

2016-2017 学年度第一学期软件学院 2015 级本科  
《Object Oriented Programming》课程考试试卷 (A 卷)  
(闭卷)

专业、班级：\_\_\_\_\_ 学号：\_\_\_\_\_ 姓名：\_\_\_\_\_ 成绩：\_\_\_\_\_

考试日期：\_\_\_\_\_ 考试时间：\_\_\_\_\_

题号	一 (20)	二 (20)	三 (20)	四 (20)	五 (20)	
得分						

**Question 1 (20 marks)**

- a) Describe Four features you would expect to be present in an object oriented programming language. Give example of how each feature is realized in Java language. (12 marks)
- b) 在面向对象的应用 (Application) 中, 在不修改旧的程序代码的前提下, 如何修改旧的功能? 如何增加新的功能? 举例说明。(8 marks)

**Question 2 (20 marks)**

- a) Reading the following program, (i) write the output; (ii) draw the class diagram for the following program (iii) draw the sequence diagram for Tester class (15 marks)

```
public class MyClass {  
    public int method1(int p){ return 1/p; }  
}  
  
public class TheClass extends MyClass {  
    public int method1(int p) { return p*8765; }  
}  
  
public class Tester {  
    public static void main(String args[]){  
        MyClass me = new TheClass();  
        int n = me.method1(100);  
        System.out.println("The Result Is: "+ n);  
    }  
}
```

b) What is the output of the following program? Please explain your answer. (5 marks)

```
public class Demo{
    static int y = 1;
    public Demo (){
        y++;
    }
}

public class MyClass{
    public static void main(String args[]){
        Demo a = new Demo ();
        Demo b = new Demo ();
        System.out.println("The value of y is "+ Demo.y);
    }
}
```

### Question 3 (20 marks)

a) Consider the following class definition:

```
public class TheDate
{
    private int day;    // from 1 to 31
    private int month; // from 1 to 12
    private int year;   // from 2010 upwards
};
```

i) Implement a constructor that initializes new objects of TheDate class to be set to the 1st of January 2010. (5 marks)

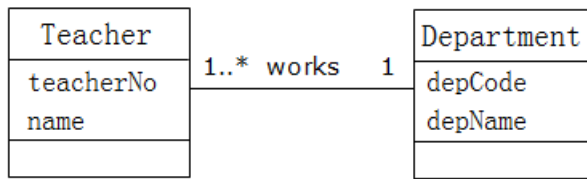
ii) Implement the setter method for day. (5 marks)

iii) Write a short test class that instantiates the TheDate class and tests that the setter method you designed above behave correctly. (5 marks)

b) Describe the similarities and differences of abstract class and Interface. (5 marks)

### Question 4 (20 marks)

a) According to the following UML class diagram, write the code of **Teacher class** and **Department class** that need to show how to implement the association relationship (关联关系).



- b) Describe the similarities and differences of Tester class and custom GUI class. (5 marks)
- c) 在自定义的 GUI 程序中如何实现接收事件和委派事件，可用代码辅助说明。(5 marks)

### Question 5(20 marks)

- a) When an application need to access database, which methods should be included in a DA Class? What Java classes are needed to support? (5 marks)
- b) 用文字描述一个基于 MVC 程序设计模式应用系统中 Use Case “Login” 的基本事件流，并用 UML sequence diagram 为这个基本事件流建模。(10 marks)
- c) Describe the similarities and differences of Model-View-Controller Programming Mode and Three-Tier Design Mode. (5 marks)