GUJARAT TECHNOLOGICAL UNIVERSITY
BE - SEMESTER– V • EXAMINATION – WINTER 2016

Subject Code: 152004   **Date: 17/11/2016**
Subject Name: Object Oriented Programming in C++
Time: 10:30AM – 01:00PM   **Total Marks: 70**
Instructions:
  1. **Attempt all questions.**
  2. **Make suitable assumptions wherever necessary.**
  3. **Figures to the right indicate full marks.**

Q.1	**(a)**	What is Polymorphism? Explain with example.	**07**
	(b)	What is the use of copy constructor? Explain with example.	**07**
Q.2	**(a)**	Explain types of inheritance with example.	**07**
	(b)	Create a String class that includes following string-related functions, String length, String copy, String compare, String concatenation (Without using inbuilt string functions).	**07**

<div align="center">OR</div>

	(b)	Define a class to represent a bank account. Include members like name of the depositor, account number, type of account, and balance amount in the account. Make functions (1) To assign initial values, (2) To deposit an amount, (3) To withdraw an amount after checking the balance, (4) To display name and balance. Write a main program to test the program.	**07**
Q.3	**(a)**	Why we use virtual base class? Explain with example.	**07**
	(b)	Explain use of "iostream.h" header file.	**07**

<div align="center">OR</div>

Q.3	**(a)**	What is STL? Explain various components of STL.	**07**
	(b)	Explain exception handling in details.	**07**
Q.4	**(a)**	What is Generic class? Explain advantages of generic class with example?	**07**
	(b)	Explain Operator overloading with example.	**07**

<div align="center">OR</div>

Q.4	**(a)**	Explain abstract class and pure virtual function with example.	**07**
	(b)	Write a C++ program to merge two existing text files.	**07**
Q.5	**(a)**	Write a program to overload squareroot() function which finds square root of integer, long and double numbers.	**07**
	(b)	Write a program to add two complex numbers using friend function	**07**

<div align="center">OR</div>

Q.5	**(a)**	Create two classes DM and DB which store the value of distances. DM stores distances in meter and centimeters and DB in feet and inches. Write a program that read values of the class objects and add one object of DM with another object of DB.	**07**
	(b)	Declare a class called bird having data members as name and color. Derive two classes called flying and non-flying has data member speed_to_walk. Declare a pure virtual function get_speed and display in base class bird. Override these two in the derived classes for getting speed and displaying all data members of the class.	**07**

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