

# 四川大学期中考试试题（开卷）

课程名称：面向对象程序设计导论

一、单项选择题（本大题共 5 小题，每小题 2 分，共 10 分）

1. Which of the following is the string concatenation operator in Java?

- (A) +
- (B) ^
- (C) &
- (D) ++

2. Which of the following statements about constructors is correct:

- I. A constructor has the same name as the class name.
- II. A constructor is responsible for the initialization of an object's fields.
- III. A class can have several constructors.
- IV. Constructor methods have no return type

- (A) I and II
- (B) I, II and IV
- (C) II and III
- (D) All of above

3. According to the document entitled Code Conventions for the Java Programming Language, file suffixes used by Java software include which of the following?

- I. .obj
- II. .class
- III. .h

- (A) I and III only
- (B) II and III only
- (C) I and II only
- (D) II only

4. All Java exception classes are derived from the class

- (A) A. java.lang.Throwable
- (B) B. java.lang.Error
- (C) C. java.lang.RuntimeException
- (D) D.java.io.IOException

5. Which of the following is an application of the principle of inheritance:

- (A) An object of class A has a reference to a class B object.
- (B) Several methods have the same name, but have different signatures.
- (C) Fields are usually declared private.
- (D) All classes are ultimately derived from the super class called Object.

二、编程题（本大题共 2 小题，每小题 15 分，共 30 分）

1. Write the program to obtain 10 integers from the keyboard, and output the maximum and minimum values.

The output format is as follows: Max=?

Min=?

The exception handling mechanism is required to throw an exception when the input is not an integer.

2. Create a ArrayList that can only hold the String object named names. Add 5 string objects in the set in order: "Zhang three", "Li four", "Wang five", "horse six", "Zhao Qi". Traverse the ArrayList to print the position and content of each element in the set, and then print the size of the set. Then, delete the third elements in the collection, print the contents of the third elements in the deleted collection, and print the size of the ArrayList again.

### 三、类图题（本大题共 1 小题，每小题 15 分，共 15 分）

1. WeChat Pay is a very convenient electronic payment method. After the customer purchases the product, the seller calculates the total price and presents the QR code (the QR code consists of a picture and an account number). After the customer scans the code, enter the payment amount and click Pay. If the WeChat balance is sufficient, the balance will be paid. If the balance is insufficient, the bank payment interface will be called to pay from the bank card. The customer enters the correct password and the payment is completed.

Please draw the class diagram of this system.

### 四、英译汉（本大题共 15 小题，每小题 3 分，共 45 分）

1. Java applications are "stand-alone" programs, interpreted by a Java interpreter (not a web browser) on a host system. To execute a Java application, the user types a command that invokes the Java interpreter on the specified application.

2. System.out is used to display typical and regular program output. System.err is used to display prompts and error messages. This is just a convention that makes it easy for programmers and users to identify the different types of output.

3. Exception handling is a mechanism that allows failures to be handled outside the normal flow of the code. The resulting code is clear, easy to read, and easy to maintain.

4. In Java, an exception is an object that describes an abnormal situation. When an abnormal situation occurs, a method can create an exception object and then throw it. If the calling method is not prepared to catch the exception object, it throws the exception object to its calling method, and so on.

5. When a method throws an exception, none of the remaining statements in that method are executed. If none of the methods in the call stack catch the exception and the top-most method is main, the program displays, in the standard error stream, a message that identifies the exception and terminates.

6. Many catch blocks can appear after a try block, each catching a different exception. When an exception is thrown, each catch block is examined, starting with the catch block immediately after the try block.

7. An association represents the relationship between two or more classes. A binary association is a relationship between two classes. There is a binary association if an object of a class requires an object of another class to do its work.

8. In a one-way association, the first class has a reference to an object of the second class, but the second class does not have a reference to an object of the first class. In a two-way association, each class contains a reference to an object of the other class.
9. In a one-to-many association between classes A and B, one instance of class A may be related with many instances of class B, but one instance of class B is related with exactly one instance of class A.
10. If there is a specialization/generalization relationship between classes A and B that is, if A is-a B, then all instances of class A are also instances of class B. An important consequence of this relationship is that class A inherits all the features of class B.
11. A class method is a method that can access only class variables. In contrast, an instance method can access both instance and class variables. A class method is also declared using the static keyword, so the term static method is often used.
12. Since class variables and class methods are not associated with any particular object, they can be used even when no objects of the class exist!
13. In Java, all classes descend, directly or indirectly, from class Object, so all classes inherit the methods defined in class Object.
14. Class Vector holds references to instances of class java.lang.Object. The Vector method add accepts a reference to an instance of any class that descends from class java.lang.Object.
15. An abstract method consists of a method signature without a method body. No instance of an abstract class can be created. An abstract class has one purpose: to act as the superclass of a class hierarchy.