Uva Wellassa University of Sri Lanka
Faculty of Science and Technology
Department of Computer Science and Technology
100 level 1st Semester Examination – Sept./Oct. 2015
CST 121-2 Structured Programming Fundamentals

Uva Wellassa University

Part B

Instructions to candidates
Duration: One (01) hour
Number of questions: Two (02)
Answer all questions
Mark allocation: 60

01.

a. Write an algorithm to calculate the average mark of three subjects for fifty (50) students.
(5 mark)

b. Draw a flowchart for the algorithm you wrote in part (a).
(5 mark)

c. Tabulate the characteristics of the **Interpreter** and the **Compiler**.
(5 mark)

d. Briefly explain the difference between **Variables** and **Constants** in C language.
(5 mark)

e. List the characteristics of **while** and **do while**.
(5 mark)

f. Explain the following methods of passing parameters into functions by highlighting their characteristics and advantages.
   i. Call by value
   ii. Call by reference
(5 mark)

02.

a. List the characteristics of the **Array** data structure.
(5 mark)

b. Write a code snippet to insert an integral element into one-dimensional (1D) array.
(5 mark)

c. Explain the logic behind the pointers in terms of how it works in C language.
(5 mark)

d. Modify the code snippet you wrote in (b) to accept five (5) integer values and insert them into a **pointer array**.
(5 mark)

e. Briefly describe the following terms.
   i. Buffer
   ii. Binary files
(5 mark)

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f. Rewrite the following program using pointers.

```
#include<stdio.h>
void main()
{
   int num1, num2, total;
   printf("\n Enter two numbers : ");
   scanf("%d %d", &num1, &num2);
   total = sum(num1, num2);
   printf("\n Total = %d", total);
   getch();
}
int sum(int a, int b)
{
   int t = a + b;
   return t;
}
```

(5 mark)