



Sri Lanka Institute of Information Technology

B.Sc. Degree  
in  
Information Technology

Mid Examination  
Year 1, Semester 1 (2015)  
June Intake

Introduction to Programming (C / C++) (N102)

Duration: 1 Hour

Instructions to Candidates:

- ◆ This is a closed book examination.
- ◆ This paper contains 2 questions on 3 pages without the cover page.
- ◆ Answer all questions on the WORKBOOK provided.
- ◆ Read all questions before answering.
- ◆ The total marks obtainable for this examination is 30.

## QUESTION ONE (Total: 18 marks)

(a) What is the difference between Source code (ex1.c) and Object code (a.out) in a C programme? (2 marks)

(b) The loop shown below has been written by an inexperienced C programmer. The behavior of the loop is not correctly represented by the formatting

```
int n = 20;
while (n > 0)
    n /= 2;
printf("%d \n", (n * n));
```

i. Desk check the above code till the loop ends using the following table

n	n>0	Output

(2 marks)

ii. Correct the syntax of the loop so that it prints square value of **n** after each division.

(2 marks)

(c) Evaluate each of the following expressions and list the final value of variable **x**. (4 marks)

1.  $x = 9 - (3 - 4) * 3 / (10 - 6) \% 3 ;$

2.  $x = 9 \% (8 + 2) * 8 / 5 \% (2 + 2) ;$

3.  $x = (5 - 2 * 9 + (3 + ((9 / 4) \% 2 * 3 + 6 / (8 \% 3) ) ) ) ;$

4.  $x = 3 / 5 + 13 \% 3 + 2 ;$

- (c) Write the output of the following program

(4 marks)

```
int main()
{
    int n = 8, k=4;

    printf("%d \n", ++n );
    printf("%d \n", n );
    printf("%d \n", (n++ % 2) );
    printf("%d \n", n );
    printf("%d \n", --k );
    printf("%d \n", n + k);
    printf("%d \n", n % k);
    printf("%d \n", n / k);
    return 0;
}
```

- (d) Write only a nested if statement to print a message based on the option user has selected. The scheme is as follows. (4 marks)

**int option;**

Option	Message
1	Login
2	Transfer
3	Withdraw
4	Deposit
5	Exit

## QUESTION TWO (Total: 12 marks)

- (a) Write a C program to accept a 3 digit integer and arrange the digits in the input number in an increasing order. (5 marks)

**Example 1:**

Enter a value : 423

Output : 234

**Example 2:**

Enter a value : 658

Output : 568

(b) Write only the loop statements to print the following sequences:

1. -9 -7 -5 -3 -1

2. 1, 1, 2, 3, 5, 8, 13, 21

3. 888 444 222 111

(3 marks)

(c) Identify and correct the errors in each of the following statements.

1. firstnumber + secondnumber = total;

2. answer=2X + 4(z-3)<sup>2</sup>;

3. if(x = 1);  
    printf("Equal to 1");  
    z++;  
    else  
        printf("Not equal to 1");

4. x=1;  
    while(x>1)  
        total= total + x;  
    x++;

(4 marks)

---- End of Paper ----