(Please write your Exam Roll No.) Exam Roll No. .....

# END TERM EXAMINATION

THIRD SEMESTER [BCA] DECEMBER 2007

**Paper Code: BCA209** **Subject: Object Oriented Programming**
**Paper Id: 20209** **Batch: (2005-2006)**
**Time : 3 Hours** **Maximum Marks :75**

**Note: Attempt all questions. Internal choice is indicated.**

Q1 (a) What is polymorphism? Give one example to explain it.
(b) Give two differences between procedural and an object oriented languages.
(c) How garbage collection does takes place in C++? Illustrate through an examples.
(d) What is the size of an empty class?
(e) Differentiate between 'public' and 'protected' using a suitable example.
(f) Give code for a template and explain its functionality.
(g) How can we access the private Data Members Through friend functions?
(h) Define a generic class. Give two examples.
(i) Differentiate between 'multiple' and 'multilevels' inheritance. Give diagrams to explain the difference.
(j) What is debugging? Why is it required? (2.5x10=25)

Q2 (a) Write short notes on:- (3x2)
(i) Abstraction (ii) Function prototype

(b) Illustrate the overloading of **NEW** and **DELETE** operator. (6.5)

OR

(a) Write C++ program to show dynamic memory allocation. Also explain the concept. (6.5)
(b) Write short notes on:- (6)
(i) Nested classes (ii) Functional and data decomposition

Q3 (a) Create a class named employee. Allow multiple constructors in the class. Create methods to generate salary and sales report of each employee using these constructors. The program should run and also display the details of atleast 25 employees. (6.5)

(b) Explain the concept of abstract classes. Give a program to explain this concept. (6)

OR

(a) Write short notes on :- (3x2)

(i) Encapsulation (ii) Default arguments and how is it used in function call.

(b) Create a class called 'student'. Include member functions like enter-stud-details ( ) and display-stud-details ( ) to input details and hence display details of atleast 100 students from console. The program should use concept of dynamic memory allocation. (6.5)

Q4 (a) Write short notes on:- (6)
(i) Classification vs. composition hierarchy (ii) Parametric polymorphism

(b) Write a C++ program to overload and operator to concatenate 2 stings. (6.5)

OR

(a) Explain aggregation and hybrid inheritance with suitable examples. (6)

(b) Give C++ program to show the usage of private, public and protected. (6.5)

Q5 (a) Write short notes on:- (3x2=6)
(i) Persistant objects (ii) Streams and its types

(b) Give a C++ program to explain the concept of exception handling. (6.5)

OR

(a) Explain 'namespaces' and 'overriding' inheritence' with examples. (6)

(b) Write a C++ program to transfer text from file1 to file2. These files have first to be created by the user only. (6.5)