MIDTERM EXAMINATION

Course: **OBJECT-ORIENTED PROGRAMMING**	
Time: **90 minutes**	Term: **3** – Academic year: **2018-2019**
Lecturer(s): **Dr. Dinh Ba Tien**	
Student name:	Student ID:

(Notes: Closed book exam)

Question 1. What is **data hiding** in object-oriented programming? Give an example.

Question 2. Why do we have to **pass by reference** in a **copy constructor**?

Question 3. How do the **constructors** work in **inheritance**? Give an example.

Question 4. When do we need to implement a **copy assignment operator** (i.e. operator=) by ourselves? What is wrong with the **free one** given by the system? Give an example to illustrate the copy assignment operator.

Question 5. You are asked to implement **all the methods** of the class **Date** to make the following C++ source code to work correctly:

```cpp
#include <iostream>
using namespace std;
class Date {
public:
    //add your functions here
private:
    int d, m, y; //date of d/m/y
};

int main() {
    Date a(2019); //set up a date of 1/1/2019
    Date b(3, 11, 2018); //set up a date of 3/11/2018
    Date c; //set up a default date of 1/1/1900

    cin >> c; //allow user to input d/m/y from keyboard
    cout << "a = " << a << endl; //display d/m/y
    cout << "b = " << b << endl;
    if (a>c)
        cout << "Number of days: " << a-c << endl; //number of days difference
    else
        cout << "Number of days: " << c-a << endl; //e.g. (2/4/2019) - (28/3/2019) = 5
    return 0;
}
```

***** **GOOD LUCK !!!** *****