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10CS36

Third Semester B.E. Degree Examination, June/July 2016
Object Oriented Programming With C++

Time: 3 hrs. Max. Marks:100

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

PART – A

1 a. Explain any three features of object oriented programming. **(06 Marks)**

b. What is function overloading? Write a C++ program to define three overloaded functions to find the sum of two integers, sum of two floating point numbers and sum of three integers. **(08 Marks)**

c. What are inline functions? Illustrate inline functions with an example. **(06 Marks)**

2 a. Define class and objects. Write a C++ program to create a class STUDENT with the following specifications.
Data members: Name, Roll No. and Average Marks
Member functions: Read & Write
Use the above specification to read and print the information of 5 students. **(10 Marks)**

b. What are constructors? Explain the different types of constructors. Write a C++ program to illustrate the different types of constructors. **(10 Marks)**

3 a. What are friend functions? Write a C++ program to find the sum of two complex numbers using friend functions. **(10 Marks)**

b. Write a C++ program to perform the addition of two location objects by overloading '+' operator, using a class "LOCATION" with the data members longitude and latitude. Read and display the location objects by overloading the operators << & >>. **(10 Marks)**

4 a. Explain the visibility of the base class members for the access specifiers:
i) Public ii) Private iii) Protected.
Illustrate the same with a program. **(10 Marks)**

b. Write a C++ program to illustrate multiple inheritance and multilevel inheritance. **(10 Marks)**

PART – B

5 a. Illustrate with a C++ program the execution of constructors and destructors when single inheritance is involved. **(06 Marks)**

b. Explain passing of parameters to base class constructors in multiple inheritance. **(08 Marks)**

c. Explain the need for virtual base classes. **(06 Marks)**

6 a. What is a virtual function? Write a C++ program to demonstrate calling of virtual function through a base class reference. **(10 Marks)**

b. With examples explain pure virtual function and abstract classes. **(10 Marks)**

7 a. What are streams in C++? Explain C++'s predefined streams? **(08 Marks)**

b. Explain width ( ), precision ( ) and fill ( ) functions. **(06 Marks)**

c. What are I/O manipulators? Explain any five C++ manipulators used for output. **(06 Marks)**

8 a. What is exception handling? Write a C++ program that illustrates exception handling with the help of keywords: try, throw and catch. **(10 Marks)**

b. What is STL? Briefly explain the use of containers, vectors, lists and Maps. **(10 Marks)**

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