



RAJARATA UNIVERSITY OF SRI LANKA  
FACULTY OF APPLIED SCIENCES

B.Sc. (General) Degree in Applied Sciences  
Second Year - Semester I Examination – June /July 2018

COM 2305 – JAVA PROGRAMMING LANGUAGE

Time: Three (03) hours

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Answer all Questions.

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1.

- a. Distinguish between primitive data types and reference data types with examples. (6 marks)
- b. Explain the method *substring(index1, index2)* in String Class. State its function with an example. (5 marks)
- c. **“Implicit type casting is usually used for widening of data types”**. Explain its difference with respect to explicit type casting with an example. (6 marks)
- d. If  $A = 12$  and  $B = 25$ , find the value of  $A \& B$ . Show all the steps in your calculation. (8 marks)

(Total: 25 marks)

2.

- a. Explain the use of applets in web pages. (5 marks)
- b. Compare and contrast JFrame and JPanel objects with some example applications. (6 marks)
- c. Following program code is extracted from a Java program. If you compile this program, what can you see as the output? Explain the reason for your answer. (6 marks)

```

Interface Try{
    int x = 10;
}
Class sample implements Try{
    Public static void main(string args[])
    {
        x= 20;
        System.out.println(x);
    }
}

```

- d. Explain, with two examples, what are the two ways that Java exception objects can be created? Distinguish between them. (8 marks)

(Total: 25 marks)

3.

- a. **“Method overloading is one of the ways of achieving polymorphism”**. Do you agree with this statement? Justify your answer by explaining the idea of polymorphism. (5 marks)
- b. **“Inheritance enhances the reusability of a program”**. Do you agree? Discuss. (5 marks)
- c. Explain the output of the following program. (5 marks)

```

class A
{
    int i = 10;
}

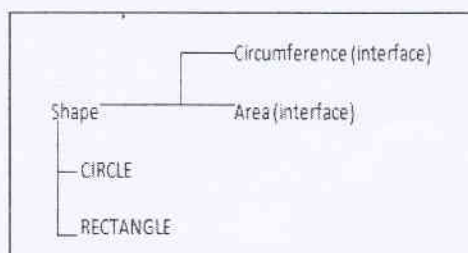
class B extends A
{
    int i = 20;
}

public class MainClass
{
    public static void main(String[] args)
    {
        A a = new B();

        System.out.println(a.i);
    }
}

```

- d. Consider the following hierarchy. Implement the hierarchy with the details given.



Circumference and Area are two interfaces which consist of `getCircumference()` and `getArea()` methods. Shape is the class which is inherited from the two interfaces. Another two classes are inherited from the Shape class where the both classes implement the interface methods within the class itself. (10 marks)

**(Total: 25 marks)**

4.

- Explain the Use of Interfaces in Java and mention how they differ from classes. (5 marks)
- “A Package can be defined as a grouping of related types”**. Explain what you can achieve from the packages. (6 marks)
- “Accessibility of the protected access modifier is higher than the private access modifier”**. Do you agree with this statement? Explain by mentioning the situations where you can access the class members defined with these modifiers. (6 marks)
- Write a Java program to calculate Factorial of a number. (8 marks)

**(Total: 25 marks)**

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