Register Number: ……..

MCA DEGREE EXAMINATIONS: JUNE/JULY 2013

Second Semester

MASTER OF COMPUTER APPLICATIONS

MCA506**:** Object Oriented Programming

Time: Three Hours **Maximum Marks: 100**

Answer all the Questions:-

PART A (10 x 2 = 20 Marks)

1. Mention the advantages of object oriented programming approach.
2. What is the purpose of using a virtual function?
3. Define encapsulation.
4. List out the access specifiers used in C++.
5. What is default constructor? Give example.
6. Write the syntax to overload new and delete operators.
7. What is the difference between static and dynamic binding?
8. Write the advantages of using templates.
9. Write the C++ built-in streams with their meaning.
10. How can we detect the end of the file?

PART B (5 x 16 = 80 Marks)

11. a) (i) Compare procedural and object oriented programming. (8)

    (ii) Write short notes on user defined data types. (8)

(OR)

    b) Discuss in detail the object oriented programming concepts with suitable examples.

12. a) (i) What is a friend function? Write the need of having a friend function. (6)

    (ii) Create a class 'COMPLEX' to hold a complex number. Write a friend function to add two complex numbers. Write a main function to add two COMPLEX objects. (10)

(OR)

    b) (i) Explain the static data member and static member functions with example (8)

    (ii) In which situations ‘this’ pointer can be used? Write a C++ program to illustrate (8)

'this' pointer.

13. a) Explain how function overloading can be achieved in C++. Write a program to implement function overloading in order to compute power(m,n) where i) m is double and n is int ii) m and n are int.

(OR)

b) (i) Explain how copy constructor can be used in C++. (6)

(ii) Create a 'MATRIX' class of size m X n. Overload the '*' operator to multiply two MATRIX objects. Write a main function to implement it. (10)

14. a) (i) Write short notes on inheritance (8)

(ii) Create a base class called 'SHAPE' having (8)

- two data members of type double
- member function *get-data*( ) to initialize base class data members
- pure virtual member function *display-area*( ) to compute and display the area of the geometrical object.

Derive two specific classes 'TRIANGLE' and 'RECTANGLE' from the base class. Using these three classes design a program that will accept the dimension of a triangle / rectangle interactively and display the area.

(OR)

b) (i) Explain how exceptions can be handled in C++ with an example. (8)

(ii) Write a program to swap two variables using template (8)

15. a) (i) A file contains a list of names and telephone numbers in the following form: (8)

Name Tel. No.

Write a C++ program to read the file and output the list in the tabular format. The name should be left-justified and numbers right-justified. Use a class object to store each set of data.

(ii) What is STL? Explain the foundational items of STL. (8)

(OR)

b) (i) Explain the list class with an example (8)

(ii) Write a program to demonstrate the insert( ), erase( ) and replace( ) string manipulation functions. (8)

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