

UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER II
SESSION 2010/2011**

COURSE NAME : JAVA PROGRAMMING
COURSE CODE : BIT 3383
PROGRAMME : BACHELOR OF INFORMATION
TECHNOLOGY
EXAMINATION DATE : APRIL / MAY 2011
DURATION : 3 HOURS
INSTRUCTION : ANSWER **ALL** QUESTIONS.

THIS QUESTION PAPER CONSISTS OF FIVE (5) PAGES

- Q1** State FOUR (4) characteristics of Java. (4 marks)
- Q2** (a) What is the correct signature of the `main` method? (2 marks)
- (b) When declaring the `main` method, which modifier must come first, `public` or `static`? (2 marks)
- (c) What parameters does the `main` method define? (2 marks)
- Q3** Consider the following code snippet:
- ```
int i = 500;
int n = i++%5;
```
- (a) State the values of `i` and `n` after the code is executed. (2 marks)
- (b) Compute the final values of `i` and `n` if instead of using the postfix increment operator (`i++`), you use the prefix version (`++i`). (2 marks)
- Q4** Refer to the array statement below:
- ```
char letters[] = {'A', 'B', 'C', 'D', 'E', 'F'};
```
- (a) What is the index of `'C'`? (1 mark)
- (b) What is the index for the last data in the array? (1 mark)
- (c) Write a statement in Java code to refer to element `'E'` in the array. (1 mark)
- (d) Write a statement in Java code to print all the data in the array. (2 marks)

- Q5** Given the following class, called NumHolder, write some code that creates an instance of the class, initializes two member variables, and then displays each values.

```
public class NumHolder {
    public int anInt;
    public double aDouble;
}
```

(5 marks)

- Q6** Rewrite the following program segment using if/else statements.

```
switch(car)
{
    case 1:
    case 2: System.out.println("Perodua Alzaa\n");
            break;
    case 3: System.out.println("Proton Exora\n");
            break;
    case 4: System.out.println("Naza Ria\n");
            break;
    case 5:
    case 6: System.out.println("Perodua Viva\n");
            break;
    default: System.out.println("Unknown\n");
}
```

(5 marks)

- Q7** Based on the statement below:

```
class Z {
    private int A, B;
    public double C (double b){
        B=b;
        return (B * B);
    }

    public int D (int a, int b){
        A=a; B=b;
        return (A * B);
    }
}
```

- (a) Identify class name, attributes and operations. (4 marks)
- (b) Initialize an object from the class z. Call the method C and D through the created object. (4 marks)
- (c) Explain the concept of constructor. (4 marks)

Q8 Explain whether method overloading is used in the following program.

```
class A {
    public void display( ){
        System.out.println("Java");
    }

}

public class B extends A {
    public void display(){
        System.out.println("Hi");
    }
}

class obj1 {
    public static void main (String[] args){
        B b = new B();
        b.display();
    }
}
```

(4 marks)

Q9 By using the following class programs, explain how polymorphism works in Java.

```
class School extends Building {
}

class Building extends Architecture {
    public void display(){
        System.out.println("Building");
    }
}

class Architecture {
    public void display(){
        System.out.println("Architecture");
    }
}

class obj {
    public static void main (String[ ] args ){
        School school = new School();
        school.display();
        Building building = new Building();
        building.display();
        Architecture architecture = new Architecture();
        architecture.display();
    }
}
```

(10 marks)

Q10 Based on the following GUI:

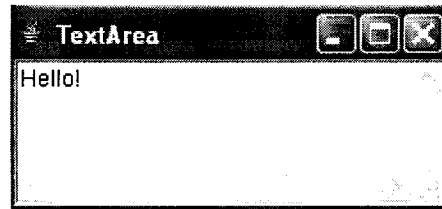


Figure Q10

Create a program which includes a class called `SampleTextArea`.

(Hints: There is a 4 row x 30 character text area containing "Hello!").

(15 marks)

Q11 Based on the following Calculator GUI:

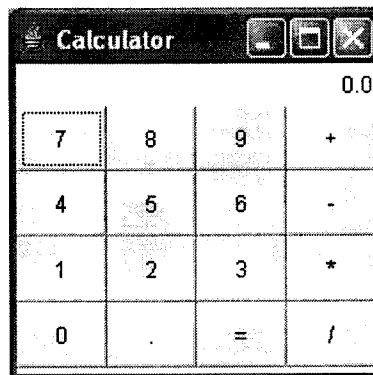


Figure Q11

Create a program using a grid layout to position the digit and operator buttons in a frame that contains a class called `CalculatorGUI`. There is a text field at the top of the frame (used to display the results) and a 4 by 4 grid of buttons. A label can also be used to display the results.

(30 marks)