

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 × 2

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

good() and fail().

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

(c) What do you mean by data encapsulation ?

(Turn Over)

2. (a) Explain the difference between a data member of a class and the conventional variables in C++. 2
- (b) Describe how the data member of a class can be initialized in C++. 2
- (c) Write a class for complex numbers including the operators +, -, * for addition, subtraction and multiplication of complex numbers using operator overloading. Demonstrate your class. 4
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 ? $1 + 2 + 2$
- (b) What is meant by inheritance in the object oriented programming ? What is the difference between the base class and derived classes ? $1\frac{1}{2} + 1\frac{1}{2}$
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. $1 + 1\frac{1}{2} + 1\frac{1}{2}$

(b). Write a program for reading a file name from command line and display its contents on the monitor.

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[*Internal Assessment* : 5 Marks]

