USN | | | | | | | | | | |

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)**

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)**

* * * * *