PG/IIIS/A.MATH/MA2104/09

M.Sc. Third Semester Examination 2009

APPLIED MATHEMATICS WITH OCEANOLOGY AND COMPUTER PROGRAMMING

PAPER—MA-2104

(*Object Oriented Programming with C++*)

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* : 2×2

(*a*) What do you mean by function prototyping ? Explain with an example.

(*b*) How can we initialize an object in C++ ?

(*c*) What function is used to open a data file in C++ ? What is the neassary headder file for this purpose ?

2. (*a*) What are the differences between object oriented programming and procedure oriented programming ?

(*b*) Write a program in C++ which will read a file (ASCII) from memory and save it to another file. The file names are to be supplied through command line. 4 + 4

3. (*a*) Explain single inheritance in C++. The following two classes are defined in a program written in C++.

```
class B
    {
      int a;
      public :
          int b;
          void geta( );
          void getb( );
          void show( );
    };
class D : private B
    {
      int c;
      public :
          void add( );
          void display( );
    };
```

Write the private and public sections of the class D explicity.

(*b*) Write a class for complex numbers which will include the operators, (to be overloaded) + , - , << and >>. Also, write the main function to demonstrate the class. 4 + 4

4. (*a*) What do you mean by operator overloading ? What are the major restrictions to overload an operator ? Name two operators which cannot be overloaded.

(*b*) Is it possible to grant certain public member of the base class public status in the derived class even though the base class is inherited as private ? Explain. 3 + 5

[*Internal Assessment* : 5 Marks]