INTI International University & Colleges

FINAL
Examination Paper

(COVER PAGE)

Session	:	**APRIL 2018**
Programme	:	Diploma in Information And Communication Technology (DICTN) Diploma in Information Technology (DITN)
Course	:	**ICT1103: Structured Programming**
Date of Examination	:	26 July, 2018 (Thursday)
Time	:	8:00am – 10:00am Reading Time : Nil
Duration	:	2 Hours

Special Instructions :

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

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

Materials permitted :
Non-programmable calculator

Materials provided :
Nil

Examiner(s) : **Teng Wei Jian** and Shee Fui Chee

Moderator : **Siti Hawa Binti Mohamed Said**

*This paper consists of **6** printed pages, including the cover page*

DIPLOMA IN COMPUTER AND INFORMATION TECHNOLOGY PROGRAMME (DICTN)
DIPLOMA IN INFORMATION TECHNOLOGY PROGRAMME (DITN)
ICT1103: STRUCTURED PROGRAMMING
FINAL EXAMINATION: APRIL 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) Identify the ESCAPE SEQUENCES for the following descriptions:
- (i) Null character
- (ii) Print a "
- (iii) New-line
- (iv) Carriage-return
- (v) Move cursor backward one position.

(5 marks)

(b) Answer the following questions with regards to text file processing:
- (i) What header do you put at the top of a program that enables input and output to a file?
- (ii) Which file open mode will keep the existing data?
- (iii) Give the operator that outputs to file.
- (iv) Name the function to close the file.
- (v) What is the type of object used to read data from a file?

(5 marks)

(c) Name the program development life cycle phase for the following:
- (i) Enhance, modify, and update the system based on user's requirement.
- (ii) Create the user interface and write the code.
- (iii) To understand the problem statement, what is the requirement, what should be the output of the problem solution.
- (iv) Check whether the code written is solving the specified problem or not.
- (v) Write or implement actual programming instructions.

(5 marks)

(Total: 15 marks)

Question 2

(a) State the output of the following code segment:

(i)
```
int x = 1, y = 0;
if (x > 0 && y < 0)
      x = y = 23;
cout << x << " " << y << endl;
```

(ii)
```
int x = 1, y = 0;
if (x > 0 || y < 0)
      x = y = 23;
cout << x << " " << y << endl;
```

(iii)
```
int x = 10, y = 40;
if (x >= 10) {
     if (y < 40)
          y++;
     else
          y--;
}
cout << x << " " << y << endl;
```

(iv)
```
int x = 10, y = 40;
if (x >= 10) {
     if (!(y <= 40))
          --y;
     else
          y++;
}
cout << x << " " << y << endl;
```

(v)
```
int i = 8, j = 14;
if (i  <= 10 && i >= 100)
     i += 3;
else
     j %= 4;
cout<<i<<" " <<j<<endl;
```

(10 marks)

(b) Differentiate between a nested if and a nested loop. Give an example for each of them.

(5 marks)

(Total: 15 marks)

Question 3

(a)

```
number = 30;
while (number>=0){
     cout<<setprecision(2)<<fixed<<number;
     number -= 1;
}
```

Rewrite the above `while` statement in:

(i) *for* statement (5 marks)

(ii) *do-while* statement (5 marks)

(b) Identify the output of the following code fragment:

```
int price, amount;
int *priceptr;
price = 30;
priceptr = &price;

cout << price << endl;
cout << *priceptr << endl;

price = 40;
amount = 3 * *priceptr;

cout << price << endl;
cout << *priceptr << endl;
cout << amount << endl;
```

(5 marks)

(Total: 15 marks)

Question 4

(a) Define a structure called `club` that consists the following list of data members:

Name of member
Membership no
Member type
No of dependents

(5 marks)

(b) Show the working of the following equation to get the final answer, where `APPLE=false`, `BLUETOOTH=true` and `CHAT=false`.

(i) `bool outcome = APPLE || CHAT && BLUETOOTH`
(ii) `bool outcome = APPLE && BLUETOOTH || (!APPLE)`

(5 marks)

(c) Name appropriate C++ data type for the following values:

(i) -2.987
(ii) 30
(iii) "427"
(iv) false
(v) '*'

(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 program to display the square root of a number entered by user. The program has THREE (3) functions that will process the following tasks:

- `InputValue()` function: prompts user to enter a number and then returns the number input by the user
- `calSR()` function: calculates the square root of the number that user entered and returns the result
- `OutputSR()` function: displays the square root number that was calculated in `calSR()`

Include the function prototype for all functions.

(20 marks)

Question 2

Declare and initialize a character array `letter[30]` with a string `"welcome to touch n go"` and another character array `notvowel[15]` all 15 elements to `NULL`.

Write a program that calculate the total number of vowels in `letter[]` and also stores all the none-vowel characters into the array `notvowel[]`. Display the total number of vowels and the `notvowel[]` array.

(20 marks)

~ The End ~