Library

May, 2006

Subject Code—4212

M.C.A. (Third Year) EXAMINATION

MCA-302

OBJECT ORIENTED PROGRAMMING USING C++

Time : 3 Hours *Maximum Marks : 100*

Note : Attempt any *Five* questions. All questions carry equal marks.

1. (a) What do you mean by Object Modeling ? Explain the steps required to construct an object model. 12

   (b) Implement polymorphism to compute area of at least four different shapes. 8

2. Define the following terms related to OO paradigm : 20

   (a) Encapsulation

   (b) Inheritance

   (c) Data abstraction

P.T.O.

(d) Compile polymorphism

(e) Run time polymorphism

(f) Message passing

(g) Extensibility

(h) Persistence

(i) Delegation

(j) Containership.

3. (a) What do you mean by Operator Overloading of a function. Explain with the help of an example. 10

(b) Why a constructor function required in C++ ? Explain with the help of an example. 10

4. (a) Explain the use template class and template function with suitable example. 10

(b) What is Copy Constructor ? How is it different from operator overloading ? Give example. 10

5. (a) Explain the main features that made the object oriented better than traditional approach. 12

(b) Define a Pure Virtual function and its utility in C++. 8

6. (a) Write a program in C++ to add and subtract two complex number objects as follows :

$$Z3 = Z1 + Z2$$

where Z1, Z2, Z3 are complex number objects. 12

(b) What is Reference Variable ? What is advantage of Reference Variable ? 3

7. (a) Perform the following :

(i) One type of object into another type of object conversion

(ii) Basic type of an object type conversion

using constructor. 10

(b) What is an exception in C++ ? How is it handled ? Describe with the help of an example. 10

8. Explain the syntax and purpose of the following functions : 20

(a) fill ( )

(b) width ( )

(c) open ( )

(d) flush ( )

(e) seekp ( )

(f) read ( )

(g) write ( )

(h) eof ( )

(i) tellg ( )

(j) seekg ( )