(Following Paper ID and Roll No. to be filled in your Answer Book)

PAPER ID : 0113 Roll No. | | | | | | | | | | |

B. Tech.

(SEMESTER-III) THEORY EXAMINATION, 2012-13

OBJECT ORIENTED SYSTEMS

Time : 3 Hours] *[Total Marks : 100*

Note : Attempt **all** the Sections.

Section – A

Attempt **all** questions. $10 \times 2 = 20$

1. (a) Name the different types of inheritance in Object Oriented Programming ? (2)

(b) Explain the following terms : generalization and aggregation. (2)

(c) Name any two Object Oriented Programming languages. (2)

(d) Draw a state chart diagram for an electric bulb. (2)

(e) Explain the following terms : (2)

(i) Meta data

(ii) Constraints

(f) Explain the following terms with respect to use case diagram : (2)

(i) Extends

(ii) Includes

(g) In exception handling, if exception occurs, then control goes to the catch block. After the catch block is executed, where does the control go ? Select the correct answer. Note : There could be more than one correct answers. (2)

(i) Next line after the catch block.

(ii) Next line in the try block after the line where the exception occurred.

(iii) Next catch block if there are multiple catch blocks.

(iv) Program crashes and there is runtime error.

(h) Write a brief note on AWT ? **(2)**

(i) What is the role of an activity diagram ? **(2)**

(j) Can a constructor be virtual ? Explain. **(2)**

Section – B

Attempt any **three** question. **3 × 10 = 30**

2. (a) (i) Write a class employee with two data members :

(a) employeeName

(b) employeeNumber

(ii) Write two constructors to instantiate this class

(a) constructor with no parameters

(b) parameterized constructor

(iii) Write get and set methods for the class.

(iv) In 'main' create two objects of class employee.

(a) For first object accept the input from console and set the data members with the values.

(b) For the second object, set the values with the help of parameterized constructor.

(v) Display the values of employeeNumber and employeeName for both the objects on the output screen.

(b) Object oriented programming is better than procedural programming. Give arguments 'for' or 'against'.

(c) Write a short note on Java Servlets.

(d) Define polymorphism and explain runtime polymorphism with an example.

(e) Explain operator overloading in C++ with an example.

Section – C

Attempt **all** questions. **5 × 10 = 50**

3. Use a two dimensional array to solve the following problem : A company has four sales people (1 to 4) who sell five different products (1 to 5). Once a day, each salesperson passes in a slip for each type of product sold. Each slip contains the salesperson number, the product number and the total Rupee value of that product sold that day. Thus each salesperson passes in between 0 and 5 sales slips per day. Assume that the information from all the slips for the last month is available. Write an application that will read this information for last month's sales and summarize the total sales by salesperson and by product. All the totals should be stored in two dimensional array sales. After processing all the information for the last month, display the results in tabular format, with each column representing a particular salesperson and each row representing a particular product. Cross total each row to get the total sales for each product for the last month. Cross total each column to get the total sales by the sales person for last month. Your tabular output should include these cross totals to the right of totaled rows and to the bottom of the totaled columns. **10**

4. Explain networking facilities provided by Java language. **10**

OR

What is JDBC/ODBC bridge ? How is the connection established ? What should be done if the connection fails ?

5. Draw Use case diagram for a railway reservation system. **10**

OR

Draw a State Chart diagram for a chess game.

6. Write a class with two methods each having the same name say 'Add'. One method should accept two integers as parameters and return their sum. The other method should accept two strings as parameters and return the string formed by concatenation of the two strings. In 'main' call the method 'Add' first by passing integer parameters and then by passing string parameters and obtain their return values in 'main' and print them. Show that the overloaded method calls the appropriate method according to the parameters passed to it. **10**

7. Compare different OMT (object modeling techniques) and methodologies with examples. **10**