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UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER II
SESSION 2017/2018**

COURSE NAME : JAVA PROGRAMMING
COURSE CODE : BIT 33803
PROGRAMME CODE : BIT
EXAMINATION DATE : JUNE / JULY 2018
DURATION : 3 HOURS
INSTRUCTIONS : A) ANSWER ALL QUESTIONS
B) PLEASE WRITE YOUR ANSWERS IN THIS QUESTION BOOKLET

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THIS QUESTION PAPER CONSISTS OF TEN (10) PAGES

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Q1 Answer Q1(a) - Q1(c) based on the information given in **Figure Q1**.

```
public class finalJavaQ1{

    public static void main(String[] args) {
        Q1a x = new Q1a();

        x.test1(100.5,250.5);
        x.test2(550.8,125.4);
        x.test3();
        System.out.println("Enjoy Java Programming!");
    }
}

class Q1b{
    public void test1(double val1, double val2){
        System.out.println("Call me One: "+val1 + " " + val2);}

    public void test2(double val1, double val2){
        System.out.println("Call me Two: "+ val1 + " " + val2);}

    public void test3(){
        System.out.println("We love Java Programming");}
}

class Q1a extends Q1b{
    public void test1(double val1, double val2){
        System.out.println("Call me One: "+ val1*2 + " " + val2*5);}

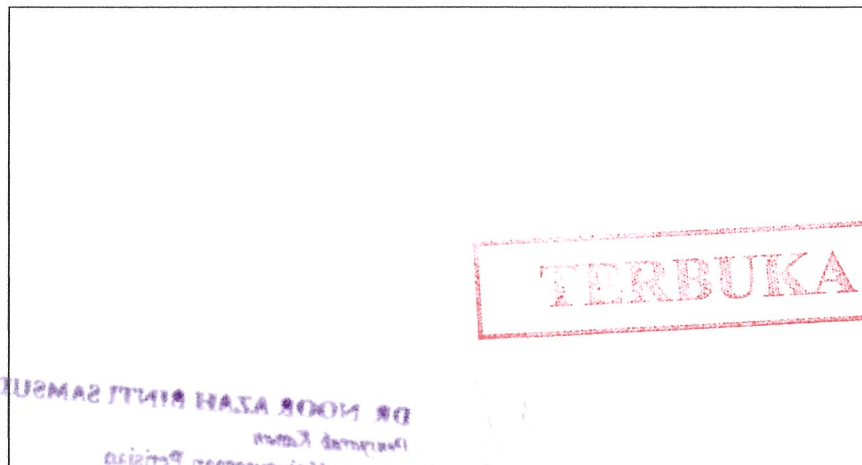
    public void test2(int val1, int val2){
        System.out.println("Call me Two: "+ val1 + " " + val2);}
}
```

Figure Q1

(a) Determine the output for **Figure Q1**.

(10 marks)

Answer:



- (b) Indicate whether each of the following statements is **TRUE** or **FALSE**.

(10 marks)

Statement(s)	Answer
Q1b is a subclass of Q1a.	
test1() in Q1a overrides test1 in Q1b.	
test1() in Q1a is overloaded.	
test2() in Q1a is overloaded.	
test2() in Q1a overrides test2() in Q1b.	

- (c) Determine the **BEST** answer to fill up the blanks in the following statements.

(10 marks)

Statements	Answer
_____ is a form of software reusability in which new classes acquire the members of existing classes and embellish those classes with new capabilities.	
A superclass's _____ and _____ members can be accessed in the superclass declaration and in subclass declaration.	
In a(n) _____ relationship, a class object has references to objects of other class as members.	
When an object of a subclass is instantiated, a superclass _____ is called implicitly or explicitly.	
Subclass constructors can call superclass constructors via the _____ keyword	

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Q2 Answer Q2 based on the information given in **Figure Q2(a)** and **Figure Q2(b)**.

Department
-deptName: String -employees: String[] -numberOfEmployees:int
+Department (deptName:String) +getDeptName():String +addEmployee (employee:String):void +getEmployees():String[] +getNumberOfStudents():int

Figure Q2(a)

-deptName: String	The name of the department
-employees: String[]	An array to store the employees for the department
-numberOfEmployees:int	The number of employees in the department
+Department (deptName:String)	Creates a department with the specified department name
+getDeptName():String	Returns the department name
+addEmployee (employee:String):void	Adds a new employee to the department
+getEmployees():String[]	Returns the employees for the department
+getNumberOfEmployees():int	Returns the number of employees for the department

Figure Q2(b)

Implement the class for **Figure Q2(a)**. The properties of the class are given in **Figure Q2(a)**. The class shall use an array to store the employees in the department. Assume that the maximum number of employees recruited is 100. The `addEmployee` method adds an employee to the array. Whenever a new employee is added to the department, `numberOfEmployees` is increased. The `getEmployees` method returns the array. Note that a `Department` object can be created using the constructor by passing a department name.

(25 marks)

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Answer:

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Q3 Write Java code to produce the graphical user interface in **Figure Q3**. Prompt the user to enter first integer value. When the user clicks **OK**, prompt the user to enter second integer. When the user clicks **OK** after entering the second integer, display the sum of the two integer values.

(17 marks)

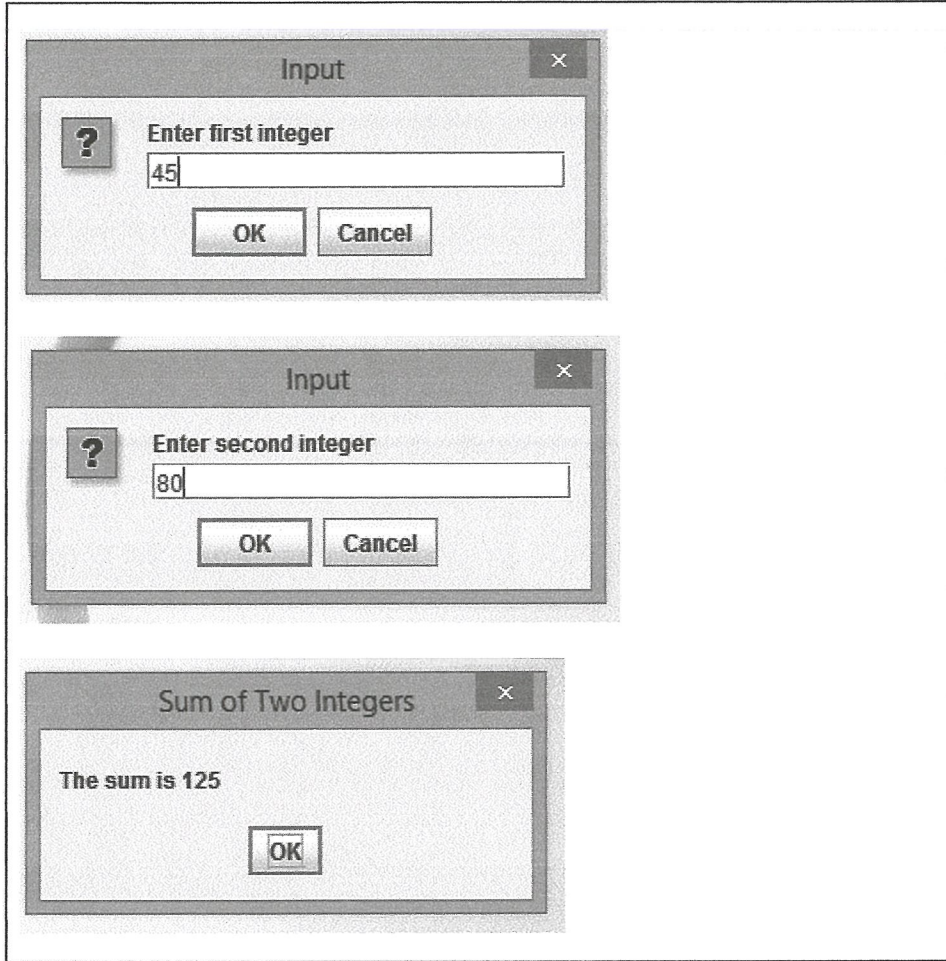


Figure Q3

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Answer:

[Empty answer box]

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- Q4** The code in **Figure Q4** prompts a user for two integers and passes them to method `quotient`, which calculates the integer quotient and returns an `int` result. Rewrite the code in **Figure Q4** to handle exceptions: when a user enters 0 for the denominator and when a user mistakenly enters a string for the denominator. If the user makes a mistake, the program handles the exceptions and shall allow the user to re-enter the input. Display appropriate message for each exception.

(20 marks)

```
import java.util.Scanner;

public class FigureQ4
{
    public static int quotient(int numerator, int denominator)
    {
        return numerator / denominator;
    }

    public static void main(String[] args)
    {
        Scanner scanner = new Scanner(System.in);

        System.out.print("Please enter an integer numerator:");
        int numerator = scanner.nextInt();
        System.out.print("Please enter an integer denominator:");
        int denominator = scanner.nextInt();

        int result = quotient(numerator, denominator);
        System.out.printf("%nResult:%d%n", result);
    }
}
```

Figure Q4**TERBUKA**

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Answer:

[Empty answer box]

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Q5 Find the error(s) in each of the following statements, and explain how to correct it.

(8 marks)

Statement(s)	Answer
<pre>buttonName = Jbutton("Caption");</pre>	
<pre>Jlabel aLabel, JLabel;</pre>	
<pre>txtField = new JTextField(50, "Default Text");</pre>	
<pre>setLayout(new BorderLayout()); button1 = new JButton("North Star"); button2 = new JButton("South Pole"); add(button1); add(button2);</pre>	

- END OF QUESTION -

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