Reg. No.										

MANIPAL UNIVERSITY

SECOND SEMESTER B.S. (ENGG.) AND B.Sc. (APPLIED SCIENCES) DEGREE EXAMINATION – DECEMBER 2014

SUBJECT: JAVA PROGRAMMING (CS 243)

(BRANCH: COMPUTR/COMPUTER SCIENCE)
(NEW SCHEME)

Thursday, December 11, 2014

Time: 10.00 – 13.00 Hrs. Max. Marks: 100

✍ **Answer any FIVE full questions.**

1A. Explain the concept of method overloading in Java with an example.

1B. What are inner classes? Give an example program.

1C. Explain java buzzwords.

1D. Define a class called Employee with fields name, number, salary. Provide default, copy and parameterized constructor and a display function. Demonstrate this by writing a suitable main program.

(5+5+5+5 = 20 marks)

2A. What is instance variable hiding problem in inheritance? How do you solve this?

2B. Discuss short circuit operators of Java with examples.

2C. How would you declare 1D and 2D arrays in java? Also discuss how would you initialize them during declaration.

2D. Give a programming example for method overriding and dynamic method dispatch.

(5+5+5+5 = 20 marks)

3A. Write a package called p1 with a class called MaxMin. The class has two functions which determine maximum and minimum element in one dimensional integer array. Use this package in main program to read an array and print its maximum and minimum element.

3B. Compare interfaces with abstract classes and normal classes.

3C. Determine the output of the following program. Justify your answer.

```
class Demo {
static void procA() {
try {
System.out.println("inside procA");
throw new RuntimeException("demo");
} finally {
System.out.println("procA's finally");
}
}
```

```
static void procB() {
try {
System.out.println("inside procB");
return;
} finally {
System.out.println("procB's finally");
}
}

static void procC() {
try {
System.out.println("inside procC");
} finally {
System.out.println("procC's finally");
}
}
public static void main(String args[]) {
try {
procA();
} catch (Exception e) {
System.out.println("Exception caught");
}
procB();
procC();
}
}
```

3D. What is the benefit of exception handling? Write a program which throws and handles ArrayIndexOutOfBoundsException.

(5+5+5+5 = 20 marks)

4A. Explain the producer and consumer problem and provide the right solution.

4B. Explain following methods of threads, with syntax:

i) isAlive ii) wait iii) notify iv) setName v) setPriority

4C. Explain applet life cycle methods with applet skeleton.

(10+5+5 = 20 marks)

5A. What is serialization? Explain with an example program.

5B. Write a program which scrolls a message in the applet, left to right.

5C. Write a note on any five Event classes used in Event handling.

(5+5+10 = 20 marks)

6A. Discuss how scrollbar can be created and used in Java AWT program.

6B. What are anonymous inner classes? Give an example program.

6C. Distinguish between AWT and Swings.

6D. Explain borderlayout with an example program.

(5+5+5+5 = 20 marks)

7A. Write a JApplet to add and display sum of two numbers input through textbox.

7B. Write a Java program to insert four records into a student database with name,regnum and semester as fields.

(10+10 = 20 marks)

8A. Write a Servlet program to read two numbers from client side and display sum of them.

8B. Give servlet lifecycle. Compare them with CGI. Explain any two servlet API classes.

(10+10 = 20 marks)