B.E /B.TECH (FULL TIME) DEGREE END SEMESTER EXAMINATIONS, MAY 2013

COMPUTER SCIENCE AND ENGINEERING

SECOND SEMESTER (REGULATION 2012)

CS8203 PROGRAMMING USING C++

Max Time: 3 Hrs   Max Marks: 100

Part-A (10 * 2 = 20 Marks)

ANSWER ALL QUESTIONS

1.Write 4 statements to access the value of variable i given the following statements.

   Int i=3;   Int *j;   Int **k;   J=&I;   K=&j;

2. Write the output.

   Printf("%d %d",sizeof(NULL),sizeof(" "));.

3. What is encapsulation?

4. Differentiate procedural and object oriented programming.

5. How does a static member differ from a non static member?

6.What is the use of unary scope resolution operator? Give an example.

7.Write the statement to prevent a function from throwing any exceptions.

8.Differentiate ios::noreplace and ios::nocreate.

9.What is a pure virtual function?

10.What are the various forms of objects based on scope?

Part-B (5 * 16 = 80 Marks)

11.a. Write a C program to return a 2d array of integers from a function by returning a pointer to the 2d array. Display the 2d array in main using the pointer.   (5)

b.Write a C program to print the structure members by passing the address of book to function display.

struct book { char name[25]; char author[25]; int callno; }   (5)

c. Write a C program to create a file and then display the file. The file contains characters terminated by new line. (6)

12.a. 1. Write a function sum to add 2 integers and print the result in the function. A function diff subtracts 2 integers and prints the result. Use a pointer to function to invoke sum and diff.

12.a.2. Write a program using class. The class stack has method insert to store an integer into an array st using subscript tos. Retrieve from the array st using tos as subscript. Print the retrieved element.

(OR)

12.b.1.A class X has an integer member a; A class Y has an integer member b; Initialise and display the data members. A function sum finds the sum of a and b and prints the result. Write the complete program.

12.b.2. Write a program using class. The class is queue. Method insert stores an integer into an array, q1, using subscript front. Method retrieve extracts from the array, q1, using rear as subscript. Retrieve the elements in the order of insertion. Print the retrieved element.

13.a.1.Write a complete program to overload [] operator to validate array subscript.

13.a.2. Explain the various forms of inheritance.

(OR)

13.b.1.Class media has title and price has data members. Provide constructor and method display to print the data members. Class book and tape are inherited from media; book has an integer member pages; tape has a float member time. Provide constructor to initialize the respective data members. Provide display to print the respective data members. From main() display the data members of book and tape using pointer to media class.

13.b.2. Write a complete program to add 2 complex numbers using operator overloading. Provide constructor and display to print the data members.

14.a.1.Explain the following giving an example for each :

(i) catching all exceptions (ii)restricting exceptions (iii) rethrowing an exception

14.a.2. Use function template and also overload function disp to print the value of single generic parameter, disp prints the value of two generic parameters and disp prints an integer parameter. Write the main program to achieve the following disp('a'), disp(1), disp(1,'e').

(OR)

14.b.1.Write a program to create a namespace test consisting of   int n   and   show(int k);   show prints k.   Assign value to n and print n by calling show using test namespace.   (4)

14.b.2.Explain nesting of namespaces with an example. (4)

14.b.3.Write a complete program to print 2 generic variables. Provide constructor to initalise the generic data members. Provide default values for the generic data type. Use class template. (8)

15.a.1. Write a program to access a vector through iterator. Assign elements to the vector , display the vector and modify the contents of vector.

15.a.2.Write a C++ program to read from a memory buffer and display the read values. Once again read from the start of the buffer and display the contents.

<div align="center">(OR)</div>

15.b.1.Write a C++ program to create a file of characters terminated by a newline.

15.b.2. Explain with an example how memory can be dynamically allocated and recoverd in C++ .