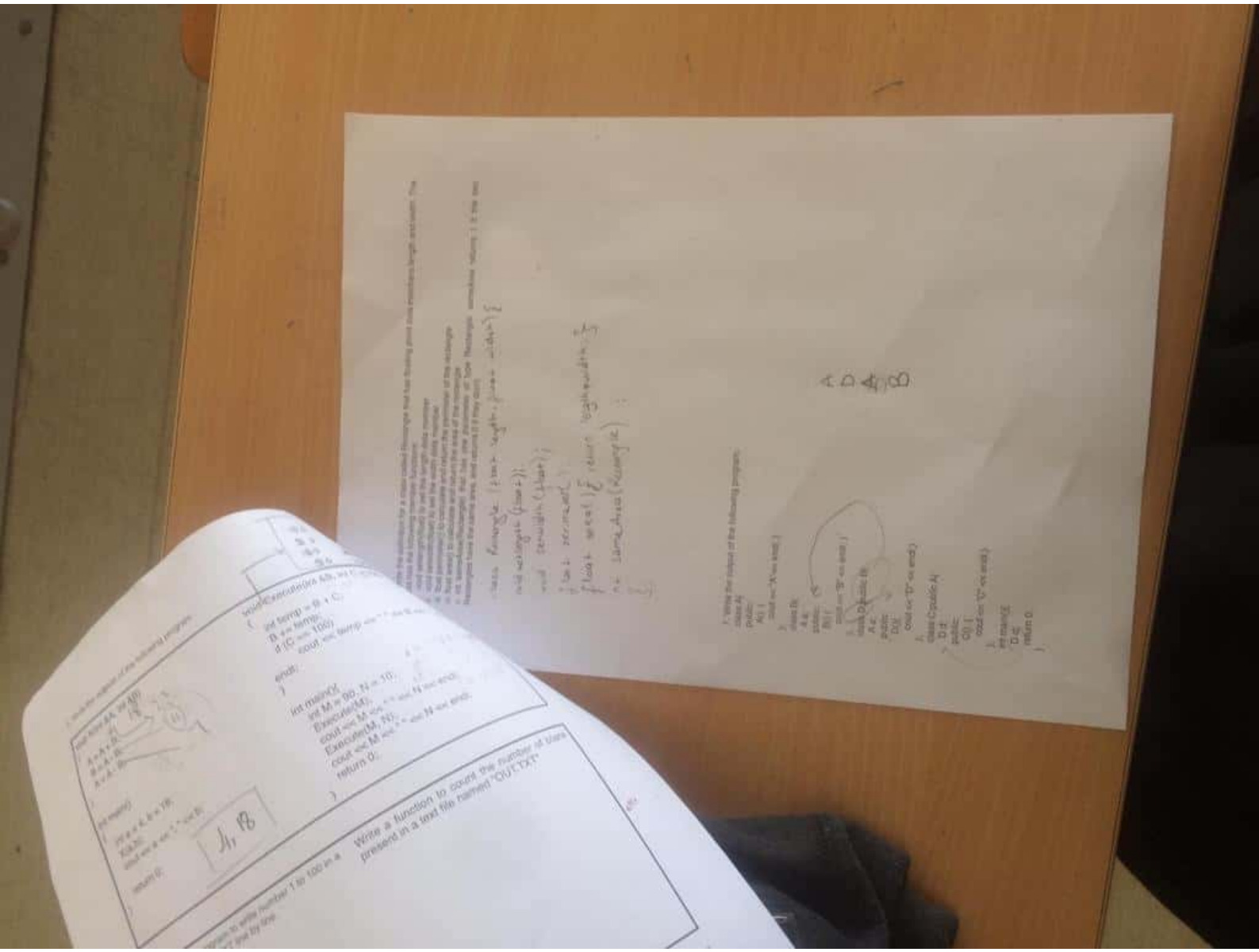
```
class Sample{
private :
  int x;
  double y;
public :
  Sample(); //Constructor 1
  Sample(int); //Constructor 2
  Sample(int, int); //Constructor 3
  Sample(int, double); //Constructor 4
};
```

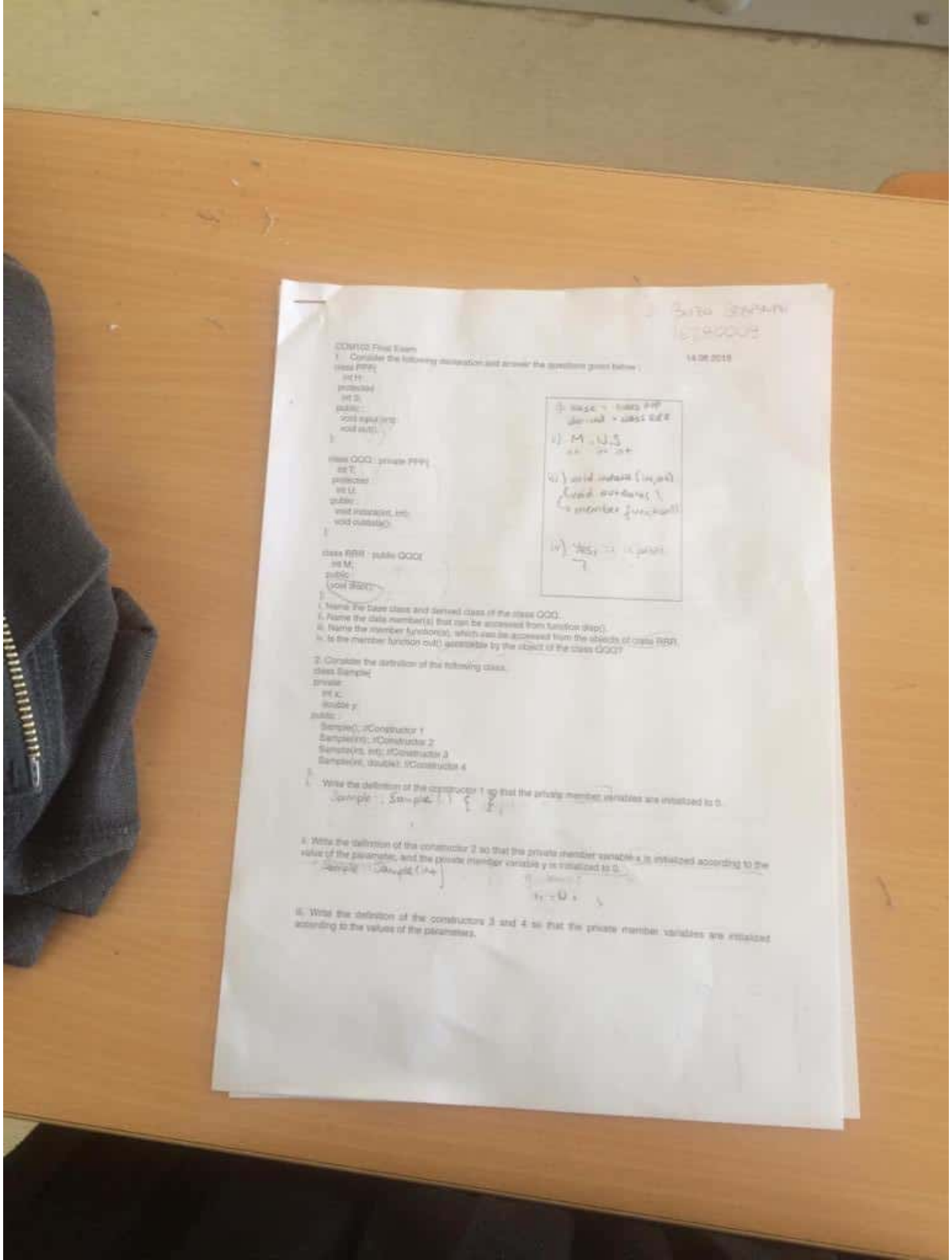
i. Write the definition of the constructor 1 so that the private member variables are initialized to 0.

ii. Write the definition of the constructor 2 so that the private member variable x is initialized according to the value of the parameter, and the private member variable y is initialized to 0.

iii. Write the definition of the constructors 3 and 4 so that the private member variables are initialized according to the values of the parameters.







CONT102 Final Exam 14.06.2018

1. Consider the following declaration and answer the questions given below :

```
class PPP{
  int H;
protected:
  int S;
public:
  void input();
  void out();
};

class QQQ : private PPP{
  int T;
protected:
  int U;
public:
  void interact_int();
  void outside();
};

class RRR : public QQQ{
  int M;
public:
  void disp();
};
```

i. Name the base class and derived class of the class QQQ.
ii. Name the data member(s) that can be accessed from function disp().
iii. Name the member function(s), which can be accessed from the objects of class RRR.
iv. Is the member function out() available by the object of the class QQQ?

2. Consider the definition of the following class.

```
class Sample{
private:
  int x;
  double y;
public:
  Sample(); //Constructor 1
  Sample(int); //Constructor 2
  Sample(int, int); //Constructor 3
  Sample(int, double); //Constructor 4
};
```

i. Write the definition of the constructor 1 so that the private member variables are initialized to 0.

ii. Write the definition of the constructor 2 so that the private member variable x is initialized according to the value of the parameter, and the private member variable y is initialized to 0.

iii. Write the definition of the constructors 3 and 4 so that the private member variables are initialized according to the values of the parameters.