厦门大学《Java 程序设计》课程试卷

软件学院软件工程系年级软件工程专业

主考教师：王美红 试卷类型：（A卷/B卷）

1、 Single choice(10 points)

Identify the letter of the choice that best completes the statement or answers the question.

(1) The _____ class is inherited by every Java class.

A. Class
B. Object
C. Number
D. Comparable

(2) A subclass inherits _____ from its superclass.

A. private method
B. protected method
C. A and B
D. public method
E. B and D

(3) Which of the following is true about RuntimeException and its subclasses?

A. If a method throws a RuntimeException, the use of the try/catch block is optional.
B. The FileIOException class is a subclass of RuntimeException.
C. In general, handling of RuntimeException should be done at compile time. 编译器不要求强制处理的异常
D. In general, RuntimeException must be caught with a try/catch block.

(4) Analyze the following code.

```
class Test {
    public static void main(String[] args) {
        Object x = new Integer(2);
        System.out.println(x.toString());
    }

}
```

A. The program has syntax errors because an Integer object is assigned to x.
B. When x.toString() is invoked, the toString() method in the Object class is used.
C. When x.toString() is invoked, the toString() method in the Integer class is used.
D. None of the above.

(5) Show the output of running the class Test in the following code:

```
interface A {
  void print();
}

class C {}

class B extends C implements A {
```

```
  public void print() { }
}

public class Test{
  public static void main(String[] args) {
    B b = new B();
    if (b instanceof A)
      System.out.println("b is an instance of A");
    if (b instanceof C)
      System.out.println("b is an instance of C");
  }
}
```

A. Nothing.
B. b is an instance of A.
C. b is an instance of C.
D. b is an instance of A followed by b is an instance of C.

(6) Suppose s is a string with the value "java". What will be assigned to x if you execute the following code?

```
char x = s.charAt(4);
```

A. 'a'
B. 'v'
C. Nothing will be assigned to x, because the execution causes the runtime error StringIndexOutofBoundsException.
D. None of the above.

(7) Which of the following data types does not implement the Collection interface?

A. HashSet
B. ArrayList
C. Map
D. TreeSet
E. LinkedList

(8) Which of the following statement will not result in compilation error?

A.
```
import java.awt.*;
package Mypackage;
class myclass{}
```

B.
```
class myclass()
  package mypackage;
```

C.
```
package mypackage;
import java.awt.*;
class myclass{}
```

D.
```
class myclass{}
  import java.awt.*
```

(9) What is the output of the following code?

```
int a = 1, b = 2, c = 3;
a += b + c;
b += a + c;
```

```
c += a + b;
System.out.println(a + " " + b + " " + c);
```

A. 3 5 6
B. 5 4 3
C. 5 8 13
D. 6 11 20
E. 3 3 4

(10) If a method does not have a return statement, then

A. It will produce a syntax error when compiled.
B. it must be a void method.
C. it can not be called from outside the class that defined the method.
D. it must be defined to be a public method.
E. it must be an int, double, or String method.

2、 Multiple choice(10 points)

Identify the letters of the choices that best complete the statement or answer the question.

(1) Which of the following types can be used as the parameter for a switch statement?

A. char
B. boolean
C. byte
D. int

(2) What are not the main differences between a class and an interface in J2SE 8.0?

A. Classes can declare variables; interfaces cannot.
B. Classes must be public; interfaces can be public or private.
C. Classes give method de_nitions; interfaces only give the names and argument.
D. Classes can be used as data types for variables; interfaces cannot.

(3) Which of the following assignments are legal?

A. p = ugC. ug = new Student();
B. p = new Undergraduate();
C. ug = p;
D. s = new Person();

(4) which of the following statements correctly creates an array of five empty String?

A.
```
String a[] = new String[5];
for(int i=0; i<5;i++)
    a[i] = "";
```
B. String a[] = {"", "", "", "", ""};
C. String a[5];
D. String[5] a;
E. String[] a = new String[5];
a = {"", "", "", "", ""};

```
Array constants can only be
used in initializers
```

(5) which statements will not result in compilation error in J2SE 8?

A. (int x, int y) -> {return x + y;}
B. (x, y) -> {return x + y;}

C. (x, y) -> x + y
D. value -> System.out.printf("%d ", value) 可能需要加一个；

3、 True/False(10 points)

Indicate whether the sentence or statement is true or false.

(1) If myArray is an array variable, it is possible to make the array grow or shrink(缩小) by changing the value of *myArray.length*. F,可以reassigning it to the new one

(2) Local variables and parameters can be *final*, but they cannot be *static*. T

(3) A *try* block can only have one *catch* clause(语句). F

(4) *NullPointerException* and *ArrayIndexOutOfBoundsException* are checked exceptions(受控异常). F

(5) Overloaded methods can have different return values, and must have different parameter lists. Two methods differing only by return type will result in a compilation error. T

(6) A lambda expression represents an anonymous(匿名) method—a shorthand notation（符号） for implementing a functional interface. T

(7) A generic class declaration looks like a nongeneric class declaration, except that the class name is followed by a type-parameter section. T

(8) Class *Number* is the superclass of both *Integer* and *Double*. T

(9) A *Set* is an ordered *Collection* that contains no duplicate elements. F，unorder

(10) An *Arrays* is similar to an array but can be dynamically resized. T，静态的

4、 Short answer(40 points)

(1) (4 points) what's *Functional Interfaces* ?

(2) (4 points) what's *dynamic binding*?

(3) (6 points) what's the difference between *reference type* and *primitive type*?

(4) (6 points) Please list the new features of *interface* in j2SE 8.

(5) (6 points) what's the difference between keywords *throw* and *throws* ?

(6) (6 points) what's the difference between *List, Set* and *Map*?

(7) (4 points) when and how to use wildcard (?) in the method's header?

(8) (4 points)Suppose A is an abstract class, what is wrong in the following code?

```
A[] list = new A[10];
```

```
list[0] = new A();
```

5、 Completion(30 points)

(9) (2 points)A(n) 省略 in the parameter list of a method indicates that the method can receive a variable number of arguments.

(10)(3 points)Use the enhanced for statement for(double d : numbers) to walk through double array ***numbers***.

(11)(2 points) 123 is displayed by System.***out***.println("1" + **new** Integer(2) + 3);

(12)(2 points) To get an iterator from a set, you may use the iterator method.

(13)(4 points) Consider the following code segment:

```
List<String> list = new LinkedList<String>();
list.add("[");     list.add("A");     list.add("]");
System.out.println(list);
ListIterator<String> it = list.listIterator();
while(it.hasNext())
{       if ("[".equals(it.next()) || "]".equals(it.next()))
                it.remove();
        else
                it.add("*");
}
System.out.println(list);
```

The first output line is [[, A,]]

The Second output line is [A]

(14)(2 points) What is the printout for the following code? x[0] is 0

```
class Test {
  public static void main(String[] args) {
        int[] x = new int[3];
        System.out.println("x[0] is " + x[0]);
  }
}
```

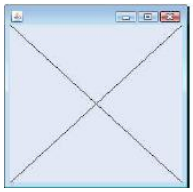
属性

(15)(2 points)An attribute that is shared by all objects of the class is coded using a static method.

(16)(8 points)Design a method *duplicate(List L),* which, when given a list of objects, can return the set of all objects which occur more than one time in L.

```
static <E> Set<E> duplicate(List<? extends E> L){
        ____________
}
```

(17)(5 points)Fill in the blanks so that the program can run as shown in the following figure.



```
//DrawPanelTest.java
import javax.swing.JFrame;
public class DrawPanelTest
{
    public static void main(String[] args)
    {
        DrawPanel panel = new DrawPanel();
        JFrame application = new JFrame();
        application.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        application.add(panel);
        application.setSize(250, 250);
        application.setVisible(true);
    }
} // end class DrawPanelTest

//DrawPanel.java
import java.awt.Graphics;
import javax.swing.JPanel;
public class DrawPanel extends JPanel
{
    // draws an X from the corners of the panel
    ____________________________________

} // end class DrawPanel
```

(1) (4 points) what's *Functional Interfaces* ?

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(3) (6 points) what's the difference between *reference type* and *primitive type*?

(4) (6 points) Please list the new features of *interface* in j2SE 8.

(5) (6 points) what's the difference between keywords *throw* and *throws* ?

(6) (6 points) what's the difference between *List, Set* and *Map*?

(7) (4 points) when and how to use wildcard (?) in the method's header?

(8) (4 points)Suppose A is an abstract class, what is wrong in the following code?

1. 答：（1）只包含一个抽象方法的接口，称为函数式接口。（2）可以通过 Lambda 表达式来创建该接口的对象。（(3）可以在任意函数式接口上使用@FunctionalInterface 注解，这样做可以检查它是否是一个函数式接口，同时也会包含一条声明，说明这个接口是一个函数式接口。
2. 答:变量引用的对象的类型决定了要使用的实际方法
3. 答：原始类型是数据的基本类型： byte、short、int、long、float、double、boolean、char。原始变量存储原始值。 **引用类型是任何可实例化的类以及数组**：String、Scanner、Random、Die、int[]、String[] 等
4. 答：Java 8 通过改进接口以支持默认和静态方法。默认方法是定义在接口中的实例方法，其方法头以 default 关键字开头；它还提供了代码体。每个实现接口的类都继承了接口的默认方法，并且可以覆盖它们。
5. 答：（1）throw 语句用在方法体内，表示抛出异常，由方法体内的语句处理。 throws 语句用在方法声明后面，表示再抛出异常，由该方法的调用者来处理。 （2）throw 是具体向外抛异常的动作，所以它是抛出一个异常实例。throws 主要是声明这个方法会抛出这种类型的异常，使它的调用者知道要捕获这个异常。
6. 答：（1）List、Set 都是继承自 Collection 接口，Map 则不是（2）List 元素有放入顺序，元素可重复，Set 元素无放入顺序，元素不可重复，重复元素会覆盖掉。Map 不可重复，适合储存键值对的数据。
7. 答：（1）当方法主体中**不需要有关参数的精确类型信息时**使用通配符。通配符代表了一种特定的类型，它表示 “某种特定的类型，但是没有指定”。（2）比如 List<? extends Fruit>，就是一个类型的 List， 这个类型可以是继承了 Fruit 的某种类型。

答：不能为抽象类创建对象。A 是抽象的，无法实例化

（16）

```
static <E> Set<E> duplicate(List<? extends E> L){
    Set<T> set = new HashSet<T>();
    set=L.stream.collect(Collectors.toSet());
    return set;
}
```