44-542 Object Oriented Programming

Exam 1 Part 2 KEY (70 pts total)

1. (15 points) Answer all the questions. Please write neatly. Write the Java source code in the given below space and output in the given box.

public class Ticket {

1. Declare two private instance variables **name**, and **pnr** of type **String** and **long**

respectively. (**pnr** is a 10 digit number)

    private String name;

    private long pnr;

b.      Write a constructor with two arguments in the same order as private instance variables.

  public Ticket(String name, long pnr){

         this.name = name;

         this.pnr = pnr;

  }

c.        Write a getter method for **name**.

public String getName() {

         return name;

       }

d.      Write a setter method for **name**.

     public void setName(String name) {

          this.name = name;

       }

e.      Write a **toString()** method that returns the concatenation of **name** and **pnr** with a single space in between two variables.

        public String toString() {

         return  name + " " + pnr;

        }

}//end Ticket class

public class TicketTester{

public static void main(String[] args){

f.        Create a Ticket object using a constructor with two arguments. Use **ticket** as an object name. You can use values of your choice.

Ticket ticket = new Ticket("Jay",2345983976);

System.out.println(ticket);

ticket.setName(“Jaya”);

System.out.println(ticket.toString());

    }//end main

}//end TicketTester class

Write the output of the above main method in the given box.

Output for 1f:
Jay 2345983976
Jaya 2345983976


2. (5 points) Assume one space is in between the words given in **myString** and write the

output for the following Java statements.

**String myString = "Why so serious?";**

**System.out.println(myString.substring(2));**

**System.out.println(myString.substring(7,14));**

**System.out.println(myString.lastIndexOf('o'));**

**System.out.println(myString.indexOf("s".toUpperCase()));**

**System.out.println(myString.charAt(3+(5%2)));**

**OUTPUT for 2:-**

y so serious?

serious

11

-1

s

3. (5 points) Write the output for the following Java statements.

**int k = 5;**

**int m = 10;**

**boolean n = (m+4%2 == k%2);**

**System.out.println(n);**

**System.out.println(k+m/2>=8);**

**System.out.println(n||(m-3==1));**

**System.out.println(k+m%2>4&&k-m/2>1||!n&&m/3%2==1);**

**System.out.println(k+m/k-m);**

**OUTPUT FOR 3 :-**

false

true

false

true

-3

4. (5 points) Write only the output in the given space. If you want to trace you can use a separate sheet and it will be not be graded.

**OUTPUT FOR 4 :-**

203

12

01

**int i, j;**

**for (i = 2; i >= 0; i--) {**

**for (j = i; j >=0; j=j-2)**

**System.out.print(j);**

**System.out.println(i+1);**

**}**

5. (10 points) Write only the output of the Java code snippet in the given space. If you want to trace you can use a separate sheet and it will be not be graded.

**int a = 0;**

**int b = 0;**

**do {**

**while ((a + b) < 5) {**

**a += 2;**

**b += 5;**

**System.out.println("a:" + a + " b:" + b);**

**}**

**while (a + b >= 7 && a + b < 20) {**

**a += b;**

**b += a / 2;**

**System.out.println("a:" + a + " b:" + b);**

**}**

**while (a + b > 20 && a + b < 40) {**

**a += b / 2;**

**b++;**

**}**

**System.out.println("a:" + a + " b:" + b);**

**} while (a + b < 30);**

**System.out.print("Winner");**

**if (a >= 20) {**

**System.out.println(":a = " + a);**

**} else {**

**System.out.println(":b = " + b);**

**}**

**OUTPUT FOR 5: -**

a:2 b:5

a:7 b:8

a:15 b:15

a:30 b:17

Winner:a = 30

|  |  |  |
| --- | --- | --- |
| **Trace 5:** | | |
| **p** | **q** | **r** |
| **5** | **15** | **1** |
| **10** | **13** | **1** |
| **12** | **12** | **2** |
| **13** | **12** | **3** |
| **13** | **11** | **4** |
|  |  |  |
| **Final Output:**  **13 11 5** | | |

6. (5 points) Trace p, q, and r values in the following Java code. Write those values in the given space.

**int p = 5;**

**int q = 15;**

**int r = 1;**

**for (r = 5%2; r < q / 2; r++) {**

**q -= p % 3;**

**p += q + 2;**

**p = p / 2;**

**//trace p,q,r values here**

**}//end for**

**System.out.println(p + " " + q + " " + r);**

7. (5 points) Convert the given Java source code to use a single switch statement.

**//Assume that we will give some value to the food.**

**String food = "";**

**if (food.equals("egg") || food.equals("tomato") ||**

**food.equals("apple"))**

**{**

**System.out.println("Vegetarian.");**

**} else {**

**System.out.println("Foodie.");**

**}**

**Answer For 7 :-**

**switch (food) {**

**case "egg":**

**case "tomato":**

**case "apple":**

**System.out.println("Vegetarian.");**

**break;**

**default:**

**System.out.println("Foodie.");**

**}**

8 . (5 pts.) Questions on scanner class.

* 1. Create a Scanner object named **scan** which reads from the Keyboard. Assume that all the necessary packages or imported.

**Scanner scan = new Scanner(“System.in”);**

* 1. Write the source code to scan the following input and save in them in **String ironman, int age, String company**.

**Tony 34**

**Stark Industries**

**String ironMan = scan.next();**

**int age = scan.nextInt();**

**scan.nextLine();**

**String company = scan.nextLine();**

9 . (10 points) This question is on one-dimensional arrays. Write the source code in the given

space below.

* 1. Create an array of type **double** and size 198 named **playersWeight** .

**double[] playersWeight = new double [198];**

* 1. Write a traditional for loop to populate the **playersWeight** array with the (index + 1) cubed. Use **Math** class to compute the cube.

**for(int i = 0; i< playersWeight.length; i++){**

**playersWeight [i] = Math.pow(i+1,3);**

**}**

c. Write an enhanced for loop to print each element in **playersWeight** on a new line.

**for(double d : playersWeight){**

**System.out.print(d);**

**}**

10 . (5 points) Write the output for the following Java source code in the given space.

**int loop1 = 3;**

**int loop2 = 4;**

**for(int k=0;k<loop1-1;k++){**

**while(loop2<6){**

**loop2++;**

**System.out.println("Removing excuses!");**

**}//end inner while**

**loop1--;**

**if(loop1<3){**

**System.out.println("About to succeed!");**

**}**

**do{**

**System.out.println("All the very best!");**

**}while(loop1>2); // end inner do-while**

**System.out.println("Success on the way!!");**

**}// end outer for loop**

**OUTPUT FOR 10:-**

**Removing excuses!**

**Removing excuses!**

**About to succeed!**

**All the very best!**

**Success on the way!!**