Roll No. .....

Subject Code—6770

M.C.A. EXAMINATION

(Fourth Semester)

(MCA 3 Years)

(Main/Re-appear Batch 2009)

MS-17

OBJECT ORIENTED PROGRAMMING USING C++

Time : 3 *Hours* *Maximum Marks* : 70

Note : Attempt any *Five* questions. All questions carry equal marks.

1. (a) What is Object Oriented Programming ? How is it different from procedure oriented programming ?

   (b) How does object oriented approach differ from object based approach ?

   (c) How does a main ( ) function in C++ differ from main ( ) in C ?

2. (a) What is a Reference Variable ? What is the major use of this variable ?

(b) Explain how new and delete operators manage memory allocations dynamically.

(c) How do the following statements differ :

(i) char * const p;

(ii) char const * p.

3. (a) What do you mean by overloading of a function ? When do we use this concept ?

(b) How does an inline function differ from a preprocessor macro ?

(c) Write a function to read a matrix of size m * n from the keyboard.

4. (a) What is friend function ? Illustrate the use of friend function. What are the merits and demerits of using friend functions ?

(b) Define Constructor and Destructors. Is it mandatory to use constructors in a class ? How do we invoke a constructor function ?

5. (a) What is a Conversion Function ? How is it created ? Explain its syntax.

(b) What is Operator Overloading ? Why is it necessary to overload an operator ?

(c) Define a class string. Use overloaded = = operator to compare two strings.

6. (a) What does inheritance mean in C++ ? Write a C++ program to create a class Student with data members USN, name and age. Using inheritance, create the class UGSTUDENT and PGSTUDENT having field as semester, fees and stipend. Enter the data for at least five students. Find the semester wise average for all UG and PG students separately.

(b) Define abstract class and virtual base class. When do we make a class virtual ?

7. (a) What is a File Mode ? Describe the various file mode options available.

(b) Describe the various approaches by which we can detect the end-of-file condition successfully.

(c) Explain the C++ Streams.

8. (a) What are the steps involved for the analysis of object oriented systems.

(b) Illustrate the concept of union in object-oriented programming using program segments.