

5. Write short notes on any **two** with suitable example : (10×2=20)

- JAVA Beans
- JDBC
- JAVA Servlets

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

PAPER ID : 0113

Roll No.

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B. Tech.

(SEM. III) THEORY EXAMINATION 2011-12

OBJECT ORIENTED SYSTEMS

Time : 3 Hours

Total Marks : 100

Note :- (i) Attempt **all** questions.

(ii) Make suitable assumptions if necessary.

1. Attempt any **two** parts : (10×2=20)

- What do you mean by an object ? Explain. Discuss the various characteristics of objects with suitable example.
 - What is modeling ? What are the purposes served by the models ? Discuss with an example.
- What is the difference between a link and an association ? What is their significance in object modeling ? Discuss.
 - What do you mean by generalization and inheritance ? Use some example to explain these concepts.
- Write short notes on the following with suitable example and their significance to object oriented modeling using diagrams : (i) Multiplicity (ii) Role names (iii) Ordering (iv) Qualification.

2. Answer any **two** parts : (10×2=20)

(a) (i) What do you mean events ? How events are modeled ? Give the event trace diagram for phone call.

(ii) Write short notes on the *activity* operation and *action* operation with suitable example and diagrams.

(b) (i) Define state. Give state diagram for phone line.

(ii) Place the following event classes into generalization hierarchy with inheritance of event attributes: pick operation, character input, line pick, circle pick, box pick.

(c) Describe the following with an example using a diagram :

(i) State generalizations

(ii) Concurrency within an object

(iii) Automatic transitions

(iv) Sending events.

3. Answer any **two** parts : (10×2=20)

(a) 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 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.

(b) (i) Discuss use of nested data flow diagram with an example using proper diagrams.

(ii) Write a short note on the relation of functional to object and dynamic models.

(c) (i) Describe the JSD methodology with suitable example.

(ii) Write short notes on *derived attributes* and *leveling* with the help of an example and proper diagram.

4. Answer any **two** parts : (10×2=20)

(a) (i) What are features of JAVA that makes it suitable for object oriented programming ? Discuss.

(ii) Discuss various types of data types available in JAVA. Explain with suitable examples.

(b) (i) Write a note on JAVA 'APPLET'.

(ii) Write short notes on constructors and destructors in JAVA with some example.

(c) Write a program in JAVA to display the frequency of vowels in a given sentence. The program should display the vowels with maximum and minimum frequencies. Also give algorithm for the same.