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53 (IT 401) OOPD

2014

## OBJECT ORIENTED PROGRAMMING & 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 out of seven.*

- (a) Explain the concept of friend function and friend class by giving examples. 10

(b) Briefly explain the working of inline functions. Also discuss their merits and demerits. When should functions be declared inline? 10

Contd.

2. (a) Explain the working of the following manipulators with example. 10

(i) `setbase ( )`

(ii) `setprecision ( )`

(iii) `ws`

(iv) `setfill ( )`

(v) `setw ( )`

(b) Write a program that takes a string from the command line input and takes another input of character from the user and searches if the character exists in the string. If yes, count the number of times the character occurred in the string. 10

3. (a) What is a virtual table? How does it help in implementing dynamic polymorphism? Explain with an example. 10

(b) What is the difference between deep copy and shallow copy? Explain with an example.

10

4. (a) Write a function that would take two array as input and produce a third array by appending one to the other. (use pointer to access the array). 10
- (b) What is unary operator ? List out the different operators involved in the unary operators. 10
5. (a) Distinguish between external storage classes and register storage classes. 5
- (b) Do you use statement terminator (;) after any loop ? Justify your answer with example. 5
- (c) What is exception handling ? Explain the exception handling facility provided in C++. 10
6. (a) What are constructors ? Can they be overloaded ? Explain with an example. 10
- (b) What are the different types of inheritance ? Explain each of them. 10

7. (a) Write a program to overload binary + and += operators using friend functions. 10
- (b) Explain static data member and static member function with an example. 5
- (c) What does this pointer point to? What are the applications of this pointer? 5