**CONFIDENTIAL**

Infrastructure
University
Kuala Lumpur

# FINAL EXAMINATION
## SEPTEMBER/OCTOBER SEMESTER 2015

BACHELOR OF INFORMATION TECHNOLOGY (HONS) IN
SOFTWARE ENGINEERING
BACHELOR OF INFORMATION TECHNOLOGY (HONS) IN
NETWORK TECHNOLOGY
BACHELOR COMPUTER SCIENCE (HONS)
BACHELOR OF SOFTWARE ENGINEERING (HONS)

## PROGRAMMING FUNDAMENTALS
## (BTT107)

## (TIME : 3 HOURS)

**MATRIC NO.** :

**IC. / PASSPORT NO. :**

**LECTURER** : SUHAILA MOHD NORDIN

### GENERAL INSTRUCTIONS

1. This question booklet consists of 8 printed pages including this page.
2. **SECTION A** and **SECTION B** answer **ALL** questions in the Answer Booklet:
3. **SECTION C** : There are **TWO (2)** questions in this section. Answer **ONE (1)** question only in the Answer Booklet.

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**INSTRUCTIONS:**                                            **TIME:** *3 HOURS*

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**SECTION A**                                              (40 MARKS)

**There are NINE (9) questions in this section.  Answer ALL Questions in the Answer Booklet.**

1. Write correct C syntax  for each statement below:

   a)     Initializing variable tax_p with the value 0.25 percent

                                                                    (2 marks)

   b)     Declare a variable named salary with double data type (declare variable)

                                                                    (2 marks)

   c)     State instruction that allowed user to input a number as string data (input)

                                                                    (2 marks)

   d)     Input number of computer using variable (direct assign)

                                                                    (2 marks)

2. Which of the following variables names are valid? If it's not valid give your reason.

   a)  int 1student;

                                                                    (2 marks)

   b)  float X;

                                                                    (2 marks)

   c)  float Total price;

                                                                    (2 marks)

   d)  int distance_in#s;

                                                                    (2 marks)

   e)  char *SuHaiLa

                                                                    (2 marks)

3. Define the functions fwrite() and fseek()

                                                                    (4 marks)

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4. Define function function pass by reference.

(4 marks)

5. Write a program in c to print 5 to 100 using for loop use num as your initializer. The value should increase by 5. ( note: Display the answer.)

   Example:   5,10,15,20…..100

(4 marks)

6. Consider the following program. Identify the syntax error/s

```
#incdude <stdio.h>
void main () {
int x=6; y=8;
char z = '1';
+y+;
Printf( "%d%c", &x%y }
```

(5 marks)

7. Write one line of C language statement to produce the following output

```
This Is
My
Exam
```

(2 marks)

8. What is the output of the following program segment:
```
void main()
{
int y;
 for (y = 0 ; y <=10 ; y++)
    {
    printf("Line ********** >> %d  \n", y);
           y+=2;}
    printf(" Hello The last value of y => %d",y);
    getchar();
    }
```

(5 marks)

## SECTION B

There are EIGHT (8) questions in this section. Answer ALL Questions in the Answer Booklet.

1.  What will be output of the following c program? Explain your answer.

    (3 marks)

    ```c
    #include<stdio.h>
    int main(){
    int goto=5;
    printf("%d",goto);
    return 0;
    ```

2.  What will be the output of the following C program?

    (2 marks)

    ```c
    #define x 9.3
    int main(){
    float i;
    i=x+x+x;
    printf("1 = %.2f",i+1);
    getchar();
    return 0;}
    ```

3.  Find the output for the following C program

    (6 marks)

    ```c
    main( )
    {
    int x=20,y=35;
    x = y++ + x++;
    y = ++y + ++x;
    printf("line 1 = %d %d\n", x,y);
    printf("line 2 = %d %d\n", x+1,y+1);
    printf("line 3 = %d %d\n", x++,y++);
    getchar();}
    ```

4.  Display the output from the program segment below.

    (4 marks)

    ```c
    main( ){
    int n = 140;
    int *p = &n;
    printf("answer = %d\t\n",n+10);
    printf("answer = %d\t",*p*4);
    getchar();
    ```

5. Display the output from the program segment below.

(6 marks)

```
main( )
{
float S[5]={10.5,12.5,13};
S[0] = S[1]+S[2];
float *p=S;
printf("%.2f\t\n",S[0]);
printf("%.2f %.2f \t\n\n",S[1],S[2]);
printf("answer = %.2f\t",*p*4);
getchar();}
```

6. Write a C function name Count that accepts a *1-dimensional* floating-point array and its size as argument Count (int size). The function should be able to read the array contents, generate and returns the average to the main function

(8 marks)

7. Evaluate the following program segment, and write the output.

(5 marks)

```
#include<stdio.h>
int main(){
int i=2;
int n=100;

while (((n-i)%13)!=0){
        printf ("\t n =  %d  \n", n);
        n-=5;
}
printf("\t y =  %d", n);
getchar();
return 0;}
```

8. What is the output from the program segment below? Visualize each line.

(6 marks)

```
Line 1 -----int main ()
            {
Line 2 -----int n = 400;
Line 3 -----int *p = &n;
Line 4 -----int m = 500;
Line 5 ----int *ptr =&m;
Line 6 -----printf("%f\t",*p);
Line 7 -----p =&m;
Line 8 -----*p =*ptr+*p;
Line 9 -----printf("%d\t",n);
Line 10 ----printf("%d\t",*p);
            return 0;
```

## SECTION C

(20 MARKS)

There are TWO (2) questions in this section. Answer ONE (1) question only in the Answer Booklet.

1. Write a program that read three edges for a triangle and computes the perimeter if the input valid. Otherwise, display the the input is invalid. The input is valid if the sum of any two edges is greater than the third edges. If the value is valid, use the third edge (e3) as the row of half pyramid triangle.

   input : e1, e2, e3, total2edge, p

   *note:*      *e = edge, p = perimeter*

   process :    total2edge = e1+e2 or e1+e3 or e2+e3

        p = e1+e2+e3

   output : display all

   Refer to the sample valid input process

2. Write a program to process three days stock inventories items and its price (stored in an array). Your program should be able to received numbers of vendors to be stored in your system. Enter vendor's particulars and count total stock price inventory charges for each vendors. The program should also calculate the discount and charges after discount for each vendor using the total stock (base on table 2 below).

| Type | Discount percentage | stock price inventory charges range |
|------|---------------------|-------------------------------------|
| A | 25 percent | Above 600 |
| B | 15 percent | 401-600 |
| C | 10 percent | 200-400 |
| D | No discount | 200 |

Table 2: Discount table and type

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

(20 marks)

**Sample of output:**

```
Please Enter 3 days stock info

_____
_____
customer id => 12345

Date => 20022015

day[1] = 20
unit price [1] = 20

day 1 charges = 400.00

day[2] = 30
unit price [2] = 10

day 2 charges = 700.00

day[3] = 20
unit price [3] = 30

day 3 charges = 1300.00

Total charges = 1300.00
  Discounted price: 325.00
  Price after discount: 975.00

_____
customer id => 1254

Date => 20

day[1] = 10
unit price [1] = 20

day 1 charges = 200.00

day[2] = 20
unit price [2] = 10

day 2 charges = 400.00

day[3] = 1
unit price [3] = 10

day 3 charges = 410.00

Total charges = 410.00
  Discounted price: 61.50
  Price after discount: 348.50 _
```

*** END OF QUESTIONS ***