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10CS36

Third Semester B.E. Degree Examination, Dec.2015/Jan.2016
Object Oriented Programming with C++

Time: 3 hrs. Max. Marks:100

Note: ***Answer any FIVE full questions, selecting atleast TWO questions from each part.***

PART – A

1 a. State the important features of object oriented programming. Compare object oriented system with procedure oriented system. **(08 Marks)**

b. What is function overloading? Illustrate function overloading through swap function which swaps two integer, two double and two character data. **(08 Marks)**

c. Explain the working of an inline function with example **(04 Marks)**

2 a. Define the term class and objects. Write a C++ program to define a class complex with real and imaginary as data members and get_data( ), add( ) and display_Data( ) as member function to read, add and display complex object. **(08 Marks)**

b. Explain with example different types of constructors. **(08 Marks)**

c. Explain with an example the role of static data member in a class to count the number of object created in a program. **(04 Marks)**

3 a. Explain how "new" and "delete" operator manages memory allocation/de-allocation dynamically. **(08 Marks)**

b. What are friend functions? Why is it required? Explain with the help of a suitable example. **(06 Marks)**

c. Write a C++ program to arrange a set of integers and floating point values in ascending order by using template functions. **(06 Marks)**

4 a. What is inheritance? Explain with example different types of inheritance in C++. **(10 Marks)**

b. With an example, explain the effect of private, protected and public access specifier. When a base class is inherited by a derived class? **(10 Marks)**

PART – B

5 a. With the illustration code, explain how the constructors and destructors are involved when a derived class object is created. **(10 Marks)**

b. What is the ambiguity that might arise in multiple inheritances? How to overcome this? Explain with an example. **(06 Marks)**

c. Explain methods of restoring the original access specification of a base class members when it is inherited as private. **(04 Marks)**

6 a. What is virtual function? Explain with an example. How virtual function can be used to implement the runtime polymorphism? **(08 Marks)**

b. Explain with an example pure virtual function. **(06 Marks)**

c. Explain how virtual functions are hierarchical with an example. **(06 Marks)**

7 a. What are various IOStreams in C++? Give the stream class hierarchy. **(10 Marks)**

b. Describe the use of following manipulators :
i) setw( ) ii) setfill( ) iii) setprecision( ) iv) setioflags( ) v) resetioflags( ). **(10 Marks)**

8 a. What is exception handling? Explain with an example how exception is handled in C++. **(10 Marks)**

b. What are standard template library? List and explain any five member function from vectors and lists class in STL. **(10 Marks)**

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