



UNIVERSITY OF COLOMBO, SRI LANKA

UNIVERSITY OF COLOMBO SCHOOL OF COMPUTING

DEGREE OF BACHELOR OF INFORMATION TECHNOLOGY

Academic Year 2012/2013 – 2nd Year Examination – Semester 4

IT4104: Programming II
PART 2 - Structured Question Paper

20st July, 2013
(ONE HOUR)

To be completed by the candidate

BIT Examination Index No:

Important Instructions:

- The duration of the paper is **1 (one) hour**.
- The medium of instruction and questions is English.
- This paper has **2 questions** and **6 pages**.
- **Answer both questions. Questions do not carry equal marks. (45% and 55%)**
- **Write your answers** in English using the space provided **in this question paper**.
- Do not tear off any part of this answer book.
- Under no circumstances may this book, used or unused, be removed from the Examination Hall by a candidate.
- Note that questions appear on both sides of the paper.
If a page is not printed, please inform the supervisor immediately.

Questions Answered

Indicate by a cross (×), (e.g. ×) the numbers of the questions answered.

To be completed by the candidate by marking a cross (×).	Question Numbers		
	1	2	
To be completed by the examiners:			

1)

a) Write the postfix expressions of the following infix expressions

(10 Marks)

1. $A*B+C$

2. $A*(B+C)$

3. $A*B+C*D$

4. $(A+B)*(C-D)$

5. $((A+B)*C)-D$

ANSWER IN THIS BOX

1.

2.

3.

4.

5.

b) Consider the following Java program illustrating a link of a singly linked list.

```
class Link
{
public long dData;
public Link next;

public Link(long dd) { dData = dd; }

public void displayLink()
{ System.out.print(dData + " "); }
}
```

Write a Java program to implement a stack using a singly linked list considering the link class shown above. When writing the linked list write only the statement/methods noted in the answer box and writing other statement/methods have no effect to the marking process. (35 Marks)

<p>a) Write a statement to refer to the first item on the list.</p> <hr style="border-top: 1px dashed #ccc;"/> <hr style="border-top: 1px dashed #ccc;"/>
<p>b) Write the required method to check whether the linked list is empty.</p> <hr style="border-top: 1px dashed #ccc;"/>
<p>c) Write a method to push an element into the stack.</p> <hr style="border-top: 1px dashed #ccc;"/>

d) Write a method to pop an element from the stack.

A large rectangular area with a solid border on the left and bottom, and a dashed border on the top and right. This area is intended for writing the code to pop an element from a stack.

c) Write a segment of Java code to implement bubble sort algorithm.

(20 Marks)

ANSWER IN THIS BOX

A large rectangular box with a solid border, containing 20 horizontal dashed lines for writing the answer.
