M.Sc. 3rd Semester Examination, 2012

APPLIED MATHEMATICS WITH OCEANOLOGY AND COMPUTER PROGRAMMING

( Objected Oriented Programming with C++ )

PAPER—MTM-304

Full Marks : 25

Time : 1 hour

The figures in the right-hand margin indicate marks

Answer Q. No. 1 and any two from the rest

1. Answer any two questions : \(2 \times 2\)

(a) Explain the following functions used as file processing functions :

\[\text{good()}\] and \[\text{fail()}\].

(b) How objects can be defined in C++ ?

(c) What do you mean by data encapsulation ?
2.  (a) Explain the difference between a data member of a class and the conventional variables in C++.  
(b) Describe how the data member of a class can be initialized in C++.  
(c) Write a class for complex numbers including the operators +, −, * for addition, subtraction and multiplication of complex numbers using operator overloading. Demonstrate your class.  

3.  (a) What is a constructor? What are the uses of declaring a constructor member function in a program? What are the rules governing the declaration of a constructor?  

(b) What is meant by inheritance in the object oriented programming? What is the difference between the base class and derived classes?  

4.  (a) What is meant by operator overloading? What are the C++ operators that can be used both for binary and unary operators? Can the operator precedence and syntax be changed through overloading? Explain.
(b) Write a program for reading a file name from command line and display its contents on the monitor.

[Internal Assessment : 5 Marks]