10CS36

Third Semester B.E. Degree Examination, June/July 2019
Object Oriented Programming with C++

Time: 3 hrs.   Max. Marks:100

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

PART – A

1 a. Define the terms encapsulation, polymorphism and inheritance.   **(06 Marks)**
   b. What is function overloading? Write a C++ program to overload the function abs(p) to return the absolute value of integer, long and double.   **(10 Marks)**
   c. What is inline function? Give the disadvantages of inline functions.   **(04 Marks)**

2 a. What is class? Explain its general syntax.   **(08 Marks)**
   b. Explain the parameterized constructor in C++ with an example.   **(06 Marks)**
   c. Write a C++ program that makes use of static member variable to keep track of the number of objects of a particular class type that are in existence.   **(06 Marks)**

3 a. What is friend function? Explain when friend functions are useful.   **(05 Marks)**
   b. Explain how to create generic function.   **(05 Marks)**
   c. What is operator overloading? Write a C++ program that users friend functions to overload the prefix versions of ++ and – – operators relative to the loc class.   **(10 Marks)**

4 a. What do you mean by inheritance in C++? Explain the general form of defining the derived class.   **(06 Marks)**
   b. Explain how to access base class protected members by derived class with an example.   **(06 Marks)**
   c. What is multiple inheritance? Write a C++ program to achieve multiple inheritance.   **(08 Marks)**

PART – B

5 a. Explain when base class and derived class constructors and destructors called with example.   **(06 Marks)**
   b. Explain the mechanism of passing parameters to base class constructors.   **(04 Marks)**
   c. What is virtual base class? Why virtual base classes are needed? Explain with an example.   **(10 Marks)**

6 a. Define the following :
      i) Virtual functions   ii) Pure virtual functions   iii) Abstract classes.   **(06 Marks)**
   b. Explain how the virtual attribute is inherited with an example.   **(08 Marks)**
   c. Differentiate between early binding and late binding.   **(06 Marks)**

7 a. What are steam classes? Explain C++'s predefined streams.   **(06 Marks)**
   b. Explain the following functions :
      i) width( )   ii) precision( )   iii) fill( )   iv) unsetf( ).   **(08 Marks)**
   c. What are manipulators? Explain any 5 manipulators.   **(06 Marks)**

8 a. What is exception handling? Explain try, throw and catch constructs in C++.   **(08 Marks)**
   b. Explain three types of STL containers.   **(06 Marks)**
   c. What is map? Explain any 5 map member functions.   **(06 Marks)**

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