Reg. No.										

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

III SEMESTER B.TECH.(CSE) MAKE-UP EXAMINATIONS, DEC 2018

SUBJECT: **OBJECT ORIENTED PROGRAMMING** [CSE 2104]

(31/12/2018)

Time: 3 Hours MAX. MARKS: 50

Instructions to Candidates:

- Answer **ALL** the questions.
- Missing data may be suitably assumed.

1A. Explain: i) Encapsulation ii) Polymorphism **2M**

1B. With an example, explain labelled continue statement. **2M**

1C. Define a class "Employee" with two members namely empNum(int) and empSalary(double). In the 'main' method create an array of four Employee objects. Assign values to instance variables of all objects by taking input from the user. Show the usage of length property of the Employee array. Also display the members of all the four objects. **3M**

1D. Explain with example – i)final ii) finally iii) finalize . **3M**

2A. A company pays its employees on a weekly basis. The employees are of three types: i) Salaried employees are paid a fixed weekly salary regardless of the number of hours worked, ii) hourly employees are paid by the hours worked and receive overtime pay (i.e., 1.5 times their hourly salary rate) for all hours worked in excess of 40 hours, iii) commission employees are paid a percentage of their sales. Design the class hierarchy, include the constructors in each class with appropriate instance variables, make the instance variables private and method to print the employee name and salary. Write a test class to show all the functionalities. Use dynamic method dispatch. **4M**

2B. Explain two uses of super keyword. Explain with an example program, the order of execution of constructors in case of inheritance. **3M**

2C. Define a class Maximum with the following methods

i) max (which finds the maximum in an array and returns it)

ii) max (which finds the maximum in a matrix and returns the result)

Place this in a package called p. Let this package be present in a folder **3M**

called “myPack”, in your present working directory. Write a main method to use the methods of Max class in p1. Write and explain the command you use to create package.

3A. Explain two ways of creating thread with an example program. **3M**

3B. Explain the modern way of suspending, resuming and stopping thread with an example program. **4M**

3C. What is an interface and explain its use. Write the general form of an interface. Explain the use of interface reference with an example. **3M**

4A. Write a program to display the listing of a given directory and its subdirectories using recursion. **3M**

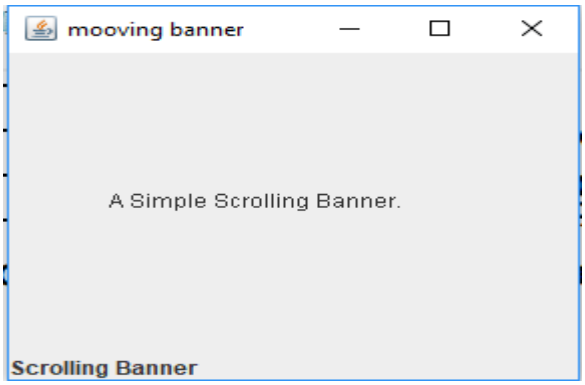
4B. Define a generic List class with a constructor and three methods- deleteFront, insertRear and search, to implement a singly linked list and show the use of the generic class for Integers and Doubles. **4M**

4C. Explain 3 generic restrictions with examples. . **3M**

5A. Explain event handling mechanism with a specific example in java. **3M**

5B. Briefly explain the two direct subclasses of Throwable?
Explain multi-catch feature with an example program. **3M**

5C. Write a swing application program to show the scrolling banner. GUI should be as shown below. The message should be scrolled from right to left through a thread. ‘Scrolling Banner’ should be displayed in the lower most label. Use the event dispatching thread to display the GUI.



4M

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