Printed Pages : 4 **ECS305**

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

PAPER ID : 0115 **Roll No.** | | | | | | | | | | |

B. Tech.

(SEM. III) ODD SEMESTER THEORY

EXAMINATION 2010-11

OBJECT ORIENTED SYSTEMS

Time : 3 Hours *Total Marks : 100*

Note :—Attempt all questions.

1. Attempt any **four** parts of the following :— **(5×4=20)**

   (a) Describe object oriented modeling. How is affect the software development ?

   (b) What do you mean by encapsulation ? Explain.

   (c) Differentiate generalization and aggregation with example.

   (d) Explain constraints and abstraction by taking a suitable example.

   (e) What do you mean by multiple inheritance ? Explain with an example.

   (f) What do you mean by link and association ? Explain with example.

2. Attempt any **four** parts of the following :— **(5×4=20)**

   (a) What do you mean by event trace diagram ? Explain.

(b) What do you mean by condition in a state diagram ? Explain with suitable example.

(c) What is the role of operations in state diagram ? Differentiate between activity and action.

(d) How concurrency within state of single object be represented ?

(e) Explain state generalization by taking suitable example.

(f) What is synchronization of concurrent activities ? Give example in your explanation.

3. Attempt any **two** parts of the following :— **(10×2=20)**

(a) Write short notes on the following :

(i) SA/SD

(ii) JSD.

(b) Define data flow and control flow. Prepare a data flow diagram for computing the mean of a sequence of input values. A separate control input is provided to reset the computation. Each time a new value is input, the mean of all values input since the last reset command should be output. Since you have no way of knowing how many values will be processed between resets, the amount of data storage that you use should not depend on the number of input values. Detail your diagram down to the level of multiplications, divisions, and additions.

(c) What is OMT methodology ? Discuss the phases of OMT methodology.

4. Attempt any **two** parts of the following :— **(10×2=20)**

(a) Why is Java known as platform neutral language ? Write a program in Java with class Rectangle with the data fields width, length, area and colour. The length, width and area are of double type and colour is of string type. The methods are set_length( ), set_width( ), set_colour( ) and find_area( ). Create two object of Rectangle and compare their area and colour. If area and colour both are the same for the objects then display "Matching Rectangles", otherwise display "Non-matching Rectangles".

(b) (i) What are threads ? Briefly explain the difference between a thread and a process.

(ii) Develop an applet that receives three numeric values as input from the user and then displays the largest of the three on the screen.

(c) Explain how a Java GUI component handles the event with an example. Write a program in Java which creates three buttons labelled "Yes", "No" and "Undecided". Each time one is pressed, a message is displayed that reports which button has been pressed.

5. Attempt any **two** parts of the following :— **(10×2=20)**

(a) (i) Describe the different types of JDBC drivers with examples.

(ii) Write an interactive program in Java that can update and delete employee information via an employee database using statement class. Make suitable assumptions yourself.

(b) Describe the difference between CGI and Servlet. Explain how a Servlet handles HTTP requests via an example. Write a simple Servlet program displaying the current Date for each request.

(c) Write short notes on any **two** :—

(i) Java AWT

(ii) Dynamic Billboard Applet

(iii) Java Beans.