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10CS36

Third Semester B.E. Degree Examination, June/July 2015
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 programming with procedure oriented programming. (10 Marks)
- b. Define function overloading. Write a C++ program to define three overloaded functions to swap two integers, swap two floats and swap two doubles. (10 Marks)
- 2 a. Differentiate between class and structure. With an example explain the syntax for defining a class. (10 Marks)
- b. List the characteristics of a constructor. Write a C++ program to define a suitable parameterized constructor with default values for the class distance with data members feet and inches. (10 Marks)
- 3 a. Differentiate between function overloading and function templates. Can we overload a function template? Illustrate with an example. (08 Marks)
- b. Write a C++ program to create a class called STRING and implement the following operations. Display the results after every operation by overloading the operator <<.
 - i) STRING S1 = "VTU"
 - ii) STRING S2 = "BELGAUM"
 - iii) STRING S3 = S1 + S2 (Use copy constructor). (08 Marks)
- c. List the characteristics of a friend function. (04 Marks)
- 4 a. Explain the visibility of base class members for the access specifiers : private, protected and public while creating the derived class and also explain the syntax for creating derived class. (08 Marks)
- b. Write a C++ program to illustrate multiple inheritance. (06 Marks)
- c. List the types of inheritances. Write a C++ program to implement single inheritance with public access specifier. (06 Marks)

PART – B

- 5 a. With an example, explain the syntax for passing arguments to base class constructors in multiple inheritance. (10 Marks)
- b. With an example, explain the order of invocation of constructors and destructors in multiple inheritance. (10 Marks)
- 6 a. Differentiate between early binding and late binding. With an example explain how late binding can be achieved in C++. (08 Marks)
- b. With an example, explain how virtual functions are hierarchical. (06 Marks)
- c. Define pure virtual functions. Write a C++ program to illustrate pure virtual function. (06 Marks)

Important Note : 1. On completing your answers, carefully draw diagonal cross lines on the remaining blank page.
2. Any revealing of identification, appear to evaluator and /or equations written eg, 42+8 = 50, will be treated as malpractice.



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- 7 a. Explain the output manipulators : `setw()`, `setprecision()` and `setfill()`. (06 Marks)
b. Explain the use of `ifstream` and `ofstream` classes for file input and output. (08 Marks)
c. Explain the file operation functions in C++ to manipulate the position of file pointers in a random access file. (06 Marks)
- 8 a. Define exception handling. Explain the use of `try`, `catch` and `throw` for exception handling in C++. (08 Marks)
b. Write a C++ program to illustrate catching all exceptions. (06 Marks)
c. Explain briefly the three foundational items of standard template library. (06 Marks)

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