UTHM
Universiti Tun Hussein Onn Malaysia

UNIVERSITI TUN HUSSEIN ONN MALAYSIA

FINAL EXAMINATION
SEMESTER I
SESSION 2019/2020

COURSE NAME	:	COMPUTER PROGRAMMING
COURSE CODE	:	DAM 31303
PROGRAMME CODE	:	DAM
EXAMINATION DATE	:	DECEMBER 2019/JANUARY 2020
DURATION	:	3 HOURS
INSTRUCTION	:	ANSWER ALL QUESTIONS

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THIS QUESTION PAPER CONSISTS OF **NINE (9)** PAGES

Determine the output of this expression either **TRUE** or **FALSE**. If the output is **FALSE**, give the right answer.

Question	Expression	Output	TRUE/FALSE
| **Q1** | ```c
#include<stdio.h>

main( )
{
    int i,j;
    i =10;
    j =!i>14;
    printf("j=%d",j);
    return 0;
}
``` | j=0 | |
| **Q2** | ```c
#include <stdio.h>

main( )
{
    int a,b,c,d,e;
    a = 8;
    b = 12;
    c = 10;
    d = a*b*c;
    e = (d + 165) / 166;
    printf("e=%d\n", e);
    return 0;
}
``` | e=6 | |
| **Q3** | ```c
#include<stdio.h>

main( )
{
    int a,b,c,d,e;
    a = 4;
    b = 5;
    c = 5;
    d = 6;
    e = 10;
    a*=b+c*d/e;
    printf("a=%d",a);
    return 0;
}
``` | a=24 | |

| Q4 | ```c
#include <stdio.h>

main( )
{
    int v,w,x,y,z;
    v = 5;
    w = 12;
    x = 8;
    y = v*w;
    z = x + y * v / 4 % 2;
    printf("z=%d\n", z);
    return 0;
}
``` | z=8 | |
| --- | --- | --- | --- |
| Q5 | ```c
#include<stdio.h>

main( )
{
    int a,b,c,d,e;
    a =3;
    b = 5;
    c = 12;
    d = a*c / b;
    e =d>6;
    printf("e=%d",e);
    return 0;
}
``` | e=1 | |
| Q6 | ```c
#include<stdio.h>

main( )
{
    int y = 100;
    constint x = y % 7;
    printf("%d\n", x);
    return 0;
}
``` | x = 3 | |
| Q7 | ```c
#include<stdio.h>

main()
{
int a[] = {2,1};

printf("%d", *a);
}
``` | 2 | |

| Q8 | ```c
#include<stdio.h>

main()
{
        int x = 3;
         x += 2;
         x =+ 2;
         printf("x = %d", x);
}
``` | x=7 | |
| Q9 | ```c
#include<stdio.h>

main()
{
        int i = 1;
        while( i++<=5 )
        printf("%d ",i++);
}
``` | 1 3 5 | |
| Q10 | ```c
#include<stdio.h>

main()
{
int x = 5;
if(x=5)
    {
        if(x=5)
        printf("Hello");
    }
printf("Hi");
}
``` | HelloHi | |

(20 marks)

Q11   The C programming source code below contains syntax errors. Rewrite the correct source code (without syntax error) in your answer booklet and circle those errors.

```
#include <stdio.h>
void main ()
//C Program to enter mark for Maimunah
    char name[20]='Maimunah';
    int Marks
    printf("Enter marks, Marks =");
    scanf("%d",%Marks);
    printf("Student %s marks is %d.\n",Name,Marks);
}
```

(6 marks)

Q12   Predict the output for this C programming source code.

```
int k=4, l=3, m=2, n=5;

m--;
printf("%d %d %d \n", m, 2-n++, k-3);
printf("%d %d %d \n", --k, l++, n);
```

(3 marks)

Q13   List **two (2)** purposes of writing pseudocode in computer programming.

(2 marks)

Q14   In C programming, control structures such as *if*, *if-else* and *switch* control the flow of execution in a program. Explain:

(a) *if-else* selection (double selection),
(b) *switch* (multiple-selection).

(2 marks)

Q15   Explain briefly the function prototype. Support your answer with an example.

(2 marks)

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Q16   Consider the elements and memory address of `myarray[6]` in **Table 1** below and state the output for each of the following declaration.

Table 1: myarray[6]

1	2	3	4	5	6
2100	2101	2102	2103	2104	2105

(a)   Determine value of *k if int *k = myarray,

(1 mark)

(b)   Determine value of k if int *k = myarray,

(1 mark)

(c)   Determine value of (myarray),

(1 mark)

(d)   Determine value of (myarray + 3),

(1 mark)

(e)   Determine value of *(myarray + 4).

(1 mark)

Q17   **Table 2** showed the range for Cumulative Grade Point Average (CGPA) that determine the class of diploma classification while **Table 3** showed input from user. The formula to obtain the CGPA is:

$$CGPA = \frac{GPA1 + GPA2 + GPA3 + GPA4}{4}$$

Using C programming language:

(a)   sketch flowchart to calculate CGPA based on four semester and determined its class,

(8 marks)

(b)   develop a program to calculate CGPA based on four semester and determined its class

(12 marks)

The example of output is shown in **Figure Q17**.

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Q18   Develop pseudocode and full C program that will produce output as shown in
Figure Q18.

(20 marks)

Q19   Endurance car racing is one kind of race that a team shall finish approximately 500 km
of distance to complete the race. The time taken for a racing team to complete the race
may take up for hours. The race basically consists of 10 racing team compete each
others. Develop a system using structure and function from C programming that can
be used to calculate the differences of complete time taken between two racing team
and displays the time differences. The time difference is calculated from a follower
team and its predecessor.

You are required to:

(a)   Identify the inputs

(2 marks)

(b)   Identify the output

(1 mark)

(c)   Develop the flowchart for the program

(7 marks)

(d)   Develop a program using C programming language

(10 marks)

-END OF QUESTION-

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```
Enter GPA sem 1:
3.5
Enter GPA sem 2:
3.75
Enter GPA sem 3:
3.9
Enter GPA sem 4:
3.8
Your CGPA for all 4 semester is 3.74:
FIRST CLASS
_____

Process exited after 60.37 seconds with return value 0
Press any key to continue . . .
```

Figure Q17

```
Months      No of Days
  1            31
  2            28
  3            31
  4            30
  5            31
  6            30
  7            31
  8            31
  9            30
 10            31
 11            30
 12            31
```

Figure Q18

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Table 2

CGPA	Class
3.75<=CGPA<=4.00	First Class
3.00<=CGPA<=3.75	Second Class Upper
2.50<=CGPA<=3.00	Second Class Lower
2.00<=CGPA<=2.50	Third Class

Table 3

Semester	Input
Enter GPA Sem 1	3.5
Enter GPA Sem 2	3.75
Enter GPA Sem 3	3.9
Enter GPA Sem 4	3.8

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