UNIVERSITI TUN HUSSEIN ONN MALAYSIA

FINAL EXAMINATION
SEMESTER I
SESSION 2012/2013

COURSE NAME	:	COMPUTER PROGRAMMING
COURSE CODE	:	DAM 31303
PROGRAMME	:	2 DAM / 3 DAM
EXAMINATION DATE	:	OCTOBER 2012
DURATION	:	2 ½ HOURS
INSTRUCTIONS	:	ANSWER **ALL** QUESTIONS IN SECTION A AND **ONE (1)** QUESTION ONLY IN SECTION B

THIS QUESTION PAPER CONSISTS OF EIGHT (8) PAGES

SECTION A
Instruction : Answer ALL Questions.

Q1 Read the system requirement below:

Description : A program that reads **FOUR (4)** numbers and calculate the average of the input numbers.

Input : User key in **FOUR (4)** numbers.
Process : Average = (Number1 + Number2 + Number3 + Number4) / 4.
Output : Display Average.

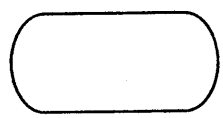
(a) Illustrate a flowchart for the above system requirement.

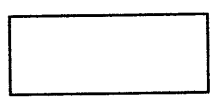
(10 marks)

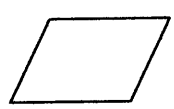
(b) Prepare pseudocode for the above system requirement.

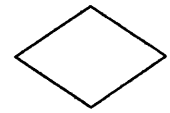
(5 marks)

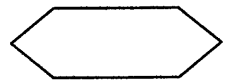
(c) Name the flowchart components below :

(i) 

(ii) 

(iii) 

(iv) 

(v) 

(5 marks)

(d) **Define**

(i) Flowchart.

(ii)Pseudocode.

(5 marks)

Q2 Identify the output produced by the following C program.

(a)

```
#include<stdio.h>

int main()
{
    int x,y;

    x = 21;
    y = 22;

    printf("Value for X is : %d\n", x);

    printf("Value for Y is : %d\n", y);
    // scanf("%d",&y);

    if ( x > y )
         printf("\nX is Larger - %d\n\n",x);

    else
         printf("\nY is Larger - %d\n\n",y);

    return 0;
}
```

(5 marks)

(b)

```
#include <stdio.h>

int main(void)
{
      int i, j;

      // for loop
      printf("This is a for loop\n");
      for(i = -2; i <= 0; i = i +1)
            printf("%d ", i);
      printf("\n");
      printf("\nThis is a while loop\n");
      j = -4; // initial condition

      // while loop
      while(j <= 0) // terminal condition
      {
            printf("%d ", j);
            j = j + 1;  // iteration
      }
      printf("\nResult is different...\n");
      return 0;
}
```

(7 marks)

(c)

```
#include <stdio.h>

int maximum(int, int, int);
void Display();

void main()
{
      printf("Maximum is:%d\n",maximum(9,7,8));
      Display();
      Display();
}

int maximum(int x, int y, int z)
{
      int max = x;
      if (y > max)
            max = y;

      if (z > max)
            max = z;

      return max;
}
```

```
void Display()
{
      printf("\nDisplay Maximum Number...");
}
```

(7 marks)

(d)

```
#include <stdio.h>

int main(void)

{
      int a= 3;
      int b= 6, c=0, d=1;

      c++;
      printf("%d %d ", 41-d++, c);
      printf("%d",d);

      return 0;
}
```

(3 marks)

(e)

```
#include <stdio.h>

int main(void)

{
      int a= 3, b=6, c=0, d=1;

      c++;
      printf("%d %d ", a++, --b + --d);
      printf("\n%d", b);
      return 0;
}
```

(3 marks)

Q3 (a) (i) State **THREE (3)** types of looping statement in C programming.

(6 marks)

(ii) Give example of a *for... loop* statement.

(4 marks)

(b) Write a FULL C program that produces output as per below by using the *while... loop* statement.

```
WARNING!!!

Error Detected!!!
Close Program Immediately!!!
Error Detected!!!
Close Program Immediately!!!

Cooperation Appreciated...
```

(15 marks)

(c) Write a FULL C program that produces screen output as per below by using the *for...loop* statement.

```
3 6 9 12 15 18
```

(10 marks)

SECTION B
Instruction : Answer ONE (1) question only.

Q4 Answer the following questions.

(a) Define Array.

(4 marks)

(b) Analyze the C program fragment below and answer the following questions based on it.

```
int grades[2][3];
```

(i) State how many memory cells are allocated for data storage?

(1 mark)

(ii) State what type of data can be stored there?

(1 mark)

(iii) Write a C program statement to refer to the first array element.

(2 marks)

(iv) Write a C program statement to refer to the last array element.

(2 marks)

(c) Write a single line C program for the following scenario:

(i) Declare a **TWO (2)** dimensional array called Data that allocate **FIFTY (50)** spaces with **TEN (10)** columns and **FIVE (5)** rows to be of data type double.

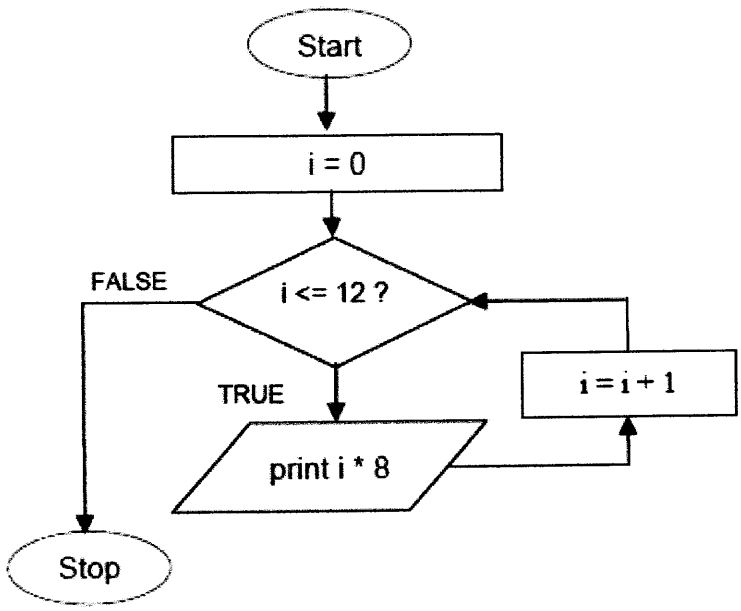
(3 marks)

(ii) Declare the variable `sumNumber` to be of type float.

(2 marks)

Q5 Write a full C program that will print the times table for number **EIGHT (8)**. You can refer to the flowchart and sample output provided to solve this problem.

FLOWCHART :



SAMPLE OUTPUT :

```
Times 8 Table
0 x 8 = 0
1 x 8 = 8
2 x 8 = 16
3 x 8 = 24
4 x 8 = 32
5 x 8 = 40
6 x 8 = 48
7 x 8 = 56
8 x 8 = 64
9 x 8 = 72
10 x 8 = 80
11 x 8 = 88
12 x 8 = 96
```

(15 marks)