

**END-TERM EXAMINATION  
SECOND SEMESTER [MCA] – MAY 2005  
OBJECT ORIENTED PROGRAMMING**

Paper Code: MCA-110

Time: 3 Hours

Marks: 60

- Q. 1 (a) What are generic pointers? Where they can be used? (8 x 2.5=20)  
(b) Differentiate between data encapsulation and data hiding.  
(c) Explain the different usage of Scope Resolution operator.  
(d) Differentiate between function overloading and function overriding.  
(e) Explain virtual classes. Where this concept is used?  
(f) What are namespaces? What is the purpose of it?  
(g) What are persistent objects? Explain.  
(h) What are destructors? Explain their usage.

Unit – I

- Q. 2 (a) Explain each of the operators that are available in C++ but not in C. 5

(b) How object oriented paradigm differ from procedural programming paradigm?  
Explain. 5

- Q. 3 (a) How inputs and outputs are taken/ displayed in C++? Differentiate between the input/output operators in C++ and the input/output functions used in C. 5

(b) Write a program in C++ to create and sort an array using insertion sort method. The array should be created dynamically. 5

Unit – II

- Q. 4 (a) What are constructors? Can they be overloaded? Explain with an example. 5

(b) Write a program in C++ to copy one string into another using copy constructor. 5

- Q. 5 (a) Write a program in C++ to calculate "n" to the power "p" using default value parameter for "p". 5

(b) How garbage collection is done in C++? Explain the role of delete operator for the purpose. 5

Unit – III

Q. 6 (a) What are the different types of inheritance? Explain each of them. 3  
(b) Write a program of your choice to show the implementation of multiple inheritance. 7

Q. 7 (a) Explain the rules of operator overloading? What operators you cannot overload? 3

(b) Write a program to overload binary + and += operators using friend functions. 7

Unit – IV

Q. 8 (a) What are streams? Explain different stream objects? 3

(b) Write a program to read the contents from a file and then copy the contents to another file. 7

Q. 9 (a) How exception handling is done in C++? Explain with an example. 5

(b) What are templates classes? Explain with an example. 5

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