

USN

--	--	--	--	--	--	--	--	--	--

10MCA22

Second Semester MCA Degree Examination, June 2012
Object Oriented Programming with C++

Time: 3 hrs.

Max. Marks:100

Note: Answer any FIVE full questions.

- 1
 - a. What is object oriented programming? Explain the main features of object oriented programming. (10 Marks)
 - b. What do you mean by default argument function? Write a class called A – clock, that simulates the keeping of time. Use three private data members hours, minutes and seconds your class should be able to set () the starting time. To do this, use three formal arguments representing the hours, minutes and seconds. Increment () the time by one second. Display () the time. The function should take an argument with a default value of zero to imply military time. If this value is something other than zero, display the time in std AM and PM notation. Declare all three functions within the class definition and then define them as in line function. Write an appropriate main function. (10 Marks)

- 2
 - a. What are constructors and destructors? How the constructor and destructor functions are executed for global and local objects? Illustrate with an example. (10 Marks)
 - b. What are in line functions? How are they different from normal functions? Write the merits and demerits of inline functions. (10 Marks)

- 3
 - a. What are the friend functions and friend classes? Write a C++ program to add two private data members of two different classes, using non –member function. (06 Marks)
 - b. How do the new and delete operators manage dynamic memory allocation. (04 Marks)
 - c. What are static data members and static member functions? Write a program to declare a class ACCESS with static data member “count” of integer type. Initialise it to zero. Write a member function MAINTATION () – to maintain the “count” by incrementing it every time it is accessed by an object. Create three objects in main. Display the value of count every time it is accessed. (10 Marks)

- 4
 - a. How do you explicitly overload a template function. (04 Marks)
 - b. What are class templates? How are they created? Create a template for bubble sort function. (08 Marks)
 - c. Write a C++ program to overload the subscript operator. (08 Marks)

- 5
 - a. What are the different modes of inheritance supported by C++? Explain them with an example. (10 Marks)
 - b. How do you pass arguments to a constructor of a base class? Give a supportive illustration. (10 Marks)

- 6
 - a. Distinguish between the virtual function sand pure virtual functions, with suitable examples. (06 Marks)
 - b. What is an abstract class? Explain with an example. (04 Marks)
 - c. What are iostreams? Explain the stream class hierarchy, with a neat diagram. (10 Marks)

Important Note : 1. On completing your answers, compulsorily draw diagonal cross lines on the remaining blank pages.
 2. Any revealing of identification, appeal to evaluator and /or equations written eg. 42+8 = 50, will be treated as malpractice.

- 7** a. How are opening and closing of files handled in C++? Distinguish between text and binary files. **(10 Marks)**
- b. What do you mean by exception handling? List the different exception handling options. Explain how do you rethrow an exception, with a suitable example. **(10 Marks)**
- 8** Write short notes on :
- a. This pointer
 - b. Scope resolution operator
 - c. Random access of data in files
 - d. An over view of STL. **(20 Marks)**

* * * * *