

**INTI**  
International College Penang  
LAUREATE INTERNATIONAL UNIVERSITIES\*

**FINAL**  
Examination Paper

(COVER PAGE)

Session : January 2017

Programme : Diploma In Electrical And Electronic Engineering (DEEI)

Course : CSC2181: Object-Oriented Programming In Java

Date of Examination : 6 March 2017 (Monday)

Time : 2:00pm – 4:00pm Reading Time : Nil

Duration : 2 Hours

Special Instructions :

This paper consists of SIX (6) questions. Answer any FOUR (4) questions in the answer booklet provided. All questions carry equal marks.

Materials permitted : Nil

Materials provided : Nil

Examiner(s) : Chern Huey Rong

Moderator : Dr. Vincent Khoo Kay Teong

*This paper consists of 9 printed pages, including the cover page.*

INTI INTERNATIONAL COLLEGE PENANG

DIPLOMA IN ELECTRICAL AND ELECTRONIC ENGINEERING (DEEI)  
CSC2181: OBJECT-ORIENTED PROGRAMMING IN JAVA  
FINAL EXAMINATION: JANUARY 2017 SESSION

**Instructions:** This paper consists of **SIX (6)** questions. Answer any **FOUR (4)** questions in the answer booklet provided. All questions carry equal marks.

**Question 1**

(a) Write a Java statement to accomplish each of the following tasks:

- i) Declare variables sum and x to be of type int.
- ii) Assign 1 to variable x.
- iii) Assign 0 to variable sum.
- iv) Add variable x to variable sum, and assign the result to variable sum.
- v) Print "The sum is: ", followed by the value of variable sum.

(5 marks)

(b) List **FIVE (5)** Java programming language keywords.

(5 marks)

(c) Find the error in each of the following code segments, and explain how to correct it:

i)

```
int b[] = new int[ 10 ];  
for ( int i = 0; i <= b.length; i++ )  
    b[ i ] = 1;
```

ii)

```
int sum( int x, int y )  
{  
    int result;  
    result = x + y;  
}
```

iii)

```
void f( float a );  
{  
    float a;  
    System.out.println( a );  
}
```

iv) The following code should print the values 1 to 10:

```
n = 1;  
while ( n < 10 )  
    System.out.println( n++ );
```

v)

```
while ( c <= 5 )  
{  
    product *= c;  
    ++c;
```

vi)

```
if ( gender == 1 )  
    System.out.println( "Woman" );  
else;  
    System.out.println( "Man" );
```

(6 marks)

```
(d) public class Human {
        private String Name;
        private int Age;
        public Human(String Name, int Age) {
            this.Name = Name;
            this.Age = Age;
        }
    }

    public class Office {
        public static void main(String args[ ]) {
            Human a = new Human( );
        }
    }
```

Identify the error in the Java code above. Modify the code to fix the error.

(5 marks)

(e) A bank customer record contains the following information. Name, age, account number and balance. The developer of the program wants to apply information hiding on the account number and the balance. Write a possible declaration of class **Customer**.

(4 marks)

**Question 2**

- (a) `Car MyCar = new Car();`  
`MyCar.setValue("Proton", "Wira", "Red", 1997);`

With the information given above, write a possible declaration of class Car, its attributes and methods.

(5 marks)

- (b) A method Order can receive an item order and 2 items order. Show a possible Java code for this **method overloading**.

(5 marks)

- (c) `Appointment myAppointment = new Appointment( 9.30, "Wednesday", "Block A");`

Write the most appropriate constructor for Class Appointment.

(5 marks)

- (d) 2 4 8 16 32 64

Write a Java code using **for** loop to display this series.

(5 marks)

- (e) Trace the output of the following source code:

```
public class Q2 {
    public static void main(String[] args) {
        int count;
        for ( count = 1; count <= 10; count++ )
        {
            if ( count == 5 )
                break;

            System.out.println(count );
        }
        System.out.println( "Broke out of loop at count = " + count );
    }
}
```

(5 marks)

## Question 5

```
(a) public class Engineer {
        private String Name;
        private float Salary;
        private float Tax;

        //Code A
    }

    public class Test {
        public void CalculateTax(Engineer ElectricEngineer) {
            //Code B
        }
    }
}
```

The method CalculateTax( ) will calculate the Tax for an engineer. If the salary is less than 2500 there is no tax, else there will be a 10% tax. Based on this information complete the code for Code A and Code B.

(10 marks)

```
(b) public interface Movement {
        public void run();
        public void swim();
    }

    public abstract class Movement {
        public abstract void run();
        public abstract void swim();
    }
```

List **TWO (2)** differences between abstract class and interface.

(5 marks)

(c) Without using an **if statement**, find the smallest value among 5 numbers.

(5 marks)

(d) Explain with code example on how you prevent a class from being extended.

(5 marks)

## Question 6

```
(a) class Dog
    public class Dog {
        public final void Greeting() {
            System.out.println("Woof");
        }
    }
}
```

```
class Poodle
    public class Poodle extends Dog {
        public void Greeting() {
            System.out.println("Grrr");
        }
    }
}
```

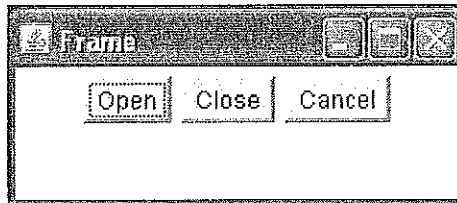
There is an error in this method overriding. Identify and explain the cause of the error.

(5 marks)

(b) What is casting? Show an example of type casting in Java.

(5 marks)

(c)



Write a Java code to create a GUI **exactly** as shown above.

(10 marks)

```
(d) public interface Movement {
    public void Swim();
}

public abstract class Food {
    public abstract String favoriteFood();
}
```

Class Cat uses both Movement and Food. Write a possible code for class Cat.

(5 marks)

**--THE END--**

