EASTERN UNIVERSITY, SRILANKA

EXTERNAL DEGREE EXAMINATION IN SCIENCE

SECOND YEAR FIRST SEMESTER-2002/2003 (Oct./Dec.,2006)

EXTCS251 – Data Structures & Design of Algorithms
[Proper & Repeat]

Answer all questions   **Time: 2Hour**

Q1)

1. Implement a stack ADT class called **CStack** to store characters.

2. Implement the following primitive operations of stack:
   ```
   Push(char c),
   Pop(),
   isEmpty(),
   isFull(),
   Top().
   ```

3. Write a program to read a word / string from the user and use your above class **CStack** to reverse the word.
   (For Example: **Algorithms** ⟹ **smhtiroglA**)

   Note:
   i. Write comments in necessary places and use meaning full identifiers in your program.
   ii. Save your program as **A:\Q1\EXTCS251_Q1.CPP**.

Q2)

a) Write a C++ function called **Quick** to implement the **Quick Sort** Algorithm.

b) Write a main program to check the above function. Use 100 random numbers to test your function.

c) Count and display the number of exchanges made in your function **Quick**.

   Note:
   iii. Write comments in necessary places and use meaning full identifiers in your program.
   iv. Save your program as **A:\Q2\EXTCS251_Q2.CPP**.