EASTERN UNIVERSITY, SRI LANKA
DEPARTMENT OF MATHEMATICS
SECOND YEAR EXAMINATION IN SCIENCE (2012/2013)
FIRST SEMESTER (Mar/Apr, 2016)
CS 251 – Practical works on CS 201

Answer **all questions**   Time: Two hours

(01)

Implement a *queue* data structure in a high-level language (C++).

Let us simulate a queue in the following way: Choose an integer between 1 and 6 at random. If the number is either 1, 2, 4 or 5 add the number to the queue. If the number is either 3 or 6, remove the front element from the queue. If the queue is empty, print the message "Nothing to remove". Suppose the maximum allowed queue-length is 10. When the tenth element is added, the queue becomes full. If the queue is full, you cannot add an element to the queue, just ignore the chosen number and print the message "Cannot add to Queue".

Implement a C++ program to simulate a *queue* in the above manner.

(50 Marks)

(02)

Implement a C++ program to sort the following numbers in a *descending order* using Bubble sort.

82, 26, 12, 33, 1, 83, 4, 10, 29, 14, 6, 82.   (25 Marks)

(03)

Implement a C++ program to print the following series using *recursion* technique.

1   2   2   4   8   32   256 ....   (25 Marks)