## M.Sc. 3rd Semester Examination, 2014

### APPLIED MATHEMATICS WITH OCEANOLOGY AND COMPUTER PROGRAMMING

( *Object Oriented Programming with* C++ )

### PAPER—MTM-306

### UNIT — I

*Full Marks* : 25

*Time* : 1 hour

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

*The figures in the right-hand margin indicate marks*

1. Answer any *two* questions :                    2 × 2

    (*a*) What do you mean by data abstraction and encapsulation ?

    (*b*) Explain constructor and destructor in C++.

    (*c*) What is polymorphism in object oriented programming ?

2. What are the differences between object oriented programming and procedural oriented programming ? What are the important features of object oriented programming language ?   5 + 3

3. Explain operator overloading. What are its advantages ? State the operators in C++ which can not be overloaded. Write a program to generate Fibonacci sequence using overloading of ++ operator.                    2 + 2 + 1 + 3

4. (a) Explain the difference between a data member of a class and the conventional variable in C++.

   (b) Write a class for complex numbers including the operators +, –, * for addition, substraction and multiplication of complex numbers using operator overloading. Use this class to find the value of

   $$Z = a * b - c + d$$

   where $a, b, c, d$ and $z$ all are complex numbers.

(c) What is meant by inheritance in the object
   oriented programming ?              $2 + 4 + 2$

[ *Internal Assessment* : 05 Marks ]

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