

 **INTI** International
University & Colleges

FINAL
Examination Paper

(COVER PAGE)

Session : AUGUST 2018

Programme : Diploma in Information And Communication Technology (DICTN)
Diploma in Information Technology (DITN)

Course : ICT1103: Structured Programming

Date of Examination : 10 December 2018, (Monday)

Time : 11:00am – 1:00pm 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) : Shee Fui Chie, Ng Ruoh Ling, Lai Kim Min, and Teng Wei Jian

Moderator : Siti Hawa Binti Mohamed Said

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

DIPLOMA IN INFORMATION AND COMMUNICATION TECHNOLOGY
PROGRAMME (DICTN)
DIPLOMA IN INFORMATION TECHNOLOGY PROGRAMME (DITN)
ICT1103: STRUCTURED PROGRAMMING
FINAL EXAMINATION: AUGUST 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) Discuss any **THREE (3)** tasks involved in the maintaining phase of a program development life cycle. (6 marks)
- (b) Provide any **FIVE (5)** data types of C++. For each type, provide the memory size it reserves. (5 marks)
- (c) Write a switch statement to determine the grade of the sweetness test result of fruit.

```
if the sweetness is between 8 and 10, assign A to grade,  
if the sweetness is between 6 and 7, assign B to grade,  
if the sweetness is 5, assign C to grade,  
otherwise the grade is F.
```

(4 marks)

[Total 15 marks]

Question 2

- (a) Provide **FOUR (4)** rules when dealing with switch statement. (4 marks)
- (b) Convert the following if else statement using ternary operator (? :).

```
char grade;  
if (score >= 70)  
    grade = 'A';  
else if (score >= 55)  
    grade = 'P';  
else  
    grade = 'F';
```

(5 marks)

(c) Assuming function prototype is declared, identify and correct the errors for the following functions:

(i)

```
int sum( int x, int y ) {  
    int result;  
    result = x + y;  
    cout<< x <<" + "<< y <<" is " << result;  
}
```

(ii)

```
void main() {  
    Display(1);  
}  
  
void display (int x) {  
    if(x>=1) {  
        cout<<" x = "<< x;  
        x++;  
        display(x);  
    }  
}
```

(iii)

```
void main() {  
    int a=12, b=5;  
    multiply(a, b);  
}  
  
void multiply () {  
    int result = a * b;  
    cout << a <<" * "<< b <<" is " << result;  
}
```

(6 marks)

[Total 15 marks]

Question 3

(a) Explain the following functions for cstring with example each:

- (i) strcpy()
- (ii) strlen()
- (iii) strcmp()
- (iv) strcat()

(8 marks)

(b) Provide the output of the following program:

```
#include <iostream>
using namespace std;
void main()
{
    int num[] = { 7, 19, 23, 45, 31 };
    int a, b;
    int *p = num;
    a = *p;
    b = *(p+3);
    cout << a << "\t" << b << endl;
    a = *(p+1)+1;
    b = *p + *(p+2);
    cout << a << "\t" << b << endl;
    *p = b+2;
    *(p+2) = *(p+1) + *(p+4);
    *(p+3) = *(p+3) - b;
    cout << *p << "\t" << *(p+2) << "\t" << *(p+3) << endl;
    system("pause");
}
```

(7 marks)

[Total 15 marks]

Question 4

(a) Given the following code fragment:

```
int num[X][Y] = { {7,11,9}, {22,46,8}, {14,1,7}, {32,25,10} };

cout << num[1][2] << endl;
cout << num[2][1] << endl;
cout << num[2][0] + num[1][0] << endl;
```

Assuming X and Y are constant and are declared above the code fragment.

- (i) What values should be assigned to constant X and Y? (1 mark)
 (ii) What is the output of the program? (3 marks)

(b) What a simple program that reads 3 names from the user and save the records into a text file called records.dat with each name in a new line. (6 marks)

(c) Assuming that the necessary headers are already defined, rewrite the following program by removing the syntactical errors. Underline each correction in your answer.

```
structure Point {
    int x, y;
}

void showPoint(Point p) {
    cout<<"("<<p1.x<<"", "<< p1.y<<"")"<<endl;
}

void main(){
    Point p1;
    Point.x=3;
    Point.y=6;
    showPoint(Point);
    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 program that prompts the user to enter the monthly sales revenue for five salesmen in an array. The program should then display a bar graph comparing each sales revenue. Create each bar by a row of asterisks in a loop. Each asterisk should represent RM100 of sales. The program also calculates and displays the sum and average of all salesmen's sales revenue in 2 decimal points.

Sample input output:

```
Enter Salesman #1 revenue: 1000
Enter Salesman #2 revenue: 1200
Enter Salesman #3 revenue: 1600
Enter Salesman #4 revenue: 500
Enter Salesman #5 revenue: 2000
```

Sales Revenue Bar Chart (Each * = RM100)

```
Salesman #1: *****
Salesman #2: *****
Salesman #3: *****
Salesman #4: *****
Salesman #5: *****
```

```
Sum of all 5 salesmen sales revenue is RM6300.00.
Average of 5 salesmen sales revenue is RM1260.00.
```

(20 marks)

Question 2

Write a C++ function, *fractPart()*, that accepts a double typed number and return back the fractional part of the number. For example, if the number is 123.456, the number 0.456 should be returned. Write a program that prompts user for the double typed number in the *main()* and calls the *fractPart()*. The *main()* also call another function *outputFract()* to display the returned fractional part of the number.

Include the function prototype of *fractPart()* and *outputFract()*.

(Hint: apply explicit type conversion to help the fractional part)

(20 marks)

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