



厦门大学《Java 程序设计》课程试卷

软件学院 软件工程系 07 年级 软件工程 专业

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1、 Multiple Choice(20 point)

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

- (1) The ____ statement identifies a block of statements that potentially may throw an exception.
- a. catch
 - b. finally
 - c. throw
 - d. try
- (2) Which method is used to invoke a constructor of the same class?B
- a. this()
 - b. constructor()
 - c. super()
 - d. class()
- (3) The ____ is a wildcard symbol to tell a program to import all necessary classes from a package.
- a. asterisk
 - b. comma
 - c. period
 - d. semicolon
- (4) Which of the following is not a reference type in Java?
- a. array
 - b. BufferedReader
 - c. float
 - d. String
- (5) The ____ class decodes bytes into **characters**.
- a. BufferedInputStream
 - b. BufferedReader
 - c. **InputStreamReader**
 - d. System.in
- (6) ____ is a class used to display standard dialog boxes.
- a. Box
 - b. JFrame
 - c. JOptionPane
 - d. JWindow
- (7) In java 2D, method _____ of class Graphics2D sets the characteristics of a line used to draw a shape.
- a. setBackground
 - b. setStroke
 - c. setPaint
 - d. translate
- (8) A _____ is needed to terminate recursion.
- a. recursion step
 - b. void return type
 - c. break statement
 - d. base case
- (9) What type of error will be produced first during the execution of the following code?

```
Object[] array = new Object[4];  
for(int i=0;i<= array.length;i++) System.out.println(array[i] );
```

- a. ArrayIndexOutOfBoundsException
- b. StringIndexOutOfBoundsException
- c. cannot resolve symbol
- d. NullPointerException

(10) The following is a list of classes / interfaces defined in Java's standard packages, List all interfaces in the above list.

- | | | |
|---------------|-------------|----------------|
| a. Collection | b. Math | c. List |
| d. Thread | e. Runnable | f. Collections |
| g. Integer | h. String | |

2、 True/False(10 points)

Indicate whether the sentence or statement is true or false.

- (1) Multiple inheritances are not allowed in Java. T
- (2) If I do not provide any arguments on the command line, then the String array of Main method will be null. F
- (3) java.lang package is by default loaded internally by the JVM. T
- (4) Importing a package imports the subpackages as well. e.g. Importing com.MyTest.* also import com.MyTest.UnitTests.*. T
- (5) The default value of an object reference declared as an instance variable is null. T
- (6) If I write System.exit (0); at the end of the try block, the finally block will still execute. F
- (7) When a thread is created and started, its initial state is runnable state. F
- (8) The purpose of finalization is to give an unreachable object the opportunity to perform any cleanup processing before the object is garbage collected. True
- (9) Static methods can be referenced with the name of the class rather than the name of a particular object of the class.
- (10) The local variables are not initialized to any default value, neither primitives nor object references.

3、 Short answer(25 points)

- (1) Which method can you use to perform binary search for elements in an ArrayList or a LinkedList? Which method can you use to sort an array of strings?(4 points)

- (2) Difference between **Vector** and **ArrayList**?(2 points)
- (3) What is the difference between method overloading and method overriding? Can static methods be overridden? Can constructor be overridden?(6 points)
- (4) What is the purpose of garbage collection in Java, and when is it used?(2 points)
- (5) Explain how the Java interface works. What is the difference between an abstract class and an interface? Produce examples of “implements” relationships.(3 points)
- (6) State the significance of public, private, protected, default modifiers both singly and in combination and state the effect of package relationships on declared items qualified by these modifiers.(4 points)
- (7) What are Checked and UnChecked Exception?(2 points)
- (8) Within a method m in a class C, isn't this.getClass() always C? (2 points)

4、 Completion(45 points)

Complete each sentence or statement.

- (1) (2 points) An applet can also get references to all other applets on the same page using the getApplets() method of ____ (1) ____.
- (2) (5 points) Java applets begin execution with a series of three method calls:____ (2) ____, (3) ____ and ____ (4) ____ .The ____ (5) ____ method is invoked for an applet each time the user of a browser leaves an HTML page on which the applet resides. Every applet should extend class ____ (6) ____.
- (3) (4 points) Consider the following classes:

```
public class AnimalHouse<E> {  
    private E animal;  
    public void setAnimal(E x) {  
        animal = x;  
    }  
    public E getAnimal() {  
        return animal;  
    }  
}  
public class Animal{  
}  
  
public class Cat extends Animal {  
}  
  
public class Dog extends Animal {  
}
```

For the following code snippets(代码片段) from a to d, identify whether the code:

- fails to compile____(7)_____
- compiles with a warning____(8)_____
- generates an error at runtime____(9)_____or
- none of the above (compiles and runs without problem.)____(10)_____

- a. `AnimalHouse<Cat> house = new AnimalHouse<Cat>();`
- b. `AnimalHouse<Cat> house = new AnimalHouse<Animal>();`
- c. `AnimalHouse house = new AnimalHouse<Animal>();`
- d. `AnimalHouse house = new AnimalHouse();`
`house.setAnimal(new Dog());`

(4) (5 points) Assume the following:

`a = "abc";`

Give the values of the following expressions, or *illegal*.

____(11)____ `"Tomorrow".substring(2,4)`

____(12)____ `a.length() + a`

____(13)____ `a.length() + a.startsWith("a")`

____(14)____ `"a".compareTo("c")`

____(15)____ `"a = \" + a + "\"`

(5) (5 points)Write a method to copy a file from file1 to file2:

```
public static void copy(File file1, File file2) {  
    _____(16)_____  
    _____  
}
```

(6) (6 points) Producer and Consumer are two threads which both implement interface Runnable. Complete the BlockingBufferTest class below to start the two threads.

```
public class BlockingBufferTest  
{  
    public static void main( String[] args )  
    {  
        // create new thread pool with two threads  
        ExecutorService application = _____(17)_____  
  
        // create BlockingBuffer to store ints  
        Buffer sharedLocation = new BlockingBuffer();
```

```

try // try to start producer and consumer
{
    application.____(18)____ ( new Producer( sharedLocation ) );
    application.____(18)____ ( new Consumer( sharedLocation ) );
} // end try

catch ( Exception exception )
{
    exception.printStackTrace();
} // end catch

application.____(19)____ ;
} // end main
} // end class BlockingBufferTest

```

(7) (5 points) Establishing a simple server using stream sockets in java requires five steps.

Step 1, to create an object, such as

____(20)____ server = new ____ (20) ____ (portNumber,queueLength);

Step 2, the server listens indefinitely for an attempt by a client to connet. Such in

____(21)____ connection = server. ____ (22) ____;

Step 3, to get the OutputStream and ____ (23) ____ objects that enable that server to communicate with the client by sending and receiving bytes.

Step 4, is the processing phase.

Step 5, when the transmission is complete, the server closes the connection by invoking the ____ (24) ____ method on the streams and on the Socket.

(8) (4 points) Write method numInArray, as started below. numInArray should return the number of times an even int parameter occurs in array A. For example, assume that array A is as shown below.

[0]	[1]	[2]	[3]	[4]	[5]	[6]
6	3	4	5	2	7	3

then numInArray(A) should return 3 since 6, 4, and 2 are even.

Complete method numInArray below.

```

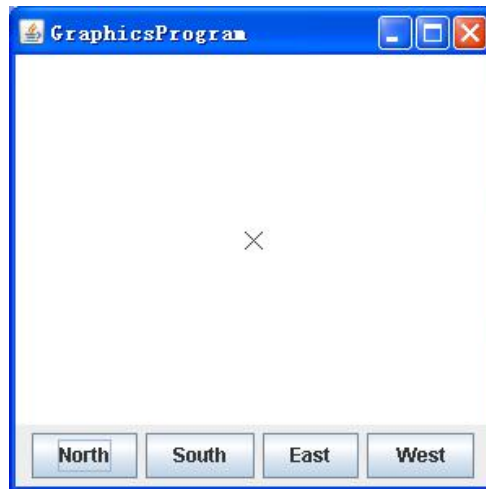
public static int numInArray(int[] A)
{
    // precondition: A will contain integers greater than zero
    // postcondition: returns the number of even integers found in A
    _____(25)_____
    _____
}

```

(9) (9 points) Complete the following program to do the following:

- a. Add buttons to the South region labeled "North", "South", "East", and "West".
- b. Create an X-shaped cross 10 pixels wide and 10 pixels high.
- c. Adds the cross so that its center is at the center of the graphics canvas.

Once you have completed these steps, the display should look like this:



- d. Implement the actions for the button so that clicking on any of these buttons moves the cross 20 pixels in the specified direction.

```
//GraphicsProgram.java
import java.awt.BorderLayout;

public class GraphicsProgram extends JFrame {

    private SouthPanel southPanel;
    private CenterPanel centerPanel;

    public GraphicsProgram(String title) {
        super(title);

        southPanel = new SouthPanel();
        southPanel.setAlignmentX(FlowLayout.CENTER);

        centerPanel = new CenterPanel();

        add(centerPanel, BorderLayout.CENTER);
        add(southPanel, BorderLayout.SOUTH);

    } //end constructor

    public static void main(String args[]) {
        GraphicsProgram frame = new GraphicsProgram("GraphicsProgram");
        frame.setDefaultCloseOperation(JFrame.EXIT_ON_CLOSE);
        frame.setSize(300, 400);
        frame.setVisible(true);
    }
}
```

```

}

class SouthPanel extends JPanel implements ActionListener {
    private JButton northButton, southButton, eastButton, westButton;

    public SouthPanel() {
        northButton = new JButton("North");
        southButton = new JButton("South");
        eastButton = new JButton("East");
        westButton = new JButton("West");
        northButton.addActionListener(this);
        southButton.addActionListener(this);
        eastButton.addActionListener(this);
        westButton.addActionListener(this);
        add(northButton);
        add(southButton);
        add(eastButton);
        add(westButton);
    } //end constructor

    public void actionPerformed(ActionEvent arg0) {
        _____
        _____
    } //end method actionPerformed.
} //end class SouthPanel

}

```

//CenterPanel.java

```

import java.awt.*;
import javax.swing.*;

public class CenterPanel extends JPanel {
    private int centerX; // the horizontal x point in the ¿Á center
    private int centerY; // the vertical y point in the ¿Á center

    private Boolean initState = true; // not have been moved

    public CenterPanel() {
        this.setBackground(Color.WHITE);
    } //end constructor

    public void paintComponent(final Graphics g) {
        _____
        _____
    }
}

```

```
}

//set and get method
public void setInit(Boolean init) {
    this.initState = init;
}

public void setX(int centerX) {
    if (centerX >= 0)
        this.centerX = centerX;
    paintComponent(this.getGraphics());
}

public void setY(int centerY) {
    if (centerY >= 0)
        this.centerY = centerY;
    paintComponent(this.getGraphics());
}

public int getX() {
    return centerX;
}

public int getY() {
    return centerY;
}

} //end class CenterPanel
```