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RN-8205

B. E. II (Sem. IV) (Comp.) Examination

May / June – 2010

Object Oriented Concepts & Programming (Institute Elective - I) (GTU)

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

Instruction :

નીચે દર્શાવેલ ☛ નિશાનીવાળી વિગતો ઉત્તરવહી પર અવશ્ય લખવી.
Fillup strictly the details of ☛ signs on your answer book.

Name of the Examination :

☛ B. E. 2 (Sem. 4) (Comp.)

Name of the Subject :

☛ Object Oriented Concepts & Program. (Institute Elective - 1) (GTU)

☛ Subject Code No. : 8 2 0 5 ☛ Section No. (1, 2,.....) : 1&2

Seat No. :

Student's Signature

SECTION - I

1 (a) Explain Entry and Exit actions is state diagrams. **5**

OR

(a) What do you mean by aggregation ? What is the difference between Aggregation and Association ? **5**

(b) What do you mean by object-orientation ? Which are the characteristics of OO approach ? **8**

OR

(b) (i) Which are the steps performed in constructing an object model while analyzing the requirements ? **4**

(ii) Which are the purpose of modeling ? **4**

(c) Prepare a class diagram for a graphical document editor that supports grouping. Assume that a document consists of several sheets. Each sheet contains drawing objects, including text, geometrical objects and groups. A group is simply a set of drawing objects, possibly including other groups. A group must also contain at least two drawing objects. A drawing object can be a direct member of at most one group. Geometrical objects include circles, ellipses, rectangles, lines, and squares. **7**

2 (a) Discuss various modeling techniques to model software. Show the relationships among the models. **8**

OR

(a) (i) Explain qualified association class with example. **5**

(ii) Discuss abstraction in brief. **3**

(b) Consider ATM network application. Draw the state diagram for class ATM. **7**

3 (a) Define the following : (any **five**) **10**

(1) Delegation

(2) Abstract class

(3) Multiple inheritance

(4) Events in dynamic modeling

(5) Actor

(6) Functional modeling.

(b) Prepare a data flow diagram for computing the volume and surface area of a cylinder. Inputs are the heights and radius of the cylinder. Outputs are volume and surface area. **5**

SECTION - II

4 (a) Attempt following : **10**

(1) Give drawbacks of procedure - oriented programming. **2**

(2) Enlist four basic sections of a typical C++ program. **2**

(3) What is reference variable ? Give prototype. **2**

(4) Explain scope resolution operator of C++. **2**

(5) Explain setw manipulator with example. **2**

(b) Explain basic concepts of object-oriented programming. **8**

5 (a) Explain operator overloading. Write a C++ program which demonstrates overloading binary operators. **8**

OR

(a) What is function overloading ? Write a C++ program which demonstrates function overloading. **8**

(b) What is virtual function ? Write a C++ program which demonstrates the use of virtual function. **8**

OR

(b) What is friend function ? Write a C++ program which demonstrates friend function. **8**

6 Attempt any **two** : **16**

(1) What is copy and parameterized constructor ? Explain with example.

(2) Explain types conversions.

(3) Explain virtual base calss. Write a C++ program which demonstrates use of virtual base class.

(4) Explain multilevel inheritance. Write a C++ program which demonstrates the use of multilevel inheritance.
