GUJARAT TECHNOLOGICAL UNIVERSITY

B.E. SEM-I Examination January 2010

Subject code: 110003   **Subject Name: Comp. Prog. & Utilization**
Date: 04 / 01 / 2010   **Time: 11.00 am – 1.30 pm**
                                  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)** Draw the Block Diagram of Computer Architecture and explain each block with its functions. **07**
      (b) Give comparison of **07**
         1. C and C++ Programming language.
         2. Flow charts and Algorithms

Q.2 **(a)** Write a C++ Program to demonstrate the operators' hierarchy **07**
      (b) Define Function with different parameters: Write a Program to demonstrate the Recursive Function. **07**
                                    OR
      (b) Write a Program to demonstrate the "call by value" and "call by reference" concept in C **07**

Q.3 **(a)** Define Object and Class and Give comparison of Object Oriented Language and Procedural Language. **07**
      (b) What is the use of Constructor and Destructor in C++? Write a C++ program to demonstrate the use of Constructor and Destructor. **07**
                                    OR
Q.3 **(a)** What is a User Defined Data type? What is the scope and life time of variable? Explain using C++ program **07**
      (b) Describe the features of OOP Language **07**

Q.4 **(a)** Write a C program to find out Armstrong Numbers between 0 and 999. Example : 153 is an Armstrong number because $1^3+5^3+3^3=153$ **07**
      (b) Give examples of various string operation functions demonstrate them using an example program. **07**
                                    OR
Q.4 **(a)** What is Friend function? Write a C++ Program to show usage of Friend Function. **07**
      (b) What is Pointer? How to initialize the pointer and how it is different from Array? **07**

Q.5 **(a)** Give comparison of Static Memory Allocation and Dynamic Memory Allocation with a code snippet. **07**
      (b) Write C++ program to explain the concept of **07**
         1. Polymorphism
         2. Inheritance
                                    OR
Q.5 **(a)** Describe various types of Inheritance **07**
      (b) Explain branching and looping in with example code **07**
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