

**CONFIDENTIAL**



**FINAL EXAMINATION  
SEPTEMBER / OCTOBER SEMESTER 2018**

**PROGRAMMING FUNDAMENTALS  
(CSC1510)**

**(TIME : 3 HOURS)**

**MATRIC NO. :**

**IC. / PASSPORT NO. :**

**LECTURER : AMAR SUBEDI**

**GENERAL INSTRUCTIONS**

1. This question booklet consists of 8 printed pages including this page.
2. Answer **ALL** questions in Section A in the **ANSWER BOOKLET**.
3. Answer **ANY THREE (3)** questions in Section B in the **ANSWER BOOKLET**.
4. Answer **ALL** questions in Section C in the **ANSWER BOOKLET**.

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**INSTRUCTIONS:****TIME: 3 HOURS****SECTION A****(20 MARKS)**

There are TWO (2) questions in this section. Answer ALL Questions in the Answer Booklet.

1. Name TWO (2) types of data that are of the following data type:

a) integer (2 marks)

b) character (2 marks)

c) float (2 marks)

d) string with space (2 marks)

e) string without space (2 marks)

(CLO1:PLO1:C1)

2. For each of the following data, provide a scanf() statement to read the input data.

a) 101.25 (2 marks)

b) "Siti Aminah" (2 marks)

c) 'C' (2 marks)

d) CSC1510 (2 marks)

e) 202 (2 marks)

(CLO1:PLO1:C1)



## SECTION B

(30 MARKS)

There are FOUR (4) questions in this section. Answer ANY THREE (3) questions in the Answer Booklet.

1.

- a) What type of values does the following function return?

```
double getValue(int a, float b, String c)
```

(1 mark)

- b) Write a function named `timesTen`. The function should accept a float argument, and return a float value that is ten times the value of the argument.

(5 marks)

- c) Write a function call for the following function?

```
void showProduct (int num1, double num2)
```

(2 marks)

- d) What will be returned from the following function?

```
float functionA()  
{  
    float a = 8.5 + 9.5;  
    return a;  
}
```

(2 marks)

(CLO3:PLO6:C5)

2.

- a) The following program gets input of 5 integer numbers and stores it in a file named "Marks.dat". List the missing keywords accordingly.

```
#include <stdio.h>
main()
{
    FILE *fptr;
    int scores,i;

    fptr = _____ ("Marks.dat", "w");

    for(i=1;i<=5;i++)
    {
        _____ ("Enter 5 numbers:");
        _____ ("%d",&scores);
        _____ (fptr,"%d\n",scores);
    }
    _____ (fptr);
}
```

(5 marks)

- b) List TWO (2) other modes that is available in file processing.

(2 marks)

- c) Write the program segment to read the scores from the "Marks.dat" file and display it on the output screen.

(3 marks)

(CLO3:PLO6:C5)

3).

a) Write a series of if else statement for the following criteria:

- Assign 0.20 to discount if department equals 5 and price is RM100 or more.
- Assign 0.15 to discount if department is anything else and price is RM100 or more.
- Assign 0.10 to discount if department is 5 and price is less than RM100.
- Assign 0.05 to discount if department is anything else and price is less than RM100.
- No discount for unsatisfied condition.

(6 marks)

b) Assume the variables  $x = 5$ ,  $y = 6$ , and  $z = 8$ . Identify the value of the following statements either true or false.

i.  $x == 5 \mid \mid y > 3$

(1 mark)

ii.  $7 <= x \mid \mid z > 4$

(1 mark)

iii.  $2 != y \&\& z != 8$

(1 mark)

iv.  $z >= 9 \&\& x <= 5$

(1 mark)

(CLO3:PLO6:C5)



4) Consider the following code, and answer the question:

```
char again;
int selection;
printf("1. Addition ");
printf("2. Subtraction ");
printf("3. Quit ");
printf("Enter your selection: ");
scanf("%c",&selection);
```

- Using the while loop, write an input validation loop that asks user to keeps entering a number if value entered is not equal to 0. (2 marks)
- Using the do-while loop, write an input validation loop that asks user to enter 'Y', or 'y' if to continue to process program. (6 marks)
- Write the suitable if code for selection input 3. (2 marks)

(CLO3:PLO6:C5)

## SECTION C

(50 MARKS)

There is TWO (2) questions in this section. Answer the question in the Answer Booklet.

1. Write a program to process a collection of daily temperatures (stored in an array). Your program should be able to receive number of days to record from user, counting and display the category of temperature of each day in a report. Lastly display the summary of each data by the end of the report. Report should consist of: average temperature, number of days for each categories and category of temperature for each data.

Temperature Range	Temperature Category
Greater than 85 degrees	very hot
60 to 85 degrees	pleasant day
Less than 60 degrees	very cold

Note: you are required to use array, looping and if else statement.

Sample of output:

```
How many days to record? 5
Please enter 5 days temperature readings
Temperature day [1] = 12
Temperature day [2] = 85
Temperature day [3] = 35
Temperature day [4] = 21
Temperature day [5] = 44
```

-----  
Daily Temperatures Report  
-----

```
Temperature day [1] = 12 Celcius very cold
Temperature day [2] = 85 Celcius very hot
Temperature day [3] = 35 Celcius very cold
Temperature day [4] = 21 Celcius very cold
Temperature day [5] = 44 Celcius very cold
```

```
The average Temp for 5 days = 39 Celcius
Number of hot days           = 1 day/s
Number of pleasant days     = 0 day/s
Number of cold days          = 4 day/s
```

(25 marks)

(CLO3:PLO6:C5)



2. Write a program that able to receive the salary of a person for 12 months, stored in an array. Include a function to calculate the total salary and tax to be paid by referring to Table 1 below.

Salary	Tax
Less than 15000	15% of the salary
More than or equal to 15000 and less than 30000	$(\text{Salary} - 15000) * 18\% + 2250.00$
More than or equal to 30000 and less than 50000	$(\text{Salary} - 30000) * 20\% + 5500.00$
More than or equal to 50000	$(\text{Salary} - 50000) * 35\% + 10900.00$

(25 marks)

(CLO3:PLO6:C5)

\*\*\* END OF QUESTIONS \*\*\*

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