

# END TERM EXAMINATION

SECOND SEMESTER [MCA] MAY-JUNE 2012

Paper Code: MCA 104

Subject: Object Oriented Programming in

C++

Time : 3 Hours

Maximum Marks :60

Note: Attempt any five questions including Q.no.1 which is compulsory. Select one question from each unit

Q1 Attempt all the questions.

- (a) Define Abstraction and Encapsulation with suitable example. (3)
- (b) What do you mean by type conversion? (2)
- (c) Define Dynamic binding. Give example in C++ to explain. (3)
- (d) What is copy constructor? Give the syntax for using it in C++. (2)
- (e) Explain Overriding inheritance. (2)
- (f) Explain the difference between aggregation and composition with example. (2)
- (g) What is the difference between 'inline function' and 'macro'? (3)
- (h) Define 'this' pointer. Give the syntax for using it. (3)

## UNIT-I

- Q2 (a) What are abstract classes? What is their use? Give one example of abstract class. (5)  
(b) Compare and contrast cin, cout, new and delete operator with their C counterparts. (5)

- Q3 (a) What is the difference between reference variables and normal variables? Tell whether a constant value can be initialized to a variable of reference type. Why?/why not? (4)  
(b) What are the different types of parameter passing methods supported in C++? Perform a comparative analysis between "Passing by pointer" and "Passing by reference" method. (6)

## UNIT-II

- Q4(a) Create a class "string". Write a program to overload '+' operator that concatenate string s1 and s2 into string s3 using the statement s3=s1+s2, overload '<' operator to compare two strings. Also use appropriate constructor and destructor. (8)  
(b) Justify the need of scope resolution operator for accessing global variables. (2)

- Q5 (a) Overload prefix and postfix increment operator for date class consisting of day, month and year. (8)

- (b) What are namespaces? What are the advantages of using it? (2)

## UNIT-III

- Q6 (a) What is the difference between inheritance and delegation? Illustrate with example. (4)
- (b) Create a class which keeps track of the number of its instances. Use static data member , constructor and destructor to maintain updated information about active objects. (4)
- (c) What is the difference between inheriting a class with public and private visibility modes? (2)

- Q7 (a) Give one example each of compile time and runtime polymorphism. (5)
- (b) Write an interactive program to compute square root of a number. The input value must be tested for validity. If it is negative the user defined function 'neg\_sqrt' should raise an exception. (5)

#### UNIT-IV

- Q8(a) Write a program to implement generic stack using class template. (7)
- (b) Write a program to implement Binary Search using generic function. (3)
- Q9(a) What is Standard Template Library? Define three of its important entities. (5)
- (b) Which entity is often used to customize the behaviour of an algorithm? Explain with example. (5)

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