Reg. No.										

MANIPAL INSTITUTE OF TECHNOLOGY
MANIPAL
(A constituent unit of MAHE, Manipal)

FOURTH SEMESTER B.Tech. DEGREE EXAMINATION

SUBJECT: CSE - 4308 Programming in Java (Open Elective)

Time: 3 Hour Max. Marks: **50**

Instructions to Candidates

- Answer ALL of the following questions.

Q1. Demonstrate the working of labelled continue and break statements in nested loops with the help of example programs. (4)

Q2. Write a program to implement Time class with 2 data members: hours and minutes. Write parameterized constructor to initialize the data members. Write display method to display the Time class object. Write a method sum to add any 2 Time type objects and return the resultant object. Write main() method in a separate class to demonstrate the working of Time class. (3)

Q3. Differentiate between type conversion and type casting with an example for each. (3)

Q4. What is meant by instance variable hiding? How to overcome it? Illustrate with relevant code segment/snippet. (3)

Q5. With relevant examples, explain two general forms of Super. (4)

Q6. Explain the following Java Buzzwords.

a. Object oriented
b. Distributed
c. Architectural neutral (3)

Q7. Create a class called Box containing instance variables: width, height and depth. Include a parameterized constructor to initialize the instance variables. Include a method showvol() which computes and displays the volume of the box. Put the above in a package called BoxPack. Write a program outside the BoxPack package which instantiates the Box class and calls method showvol (3)

Q8. Write a java program to input the order of the matrix A (MXN) and Allocate memory. Input the elements to the matrix A and also display the elements of the matrix using for-each loop in a matrix form. (3)

Q9. Distinguish between throw and throws clause. Illustrate user defined exception in java with an example. (4)

Q10. 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 10. Use proper exception handling mechanism. (4)

Q11. Explain 'interfaces' in java with an example? Differentiate between interface and abstract class. (3)

Q12. Write a Javafx application to demonstrate the working of Alpha Beta buttons. Create 2 buttons with text "Alpha" and "Beta" displayed in the button respectively. Handle the event for these buttons in such a way that for "Alpha" button "Alpha is pressed" message should be displayed at the label. Similarly, when "Beta" button is pressed "Beta" message should be displayed at the label. Make use of Flow Pane to place all these controls. (3)

Q13. Write a program to implement Shape class with 2 data members: width and height. Write parameterized constructor to initialize the data members. Define an abstract method area() to compute the area of the shape. Derive 2 more classes Rectangle and Triangle from the Shape class. Define constructor under these two classes which in turn calls superclass constructor. Override the method area() under these two classes to compute the areas of Rectangle and Triangle respectively. Write a separate Demo class with main() method which creates the objects of Triangle and Rectangle classes and demonstrates the working of Dynamic method dispatch using Shape class. (4)

Q14. Explain exception handling mechanism in terms of five keywords involved in it. (3)

Q15. Write a complete program which depicts the JavaFX skeleton with proper comments. (3)