UTHM
Universiti Tun Hussein Onn Malaysia

UNIVERSITI TUN HUSSEIN ONN MALAYSIA

FINAL EXAMINATION
SEMESTER III
SESSION 2018/2019

COURSE NAME	:	COMPUTER PROGRAMMING
COURSE CODE	:	DAC 11102
PROGRAMME CODE	:	DAA
EXAMINATION DATE	:	AUGUST 2019
DURATION	:	2 HOURS AND 30 MINUTES
INSTRUCTION	:	SECTION A :ANSWER **TWO (2)** QUESTIONS ONLY SECTION B : ANSWER **ONE (1)** QUESTION ONLY

THIS QUESTION PAPER CONSISTS OF THIRTEEN **(13)** PAGES

Q1 Differentiate between program, programming languages and programmer.

(3 marks)

Q2 a) Determine the output of the program;

```
#include <stdio.h>
main()
{
      int x = 10;
      {
          int x = 0;
          printf("%d",x);
      }
}
```

i. 0
ii. Undefined
iii. 10
iv. Compilation error

(1 mark)

b) Determine the output of the program;

```
#include <stdio.h>
main()
{
 int i,j;
 for(i = 0,j=0;i<5;i++)
 {
   printf("%d%d--",i,j);
 }
}
```

i. 0--01--12--23--34--
ii. 00--10--20--30--40--
iii. Compilation Error
iv. 00--01--02--03--04--

(1 mark)

c) Determine the output of the program;

```
#include <stdio.h>
void main()
{
int a = 0;
```

```
while(a++ < 5)
printf("JKA");
}
```

i. JKA printed 5 times
ii. JKA printed 4 times
iii. JKA printed 0 times
iv. JKA printed infinite times

(1 mark)

Q3 Give the definition of the following basic commands.

a) `#include <stdio.h>` :
b) `int main ( )` :
c) `{` :
d) `}` :
e) `printf ("Hello World! ");` :
f) `/* some comments */` :

(6 marks)

Q4 Determine the output of the program;

a)
```
#include <stdio.h>
int main()
{
   char ch = 'A';
   char str[20] = "fresh2refresh.com";
   float flt = 10.234;
   int no = 150;
   double dbl = 20.123456;
   printf("Character is %c \n", ch);
   printf("String is %s \n" , str);
   printf("Float value is %f \n", flt);
   printf("Integer value is %d\n" , no);
   printf("Double value is %lf \n", dbl);
   return 0;
}
```


(5 marks)

b)
```
#include<stdio.h>
void test();
int main()
{
   int m = 22, n = 44;
   printf("\nvalues : m = %d and n = %d", m, n);
   test();
}
void test()
{
   int a = 50, b = 80;
   printf("\nvalues : a = %d and b = %d", a, b);
}
```

(2 marks)

c)
```
#include <stdio.h>
    int main() {
        int num = 8;
        switch (num)
{
            case 7:
                printf("Value is 7");
                break;
            case 8:
                printf("Value is 8");
                break;
            case 9:
                printf("Value is 9");
                break;
            default:
                printf("Out of range");
                break;
}
        return 0;
    }
```


(2 marks)

d)
```
#include<stdio.h>
int main()
{
      int num1=1;
```

```
        int num2=2;
        if(num1<num2)
        {
              printf("num1 is smaller than num2");
        }
        return 0;
}
```

(2 marks)

e)
```
#include<stdio.h>
int main()
{
        int num=19;
        if(num<10)
        {
              printf("The value is less than 10");
        }
        else
        {
              printf("The value is greater than 10");
        }
        return 0;
}
```

(2 marks)

Q5 Identify the following statement either TRUE or FALSE.

a) There are three type of function which are definition, prototype and call
b) Function prototype consist function name, type and call
c) The meaning of Global prototype is the function prototype placed inside function definitions
d) Local variable declared outside a function
e) Local variable only referenced within that function

(5 marks)

Q6 Determine the output for the following program:

a)
```
#include <stdio.h>
int maximum(int, int, int);
int minimum(int, int, int);

main()
{
     int a=50,b=5,c=25;
     printf("State the maximum value\n");
     printf("Maximum is: %d\n", maximum(a,b,c));
     printf("State the minimum value\n");
     printf("Minimum is: %d\n\n", minimum(a,b,c));
```

```
        printf("Good Luck for final exam!!!!");

}

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

        if (z > max)
                max = z;

        return max;
}

int minimum(int x, int y, int z)
{
        int min = x;
        if (y < min)
                min = y;

        if (z < min)
                min = z;

        return min;
}
```

(10 marks)

b)

```
#include <stdio.h>

void a (void);
void b (void);

int x = 1;

main () {

        printf ("In main, x equals:  %d\n", ++x);

        a();
        b();

        printf ("In main, x equals:  %d\n\n", ++x);

        printf ("Well done my students!!!!");

        return 0;
}
```

```
void a (void) {
     int x = 100;
     printf ("In function (a), x equals:  %d\n", x);
}

void b (void) {
     printf ("In function (b), x equals:  %d\n", x++);
}
```

(10 marks)

Q7 a) Complete the following sentence with relevant words.

The elements of an array are related by the fact that they have the same _____ and _____.

(2 marks)

b) Explain briefly the difference between **Structure (Struct)** and **Array** with example.

[3 marks]

c) Provide the output of the following source code.

```
#include <stdio.h>
int main()
{
     int exam_score[4]={88, 80,75,95};
     int i, total = 0, student =4;
     float average;


     for (i = 0; i<4; i++)
     {
     printf("Mark for
student[%d]=%d\n",i,exam_score[i]);
     total += exam_score[i];
     }

     average = (float) total/student;
     printf("Average  for  4  student's  mark  is
%.1f\n",average);
}
```


[10 marks]

d) Given an array as below

```
num[5] = {9,3,5,2,1}
```

Provide a simple C programming to display the largest number in the array `num[5]`.

[10 marks]

SECTION B

Q8 a) Evaluate the C program in **Figure Q8 (a)** and answer the following questions;

i. Identify the name of file created by the program.

(1 marks)

ii. Determine the display output when the program could not find the saved file.

(1 marks)

iii. Determine the saved output if the user entered details for Ms Farah whose 31 years old and received salary of RM 2500.

(3 marks)

b) From the Figure **Q8 (b)**, answer the following;

i. Identify the variables and its data type for the program.

(2 marks)

ii. Determine the output for the program.

(3 marks)

c) A salesman would like to store information of cars as given in **Table 1**. By using structure syntax, write full functional C program.

Table 1

Model	Capacity	Price (RM)
Waja	1.6	60000
Wira	1.5	50000

(15 marks)

Q9 a) Evaluate the C program in **Figure Q9 (a)** and answer the following questions;

i. Identify all the data type and variables used in this program.

(2 marks)

ii. Determine the output for this program if the input is as shown in **Table 2.**

Table 2

Name	Salary
Jamil	5000
Basri	4500
Rahmat	6000
Jackson	5500

(3 marks)

b) From the Figure **Q9 (b)**, answer the following;

i. Identify and rewrite the structure syntax for the program

(2 marks)

ii. If a user entered "Baizura", "30", "4000" and "Working". Determine the display output.

(2 marks)

iii. Determine the file created by the program.

(1 mark)

c) An administration work would like to entered new staff information as shown in **Table 3**. By using structure syntax, write full functional C program.

Table 3

Staff	Age	Position (DS)
Nurul	32	51
Nur'Ain	31	52

(15 marks)

-END OF QUESTIONS –

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```
#include <stdio.h>

main()
{
    FILE *fptr;
    char name[20];
    int age;
    float salary;

    fptr = fopen("emp.txt", "w");

    if (fptr == NULL)
    {
        printf("File does not exists \n");
        return 0;
    }
    printf("Enter the name \n");
    scanf("%s", &name);
    fprintf(fptr, "Name    = %s\n", name);
    printf("Enter the age\n");
    scanf("%d", &age);
    fprintf(fptr, "Age     = %d\n", age);
    printf("Enter the salary\n");
    scanf("%f", &salary);
    fprintf(fptr, "Salary  = %.2f\n", salary);
    fclose(fptr);
}
```

Figure Q8 (a)

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```
#include <stdio.h>
#include <string.h>

struct Books {
   char  title[50];
   char  author[50];
   char  subject[100];
   int   book_id;
};

void printBook( struct Books *book );
int main( ) {

   struct Books Book1;
   struct Books Book2;

   strcpy( Book1.title, "Pengaturcaraan Komputer Menggunakan C++");
   strcpy( Book1.author, "Dayang Norhayati Abang Jawawi");
   strcpy( Book1.subject, "C Programming");
   Book1.book_id = 6495407;

   strcpy( Book2.title, "Mechanics of Materials:12th Edition");
   strcpy( Book2.author, "R.C. Hibbeler");
   strcpy( Book2.subject, "Mechanics of Materials");
   Book2.book_id = 6495700;

   printBook( &Book1 );

   printBook( &Book2 );

   return 0;
}

void printBook( struct Books *book ) {

   printf( "Book title : %s\n", book->title);
   printf( "Book author : %s\n", book->author);
   printf( "Book subject : %s\n", book->subject);
   printf( "Book book_id : %d\n", book->book_id);
}
```

Figure Q8 (b)

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```
#include<stdio.h>

struct Employee
{
    char ename[10];
    int sal;
};

struct Employee emp[5];
int i, j;
void ask()
{
    for(i = 0; i < 3; i++)
    {
        printf("\nEnter %dst Employee record:\n", i+1);
        printf("\nEmployee name:\t");
        scanf("%s", emp[i].ename);
        printf("\nEnter Salary:\t");
        scanf("%d", &emp[i].sal);
    }
    printf("\nDisplaying Employee record:\n");
    for(i = 0; i < 3; i++)
    {
        printf("\nEmployee name is %s", emp[i].ename);
        printf("\nSlary is %d", emp[i].sal);
    }
}
main()
{
    ask();
}
```

Figure Q9 (a)

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```
#include<stdio.h>

struct emp
{
    char name[10];
    int age;
};

main()
{
    struct emp e;
    FILE *p,*q;
    p = fopen("name.txt", "a");
    q = fopen("name.txt", "r");
    printf("Enter Name and Age:");
    scanf("%s %d", e.name, &e.age);
    fprintf(p,"%s %d", e.name, e.age);
    fclose(p);
    do
    {
        fscanf(q,"%s %d", e.name, e.age);
        printf("%s %d", e.name, e.age);
    }
    while(!feof(q));
}
```

Figure Q9 (b)