



UNIVERSITI TUN HUSSEIN ONN MALAYSIA

**FINAL EXAMINATION
SEMESTER II
SESSION 2016/2017**

COURSE NAME : COMPUTER PROGRAMMING
COURSE CODE : DAM 31303
PROGRAMME CODE : DAM
EXAMINATION DATE : JUNE 2017
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	<pre>#include<stdio.h> main() { int i,j; i =10; j =!i>14; printf("j=%d",j); return 0; }</pre>	j=0	
Q2	<pre>#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; }</pre>	e=6	
Q3	<pre>#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; }</pre>	a=24	

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<p>Q4</p>	<pre>#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; }</pre>	<p>z=8</p>	
<p>Q5</p>	<pre>#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; }</pre>	<p>e=1</p>	
<p>Q6</p>	<pre>#include<stdio.h> main() { int y = 100; constint x = y % 7; printf("%d\n", x); return 0; }</pre>	<p>x = 3</p>	
<p>Q7</p>	<pre>#include<stdio.h> main() { int a[] = {2,1}; printf("%d", *a); }</pre>	<p>2</p>	

<p>Q8</p>	<pre>#include<stdio.h> main() { int x = 3; x += 2; x =+ 2; printf("x = %d", x); }</pre>	<p>x=7</p>	
<p>Q9</p>	<pre>#include<stdio.h> main() { int i = 1; while(i++<=5) printf("%d ",i++); }</pre>	<p>1 3 5</p>	
<p>Q10</p>	<pre>#include<stdio.h> main() { int x = 5; if(x=5) { if(x=5) printf("Hello"); } printf("Hi"); }</pre>	<p>HelloHi</p>	

(20 marks)

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- Q11** The C programming source code below contains syntax errors. Rewrite the correct source code (without syntax error) at 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:

- if-else* selection (double selection),
- 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**.



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)

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-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
$3.75 \leq \text{CGPA} \leq 4.00$	First Class
$3.00 \leq \text{CGPA} \leq 3.75$	Second Class Upper
$2.50 \leq \text{CGPA} \leq 3.00$	Second Class Lower
$2.00 \leq \text{CGPA} \leq 2.50$	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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