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53 (IT 401) OOPD

2015

**OBJECT ORIENTED PROGRAMMING
AND DESIGN**

Paper : IT 401

Full Marks : 100

Time : Three hours

**The figures in the margin indicate
full marks for the questions.**

Answer **any five** questions.

1. (a) What is a friend function? What are the merits and demerits of using friend functions? 10
- (b) Can we have more than one constructor in a class? If yes, explain the need for such a situation. 10
2. (a) A friend function cannot be used to overload the assignment operator =. Why? 10
- (b) Why do we need virtual function? 10

Contd.

3. (a) What is operator overloading? Illustrate operator overloading concept to concatenate strings. 10
- (b) What is data hiding? What are the different mechanisms for protecting data from the external users of a class objects? 10
4. Write an interactive menu-driven C++ program that will create a datafile containing the list of telephone numbers and implement the following tasks. 20
- (i) Determine the telephone number of the specified person.
- (ii) Determine the name if a telephone number is known.
- (iii) Update the telephone number wherever there is change.
5. (a) Write a program that illustrate the application of multiple catch statements. 10
- (b) How is polymorphism achieved at run time? Explain with coding. 10
6. (a) Distinguish between overloaded function and function template. 10

(b) Explain the concept of 'this' pointer. 5

(c) In procedure oriented programming all data are shared by all functions. Is this statement TRUE ? Justify your answer. 5

7. Write short notes on : 4x5=20

(i) Sequence Diagram

(ii) Class templates

(iii) Inheritance

(iv) Class Diagram

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