INTI International University & Colleges

FINAL
Examination Paper

(COVER PAGE)

Session	:	**JANUARY 2018**
Programme	:	Diploma in Information And Communication Technology (DICTN)
Course	:	**ICT1103: Structured Programming**
Date of Examination	:	5 March, 2018 (Monday)
Time	:	2:00 pm – 4:00 pm Reading Time : Nil
Duration	:	2 Hours

Special Instructions :

Section A: Answer **FOUR (4)** questions.
Section B: Answer **TWO (2)** questions.

Materials permitted :
Non-programmable calculator

Materials provided :
Nil

Examiner(s) : **Shee Fui Chie**

Moderator : **Siti Hawa Binti Mohamed Said**

This paper consists of 7 printed pages, including the cover page

DIPLOMA IN COMPUTER AND INFORMATION TECHNOLOGY PROGRAMME (DICTN)
ICT1103: STRUCTURED PROGRAMMING
FINAL EXAMINATION: JANUARY 2018 SESSION

SECTION A: 60 marks
Instruction: This section consists of **FOUR (4)** questions. Answer **ALL** questions in the answer booklet provided.

Question 1

(a) Name **SIX (6)** common stages of program development life cycle. (3 marks)

(b) State if the following names of identifiers are valid or invalid. If invalid, explain why.
(i) IM4U
(ii) char
(iii) price/total
(iv) _9students
(v) #define
(vi) Tom$gmail

(6 marks)

(c) Explain the purpose of the following C++ statements:
(i) //A C++ lab tutorial
(ii) #include "myfunction.cpp"
(iii) system("pause");
(iv) cout<<endl;
(v) double number = 6.79;
(vi) cout<<"\\";

(6 marks)
[Total 15 marks]

Question 2

(a) Write the output for the following code fragment:

```
int x = 4, y = 1, z = 0;
x = y++ + x;
z = --y * --x;
cout<<x<<y<<z<<endl;
x  += z;
++z;
x = ++y % z;
cout<<x<<y<<z<<endl;
```

(6 marks)

(b) Convert the following C++ statement into **if statement:**

```
switch(num) {
        case 1:
        case 2:              total = 5; break;
        case 3:              total = 10; break;
        case 8: case 10:     total = total + 4; break;
        default:             total = total * 6;
}
```

(9 marks)
[Total 15 marks]

Question 3

(a) Apply loop structure to display the words as the arrangement below. **ONE (1)** *cout* could only output one of the words "apple", "orange", or "lemon".

apple orange lemon kiwi apple orange lemon kiwi apple orange lemon kiwi

(9 marks)

(b) Write C++ input and output stream to read and display the firstname and lastname variables that declared as following:

```
string firstname;
char lastname[30];
char initial;
```

(6 marks)
[Total 15 marks]

Question 4

(a)

```
struct vegetable {
        char name[20];
        double price;
        double unitSold;
};
```

Given a structure vegetable as above to store and process a vegetable's record with the elements name, price, and total unit sold. Write the C++ statements for the following:

(i) declare a structure variable *vege1* of the type *vegetable*.

(ii) assigns 3.55 to element price in the structure variable vege1.

(iii) input the string to the element name in the structure variable veg1.

(iv) declare an array of structure *vege2* of the type *vegetable* to store 100 different vegetables.

(v) Initialize all the vegetable prices to 0.

(5 marks)

(b) Explain the following C++ statement:

(i) int *X;

(ii) int *amount = &itemPrice;

(iii) address = *streeNo;

(iv) new int[10];

(v) delete p1;

(5 marks)

(c) Identify screen output of the following code fragment:

```
#include <iostream>
#include <fstream>

using namespace std;

int main()
{
        int number = 51;
        int count = 0;
        ofstream out_stream;
        ifstream in_stream1;

        out_stream.open("Integers");
        for (count = 1; count <= 4; count++)
                out_stream << number++ << ' ';
        out_stream.close();

        in_stream1.open("Integers");
        count = 0;
        while (in_stream1 >> number)
        {
                count++;
                //in_stream1 >> number;
                cout << number << ' ';
        }
        in_stream1.close();
        cout << "\nThere are " << count << " integers in the file.\n";

        system("pause");
}
```

(5 marks)

[Total 15 marks]

SECTION B: 40 marks
Instruction: This section consists of **TWO (2)** questions. Answer **ALL** questions in the answer booklet provided.

Question 1

Write a menu-driven program that allows its user to enter a trip for 50 times, process and display the population and area of the trip user selects. The program should include a function ***country()*** that, accepts the trip selected by the user as a parameter, pass back the population and area of that trip. Included the function prototype.

Country	**Population**	**Area (KM2)**
Malaysia	28,274,729	329,750
Singapore	4,701,069	693
Thailand	67,089,500	514,000

Sample input and output:

```
Country info
Trip   Country
------ ----------
   1   Malaysia
   2   Singapore
   3   Thailand

Enter trip 1 code: 1
Malaysia population is 28274729 and total area is 329750 KM2

Enter trip 2 code: 7
Invalid trip code!

Enter trip 2 code: 3
Thailand population is 67089500 and total area is 514000 KM2
....
Enter trip 50 code: 1
Malaysia population is 28274729 and total area is 329750 KM2
Thank you for using the program.
```

(20 marks)

Question 2

Write a program which reads the marks of all 100 students into a one-dimensional array called marks. And then store the marks of only those students who got 70 or more marks and the location of those students within the array mark into a multi-dimensional array named firstDivision.

For example,

marks array

40	21	85	4	90	76	7	.....

FirstDivision array

2	85
4	90
5	76

.....

(20 marks)

~THE END ~