Reg. No.									

INTERNATIONAL CENTRE FOR APPLIED SCIENCES

(Manipal University)

II SEMESTER B.S. DEGREE EXAMINATION – NOV. 2017

SUBJECT: JAVA PROGRAMMING (CS 243)

(BRANCH: CS)

Thursday, 23 November 2017

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

✓ **Answer ANY FIVE Questions.**

1A. Explain the following Java features.
   a. Object oriented
   b. Robust
   c. Architectural neutral.
   d.Byte code

1B. With examples, explain and demonstrate the difference between right shift and unsigned right shift operator

1C. With syntax, explain the for each version of for loop in java. Write a program to find the sum of all elements of an integer array using for each version of for loop.

(8+6+6)

2A. How are objects passed as parameters to methods in Java? Explain with the help of an example.

2B. Explain constructors. With the help of an example , demonstrate overloading of constructors.

2C. What is a recursive function and what are its merits and demerits? Write a complete Java program to find the factorial of a number using recursion.

(6+8+6)

3A. With an example, justify the statement "A Super class variable can reference a sub class object".

3B. With relevant examples, explain two general forms of Super.

3C. What are the two different uses of the keyword *final* with Inheritance? Explain with the relevant example.

(5+8+7)

4A. Create a class called Balance containing instance variables name and balance. Include a parameterized constructor. Include a method show() which displays name and balance. Put the above in a package called BalPack. Write a program outside the BalPack package which instantiates the Balance class and calls method show().

4B. Is it possible to extend an interface? Explain it with a complete program.

4C. Differentiate between checked and unchecked exceptions. Write a program which contains one method which will throw IllegalAccessException and use proper exception handlers so that exception should be printed**,** when this method is called**.**

(7+6+7)

5A. What is an Exception in java?Explain how to display the description of an exception with an example.

5B. What is multithreading and how is it achieved in java? Write a program to demonstrate multiple threads. Each thread should display numbers from 1 to 5 in an interleaved fashion. Use proper exception handling mechanism.

5C. What are the two different ways of achieving synchronization in multithreading? Explain with an example.

(5+7+8)

6A. Write a program to copy the contents of one file to another using byte stream. The names of files are passed as command line arguments.

6B. Demonstrate serialization through a program which writes an object to a file and then reads the same.

6C. When is a KeyEvent generated? Explain different types of key events. Write a program to handle Keyboard Events.

(6+6+8)

7A. Write the steps required to access a database using JDBC.

7B. Illustrate anonymous inner class with the help of a program which display the message "mouse pressed" in the status bar of the applet viewer when the mouse is pressed.

7C. Explain the life cycle of an applet with the help of an applet skeleton.

7D. Explain the panel and the frame classes in detail **(5+3+8+4)**

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

8B. Explain the FlowLayout in detail.

8C. Explain the Servlet Interface. List the different methods declared by ServletContext Interface.

(8+5+7)