Fifth Semester B.Tech. Degree Examination, December 2015

(2013 Scheme)

13.506 : OBJECT ORIENTED DESIGN AND JAVA PROGRAMMING (R)

Time : 3 Hours

Max. Marks : 100

PART – A

Answer **all** questions. **Each** question carries **4** marks.

1. What is Class Diagram ? What is its significance in object oriented modeling ?

2. Differentiate between method overloading and method overriding in Java.

3. How are parameters passed to a Java Applet ?

4. What is Layout manager ? What is its role in Java based GUI design ?

5. What are the features of Java Beans ?   **(4×5=20 Marks)**

PART – B

Answer **one** question from **each** Module.

6. Explain the Jacobson Methodology in detail.   20

OR

7. Suppose we want to develop software for an alarm clock. The clock shows the time of day. Using buttons, the user can set the hours and minutes fields individually, and choose between 12 and 24 -hour display. It is possible to set one or two alarms. When an alarm fires, it will sound some noise. The user can turn it off, or choose to 'snooze'. If the user does not respond at all, the alarm will turn off itself after 2 minutes. 'Snoozing' means to turn off the sound, but the alarm will fire again after some minutes of delay. This 'snoozing time' is pre-adjustable. Model this clock with a use case diagram.   20

8. a) Explain the different access specifiers in Java with examples. **10**

   b) Write a program to read a string and count the number of vowels, consonants and digits in the string. **10**

OR

9. a) How user defined Exceptions are created in Java ? Define a class named 'number' which consists of a method namely XYZ() that reads two integers a and b and checks whether a is a factor of b or not. If yes, it shows a message that a is a factor of b. Otherwise the method raises a user defined exception namely 'Indivisibility Exception' which must be handled by giving a suitable message. **14**

   b) What are Abstract Classes ? What are they used for ? **6**

10. a) What is meant by Thread Synchronization ? Why is it required in multithreaded programming ? **8**

    b) Write a socket program in java to implement a client program and a server program in which the client sends a string to the server and the server gives an indication whether the string is a palindrome or not. Use connection oriented sockets. **12**

OR

11. a) Create a Java Applet that reads two sentences and computes the number of occurrences of each word in the first sentence within the second sentence. **10**

    b) Explain the Java Applet Life Cycle. **10**

12. a) What is Event Listener Interface ? Explain. **10**

    b) Create a simple GUI that reads one number (through text boxe) and display the sum of the factors of the number. Use Swing components. **10**

OR

13. a) What is JDBC-ODBC Bridge ? What are its advantages ?   6

   b) Create an application for managing a library with the following features.   14

   i) Provision to store the details of Book Borrowers (Name, ID, BookNo. Issue date) in a database.

   ii) Provision to display the list of books borrowed by a specific person on giving the id of the person.

   Make suitable assumptions on the types of various fields of the database. Use JDBC to connect the program to the database. Assume any Database like Oracle. MySQL etc.

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