Reg. No.									

INTERNATIONAL CENTRE FOR APPLIED SCIENCES

(Manipal University)

II SEMESTER B.S. DEGREE EXAMINATION – JUNE 2016

SUBJECT: JAVA PROGRAMMING (CS 243)

(BRANCH: COMPUTER SCIENCE)

MONDAY, 13TH JUNE, 2016

Time: 3 Hours **Max. Marks: 100**

- ✓ **Answer ANY FIVE full Questions.**
- ✓ **All the Functions and Programs should be well documented**

1A. List and explain the primitive data types of Java.

1B. Explain with an example program labelled break and labelled continue statements in Java.

1C. With an example explain unsigned right shift operator.

(10+6+4 =20 marks)

2A. Java Is a Strongly Typed Language. Justify.

2B. Explain how interfaces are different from abstract classes.

2C. Create a class Student which inherits from Human class. Human class contains age and name initialized in its constructor. Human also contains a member method void Display() to print the instance variables. Class Student should contain a parameterized constructor which invokes superclass constructor in it. Also, it contains instance variables for holding marks of 3 subjects, average and grade. It should contain the following member methods:

- void SetMarks(int args[])
- void CalculateAverage()
  For calculating the average of marks
- char SetGrade() , For setting the grade according to the following condition
  Average >=75 grade A
  65>=average<75 grade B
  Average<65 grade I
- Override the Display method.

(4+6+10=20 marks)

3A. Illustrate user defined exception in java with an example.

3B. With a complete example program, explain dynamic dispatch method.

3C. Find errors in the following java program:

```
class A{
        public void static(string s[]) {
                int x;
                if(x==10) {
                        int y=20;
                        x=x*y;
                  }
                y=100;
               int bar=1 ;
               {
                    int bar=2;
                }
    }
}
```

(8+8+4 =20 marks)

4A.Write a java program to create a package myMathPack, which contains a class ComplexNumber with the methods to add and multiply two complex numbers. Show the usage of myMathPack package in a main program also mention the steps in package creation.

4B. Explain with examples, two different ways of achieving synchronization in multithreading?

(8+12=20 marks)

5A. Explain byte stream classes provided in java.io package with at least two low level stream classes in each. Also list any two important methods in each.

5B. Write a java program to copy one file to other using stream classes of java.io package

5C. List the different access specifiers used in inheritance. How are they useful?

(6+8+6=20 marks)

6A. What is object serialization? Explain with an example.

6B. Explain Applet skeleton program.

6C. When is a KeyEvent generated? List the different types of events and explain. Write a program to handle Keyboard Events. **(8+5+7 =20 marks)**

7A. Write a Java program to activate the standard file dialog box.

7B. Write a Java program to demonstrate various mouse events.

7C. Explain event delegation model in Java. **(7+5+7 =20 marks)**

8A. List and explain the steps to be followed to connect java program to database.

8 B. What is a Servlet? Explain the life cycle of a Servlet.

8C. Write a Swing applet to create 3 radio buttons red, green and blue and a label which displays the color selected when 1 of the radio buttons is clicked.

(7+5+8 =20 marks)