



EASTERN UNIVERSITY, SRI LANKA
DEPARTMENT OF MATHEMATICS
SECOND EXAMINATION IN SCIENCE -2009/2010 (2011)
FIRST SEMESTER (June /July, 2011)
CS 251 – PRACTICAL WORK ON CS 201

Answer all questions

Time: 2 hours

- A) Implement the following **stack** operations in C++ Programming Language
- Create a Stack.
 - Check empty Stack.
 - Return top element of the stack.
 - Insert an element in to a stack.
 - Remove an element from a stack.

The three digits numbers P and Q are given below, write a program to find out the sum of these two numbers using **stack** data structure.

Also find the result of the addition that represents an array R like the following:

$$P = 143$$

$$Q = 787$$

$$930$$

$$R = [9, 3, 0]$$

- B) Given are two one-dimensional arrays A and B of numbers which are stored in **descending** order. Write a program to merge them in to a single sorted array C that contains every item from arrays A and B in **ascending** order.

For example:

$$\text{Array A} = \{82, 26, 18, 7, 1\}$$

$$\text{Array B} = \{54, 32, 20, 12, 5\}$$

Output:

$$\text{Array C} = \{1, 5, 7, 12, 18, 20, 26, 32, 54, 82\}$$

Write a program to find the index of the number **26** in the array C using **binary Search** method.