MCA/M-17
OBJECT ORIENTED PROGRAMMING USING C++
Paper: MCA-14-22

Time: Three Hours   Maximum Marks: 80

Note: Attempt five questions including No. 1 which is compulsory. All questions carry equal marks.

Compulsory Question

1. Answer the following questions in brief :
    (a) What are reference variables in C++ ? Explain with an example.
    (b) Explain two different ways to make a function inline.
    (c) What is 'this' pointer? Give two usages of 'this' pointer.
    (d) How does the compiler resolve a call to a virtual function?
    (e) How can a user define its own manipulator? Give an example.
    (f) Differentiate between fail() and bad() functions.
    (g) Explain, how the stack is unwound when an exception is thrown in C++
    (h) Distinguish between containership and inheritance.

Unit-I

2. (a) What are header files in C++? How can you create own header file? Give an example.

    (b) What is dynamic memory allocation? Explain the use of 'new', 'delete []' Operator used for dynamic memory allocation and deallocation by giving suitable examples.

3. (a) What is constructor ? Explain parameterized constructor with an example.

    (b) What are preprocessor directives? Explain any four such directives.

Unit-II

4. (a) What is operator overloading? Overload operator to compare two objects of Distance class. Distance is given in feet and inches.

    (b) What is subscript '[]' operator? Give a suitable example which overload '[]' Operartor.

5. (a) What is friend class? Explain its need by giving an example

(b) How are values of fundamental data types converted to class objects? Explain with an example.

Unit-III

6. (a) What is inheritance? Give an example of multilevel inheritance and implement it in C++.

   (b) How can you pass parameters to the parameterized constructor of a base class? Explain with an example.

7. (a) What is virtual destructor? Explain its need with an example.
   (b) Why do you require virtual derivation? Explain with a suitable example.

Unit-IV

8. (a) What is template class? Write a template class for Array and demonstrate its use.
   (b) How can you rethrow an exception? Explain with an example.

9. (a) What are file pointers? Explain each with a suitable example.
   (b) What is binary file? How can you create and use it? Explain with an example.