Manipal Institute of Technology, Manipal

(A Constituent Institute of Manipal University)

III SEMESTER B.TECH (COMPUTER SCIENCE AND ENGINEERING)

END SEMESTER (Make up) EXAMINATIONS, JAN 2016

SUBJECT: CSE - 2104 OBJECT ORIENTED PROGRAMMING
REVISED CREDIT SYSTEM

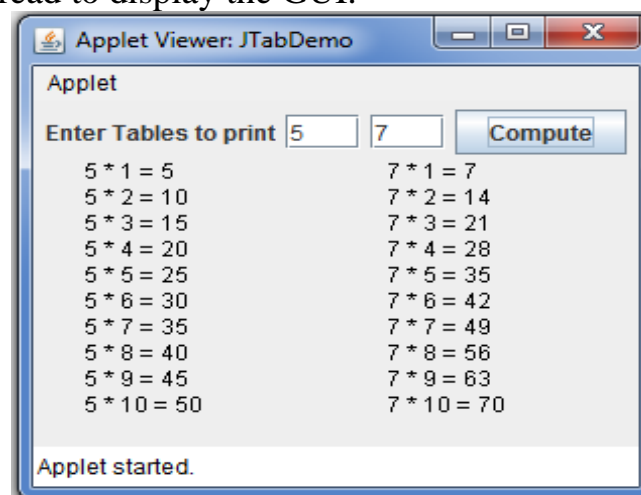Time: 3 Hours   MAX. MARKS: 50

Instructions to Candidates:

❖ Answer **ALL** the questions.
❖ Missing data, if any, may be suitably assumed.

1A. Explain the following traits of OOP with example:
    i) inheritance   ii) encapsulation   iii) polymorphism   3M

1B. i) With an example, explain labelled break statement.   2M
     ii) Explain garbage collection and finalize ( ) .   2M

1C. Define class. Write the general form of a class. Explain with example how a
    class is defined and used.   3M

2A. Write a superclass *Worker* and subclasses *HourlyWorker* and
    SalariedWorker. Every worker has a name and a salary rate. Write a
    method   *double computePay(int hours)* that computes the weekly pay for
    every worker. An hourly worker gets paid the hourly wage for the actual
    number of hours worked, if hours is at most 40. If the hourly worker
    worked more than 40 hours, the excess is paid at 1.5 times the wage. The
    salaried worker gets paid the hourly wage for 40 hours, no matter what the
    actual number of hours is. Supply a test program that uses polymorphism to
    test these classes and methods.   5M

2B. Explain with example program, the order of execution of constructors in
    case   of inheritance .   3M

2C. Summarize the various access levels in case of packages.   2M

3A. Explain with example the multi-catch feature.   2M

3B. Explain with example :   a) throws   b)finally   3M

3C. Write a complete program for suspending, resuming and stopping of threads
     using wait( ) and notify( ) .   5M

4A. Write a complete program to write binary data (integer, double, Boolean)
     to a file and read the same and print on the console using DataInputStream
     and DataOutputStream   classes.   4M

4B. Create a generic interface with push,pop, isEmpty, isFull methods for stack
     and a generic stack class to implement the same with necessary instance
     variables and constructor.   4M

4C. Write a driver class to create a stack of integers using the class defined in
     4B. Perform all operations.   2M

5A. Explain with syntax and example the following methods:
     i) substring( )   ii) regionMatches( )   2M

5B. Explain the methods to draw the following shapes with their constructors
     and example: i) line   ii) rectangle   iii) circle   3M

5C. Develop a swing applet which contains a label, two text fields and a button.
     On entering two values and pressing the button, the two multiplication
     tables must be displayed as shown in the GUI shown below. Use the event
     dispatching thread to display the GUI.   5M

X * X * X * X