Roll No. ..... Total No. of Pages: 2

MCA/MX 5255

Object Oriented Programming with C++

Paper: MCA-205

Time: Three Hours] [Maximum Marks: 80

Note:- Attempt FIVE questions in all, selecting ONE question from each Unit. Question No.1 is compulsory.

1. Answer the following questions in brief:

(i) What is copy constructor?

(ii) How can you create read only objects?

(iii) Explain the concepts of namespace.

(iv) Distinguish between implicit and explicit type conversions.

(v) Can you declare a member function as a friend of another class? Exp1ain with an example.

(vi) How can you pass parameters to a parameterized constructor in a base class? Explain.

(vii) Explain the difference between Binary and ASCII files.

(viii) Explain file-opening modes. 8x3=24

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2. (a) What are preprocessor directives in C++? Explain define, undef and pragma directives. 7

(b) What is the purpose of ios class of hierarchy of console stream classes? Explain the following functions of ios class with the help of examples: precision(), fill() and setf(). 7

3. (a) What are static data member and member functions? Explain their use by giving an example. 7

(b) What are manipulators in C++? Explain the following manipulators with examples: ws, flush and setbase. 7

UNIT-II

4. (a) What is operator overloading? Give an example, which overloads new and delete operators. 7

(b) Overload '+' operator to concatenate and '>' operator to compare two strings. 7

5. (a) What is friend function? Overload '*' operator to multiply two complex numbers through friend function. 7

(b) How can you convert one type of object into another type of object? Write a program to convert object of Degree class to object of Radian class. (angle in radian = angle in radian * PI/180). 7

UNIT-III

6. What are the rules of derivation? Explain the roles of constructors and destructors in inheritance by giving suitable example. 14

7. (a) Explain the need of virtual function by giving a suitable example. 7

(b) What is virtual derivation? Give example. 7

UNIT-IV

8. (a) How can you open and close files? Also discuss file pointers and functions to manipulate these pointers. 7

(b) How can you read and write objects in a file? Explain by giving an example. 7

9. (a) Explain 'catch all' and 'rethrowing' of example. Also explain how can restrict a function to throw exceptions. 7

(b) Design a template class to sort N numbers. Also demonstrate the use of this class. 7