

四川大学期末考试试题（闭卷）

（2019~2020 学年第 2 学期）

B 卷

课程号： 311075030 课程名称： 面向对象程序设计导论 任课教师： _____

适用专业年级： 软件工程 2019 级 学号： _____ 姓名： _____

考生承诺			
我已认真阅读并知晓《四川大学考场规则》和《四川大学本科学生考试违纪作弊处分规定（修订）》，郑重承诺：			
1、 已按要求将考试禁止携带的文具用品或与考试有关的物品放置在指定地点；			
2、 不带手机进入考场；			
3、 考试期间遵守以上两项规定，若有违规行为，同意按照有关条款接受处理。			
考生签名： _____			
题 号	一 (40%)	二 (40%)	三 (20%)
得 分			
卷面总分		阅卷时间	

- 注意事项：** 1. 请务必将本人所在学院、姓名、学号、任课教师姓名等信息准确填写在试题纸和添卷纸上；
 2. 请将答案全部填写在本试题纸上；
 3. 考试结束，请将试题纸、添卷纸和草稿纸一并交给监考老师。
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评阅教师	得分

一、单项选择题（本大题共 20 小题，每小题 2 分，共 40 分）

提示： 在每小题列出的四个备选项中只有一个是符合题目要求的，请将其代码填写在下表中。错选、多选或未选均无分。

1	2	3	4	5	6	7	8	9	10
11	12	13	14	15	16	17	18	19	20

- Which of the following is true regarding Java applications?
 - They are run using a Java interpreter.
 - They are compiled into machine code.
 - They are interpreted by a Web browser.
 - They are platform-dependent.
- If a(n) exception can occur in a method that does not have a catch block to handle that exception, then a throws clause that lists this exception must be part of the method.

- (A) checked, body (B) unchecked, header
(C) checked, header (D) unchecked, body
3. In the context of Java programming, garbage collection refers to_____?
- (A) automatic balancing of parenthesis performed by some editors.
(B) removal of Java programs that could cause damage to a system.
(C) conversion of comments into Javadoc comments.
(D) automatic return of memory to the heap for objects no longer required by the program.
4. Which of the following is not the method of class InputStream?
- (A) void flush() (B) void close() (C) int available () (D) int read (byte[])
5. Which of the following statements is (are) true about inheritance in Java?
- I. A class can extend more than one abstract class.
II. A class can implement more than one interface.
- (A) II only (B) None (C) I and II (D) I only
6. Consider the following method call, where v is an instance of the class java. util. Vector v.
size();
This method call returns the number of
- (A) bytes used by v
(B) times that the method v.add has been called
(C) Vector objects that have been instantiated
(D) elements in the vector represented by v
7. If a class contains a constructor, that constructor will be invoked.
- (A) each time an object of that class is instantiated
(B) once the first time an object of that class is instantiated
(C) each time an object of that class goes out of scope
(D) once at the beginning of any program that uses that class
8. The Strategy design pattern is likely to be useful when implementing which of the following?
- I. An application that offers several alternate sorting algorithms
II. A simple class to store the address of an organization of which only one instance can be instantiated
- (A) II only (B) None (C) I and II (D) I only
9. Which of the following is true about association and aggregation in UML class diagrams?

- (A) Association and aggregation have no meaningful relationship.
(B) Association is a special form of aggregation.
(C) Association is the opposite of aggregation.
(D) Aggregation is a special form of association.
10. Which is a Java access modifier used to designate that a particular data field will not be inherited by a subclass?
(A) final (B) default (C) protected (D) private
11. What is the right way to handle abnormalities in input on Java?
(A) By writing while loops to guard against bad input
(B) By handling these problems by providing exception handlers
(C) By using the class FileFilter which gracefully filters out bad input data
(D) By always specifying the throws clause in every method header where file I/O is performed
12. As an aid in debugging a program in Java, print statements may be used to display which of the following types of information?
I. The names of methods being called
II. The values of the parameters of a method
III. The values of the instance variables of a class
(A) I and II only (B) I and III only (C) II and III only (D) I, II, and III
13. Consider the following method call, where c is an instance of the class java.util.ArrayList.
c.size();
This method call returns the number of
(A) times that the method c.add has been called
(B) bytes used by c
(C) ArrayList objects that have been instantiated
(D) elements in the ArrayList represented by c
14. Consider the following Java program fragment.
public void drive(Vehicle v) {
...
}
drive(obj);
The method call drive(obj) is valid if obj is which of the following?
I. A descendent of class Vehicle

II. An ancestor of class Vehicle

III. An object of class Vehicle

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

15. Which of the following statements about class variables in Java is not true?

(A) Class variables require the modifier static in the declarations.

(B) All objects have their own copy of the class variable defined in the instantiated class.

(C) Non-static methods in a class can access the class variable defined in the same class.

(D) Class variables do not need the reference to the object of the instantiated class to access them.

16. In Java, all methods in an interface must be _____ and _____.

(A) private, abstract (B) public, static (C) public, abstract (D) static, private

17. What is the name of the JDK program that processes Javadoc comments?

(A) Java (B) Javadoc (C) Javacom (D) javac

18. Consider the following Java class definitions.

```
public class Object1 {  
    protected String d() {  
        return "Hi";  
    }  
}  
  
public class Object2 extends Object1 {  
    protected String d(){  
        return super.d();  
    }  
}
```

Which of the following statements is (are) true regarding the definitions?

I. Class Object2 inherits from class Object1.

II. Class Object2 overrides method d.

III. Method d returns equivalent results when executed from either class.

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

19. After a typical debugger encounters a breakpoint, the programmer using the debugger may perform which of the following actions?

I. Examine the values of variables in the halted program

II. Execute the current line

III. Resume execution of the halted program

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

20. If a file opened for reading does not exist, which of the following events will occur in Java?

(A) A NullPointerException will be raised

(B) A FileNotFoundException will be raised

(C) A run-time error will occur

(D) A new file will be created

评阅教师	得分

二、编程题（本大题共 4 小题，每小题 10 分，共 40 分）

提示：每小题给出了一个程序设计要求，请按照要求写出源程序代码，如果源程序代码中出现语法错误或逻辑错误，则酌情扣分。

1. （共 10 分）

(Count uppercase letters) Write a program that prompts the user to enter a string and displays the number of the uppercase letters in the string.

Here is a sample run:

```
Enter a string: Welcome to Java
The number of uppercase letters is 2
```

2. （共 10 分）

Digit Frequency Counting:

Counting the frequency of each digit occurrence in a single array by using “BufferedReader”

The result like this:

```
Enter string:09431333150
Number of 0 = 2
Number of 1 = 2
Number of 2 = 0
Number of 3 = 4
Number of 4 = 1
Number of 5 = 1
Number of 6 = 0
Number of 7 = 0
Number of 8 = 0
Number of 9 = 1
```

3. （共 10 分）

Write the program to obtain 10 integers from the keyboard, and output the maximum and minimum values. The exception handling mechanism is required to throw an exception when the input is not an integer.

The output format is as follows: Max=?

Min=?

4. （共 10 分）

Create a ArrayList collection 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.

评阅教师	得分

三、UML 设计题（本大题共 1 小题，共 20 分）

Draw a UML Class Diagram representing the following elements from the problem domain for a hockey league. A hockey league is made up of at least four hockey teams. Each hockey team is composed of six to twelve players, and one player captains the team. A team has a name and a record. Players have a number and a position. Hockey teams play games against each other. Each game has a score and a location. Teams are sometimes lead by a coach. A coach has a level of accreditation and a number of years of experience, and can coach multiple teams. Coaches and players are people, and people have names and addresses. Draw a class diagram for this information, and be sure to label all associations with appropriate multiplicities.

Notes: captain could alternatively be represented as a second, named association between player and team.

Assumptions: each player only plays on one team, each captain only captains one team, each team only plays in one league.