Reg.No										

Manipal Institute of Technology

(Constituent Institute of Manipal University)

Manipal – 576 104

THIRD SEMESTER MCA END SEMESTER EXAMINATIONS – DECEMBER, 2013

SUBJECT: –JAVA PROGRAMMING (MCA-523)

05/12/2013

TIME: 3 HOURS] **[MAX.MARKS: 50**

Instructions to Candidates:

- **Answer any 5 FULL questions.**
- **All questions carry equal marks.**
- **Missing data if any may be suitably assumed and mention your assumptions.**
- **Standard notations are used.**

1A. Write a menu driven java program to perform the following on an entered string through the keyboard:
(i) Reverse the string and sort its characters in ascending order.
(ii) Count and display the frequency of a character 'i' in that string
(iii) Replace vowels present in the string with 'A'.
(iv) Display the message if the string ends with a word "pal".

1B. Differentiate between automatic type conversion and type casting with an example.

1C. Write any two points to justify that Java is robust. (5+3+2)

2A. Write a program to generate random integers between 0 and 10 and synchronize three threads to display a) the factorial of randomly generated integers b) display the even integers generated c) display odd numbers generated.

2B. Define an user defined exception "NoCharMatchException" that is thrown when an entered character is 'N' or 'n'. Use this exception while accepting characters from the keyboard and store them in an array and display.

2C. Differentiate between an inner class and a class with suitable examples. (5+3+2)

3A. Write a Server program to read the file content, the name of the file is sent by the client and replace each character read by its next character (e.g., a is replaced with b, b is replaced with c and so on) and write the same onto a new file "encrypt.txt".

3B. Passenger class has details like name, starting point of travel, destination, age, amount paid, date of travel and Airline class has details like Flightname, number, route, capacity and type. Use proper constructors and methods to display air-ticket for a journey in a neat format. Catch exceptions if any.

3C. Read an integer from the keyboard and display whether it is a prime or not. (5+3+2)

4A. Item database is created in MS-Access to store the following information: item name, item number, stock, and unit price. Write a menu driven Java program to do the following: (a) Insert a new record into the database. (b) Display all the records. (c) Delete a particular record. (d) Update a particular record. (e) Exit.

4B. Accept a directory's name through the command line and display all the files present under that directory by using File class methods.

4C. Write a program to use method overloading in comparing any two integers or any two Strings. (5+3+2)

5A. Write a program to display a bill containing Company name, Bill no, Customer information (name, address, telephone) and the details of the items (like itemno, description, unit, Price, qty, Amount, Tax Rate, Tax amount and Total amount) purchased by a customer. Define a base class Item and derive a class Taxable_item which will be using an interface Bill. Model this relationship by using proper constructors and methods to calculate the amount to be paid by that customer.

5B. Explain the uses of "super" keyword with an example.

5C. What is RMI? Specify the name of one interface and one class along with their use. (5+3+2)

6A. Write a java program to accept a filename from the command line, write multiple strings to that file till user types "stop". Read the content using a byte stream and display them in uppercase characters.

6B. Write a program to generate Fibonacci series with recursion.

6C. What will be the output of the following segments and why?

a)
```
class LoopEg
{ public static void main(String a[])
    { for (int x=0,j=0;x<5 && x<10;j++, x++)
        {++x;System.out.println("X is " +x);}
    }}
```

b)
```
class OwnExcpt
{ static void throwExcept()
    { try
        { throw new MyExcept();
    } catch(MyExcept e)
        { System.out.println(e);}
}
  public static void main(String arg[])
  { OwnExcpt throwExcept();}
  }
Class MyExcept extends Exception
  { MyExcept()
      { System.out.println("my except is thrown");}}
```

(5+3+2)