UTHM
Universiti Tun Hussein Onn Malaysia

UNIVERSITI TUN HUSSEIN ONN MALAYSIA

FINAL EXAMINATION
SEMESTER II
SESSION 2018/2019

COURSE NAME	:	COMPUTER PROGRAMMING
COURSE CODE	:	DAE 20103
PROGRAMME	:	DAE
EXAMINATION DATE	:	JUNE / JULY 2019
DURATION	:	2 HOURS 30 MINUTES
INSTRUCTION	:	ANSWER **ALL** QUESTIONS IN SECTION A AND SECTION B.

THIS QUESTION PAPER CONSISTS OF **FIFTEEN (15)** PAGES

SECTION A:

(1.5 marks each)

Q1. The set of instructions that a computer will follow is known as:
- A. CPU
- B. Algorithm
- C. Program
- D. Hardware

Q2. #include <iostream>
- A. is a variable declaration
- B. an executable statement
- C. A preprocessor directive
- D. illegal code

Q3. What is the value of x after the following statements?

```
int x, y, z;
y = 10;
z = 3;
x = y * z + 3;
```

- A. 60
- B. 30
- C. 33
- D. None above

Q4. What punctuation ends most lines of C++ code?
- A. . (full stop)
- B. , (comma)
- C. : (colon)
- D. ; (semi colon)

Q5. Analyze the following code. Assuming all codes is written correctly, what is the output?

```
#include<iostream>
using namespace std;

void main()
{
        float x;
        x=15/4;
        cout<<x;
}
```

- A. 3
- B. 3.75
- C. x
- D. None above

Q6. Analyze the following code. Assuming all codes is written correctly, what is the output?

```
#include<iostream>
using namespace std;
void main()
{
        int x=10,y=20;
        if (x==y)
            cout<<"x equal to y"<<endl;
        cout<<"x not equal to y"<<endl;}
```

A. x not equal to y
   Press any key to continue . . .

C. x equal to y
   x not equal to y
   Press any key to continue . . .

B. x not equal to y
   x equal to y
   Press any key to continue . . .

D. None above

Q7. Analyze the following code. Assuming all codes is written correctly, what is the output?

```
#include<iostream>
using namespace std;
void main()
{
        int x=10,y=10;
        if (x==y)
            cout<<"x equal to y"<<endl;
        cout<<"x not equal to y"<<endl;}
```

A. x not equal to y
   Press any key to continue . . .

C. x equal to y
   x not equal to y
   Press any key to continue . . .

B. x equal to y
   x not equal to y
   Press any key to continue . . .

D. None above

Q8. Analyze the following code. Assuming all codes is written correctly, what is the output?

```
#include<iostream>
using namespace std;
void main()
{
        int x=10,y=10;
        if (x!=y)
            cout<<"x equal to y"<<endl;
        cout<<"x not equal to y"<<endl;}
```

A. x not equal to y
   Press any key to continue . . .

C. x equal to y
   x not equal to y
   Press any key to continue . . .

B. x not equal to y
   x equal to y
   Press any key to continue . . .

D. None above

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Q9. Which of the following is true for a void function?
- A. There cannot be a return statement.
- B. The value of void should be returned.
- C. The value of 0 should be returned.
- D. Nothing is returned.

Q10. Analyze the following code. Assuming all codes is written correctly, what is the output?

```
#include<iostream>
using namespace std;

void main()
{
        int x=0;
        x++;
        ++x;
        x+1;
        1+x;
        cout<<x<<endl;
}
```
- A. 1
- B. 2
- C. 4
- D. None above

Q11. A connector symbol in flowchart is denoted by;
- A. Oval
- B. Small Circle
- C. Rectangle
- D. Diamond

Q12. Identify the number of errors of the program below.

```
#include<iosteam>
using namespace std;

int main()
{
        int i;
        cout<<"Please enter an integer value:/n";
        cin>> i+4
        return 0;
}
```
- A. 1
- B. 2
- C. 3
- D. 4

Q13. A statement that is executed in a repetition structure, skips remaining statement in body of structure and proceeds with next iteration of loops, is known as;
- A. Break statement
- B. Continue statement
- C. Case statement
- D. None of them

Q14. Analyze the following code. Assuming all codes is written correctly, what is the output?

```
#include<iostream>
using namespace std;

int main()
 {
   int x,i;
   i = 10;
   x = ++i;
   cout<<"x: "<< x <<",";
   cout<<"i: "<< i;
   return 0;
 }
```

   A. x: 11   C. x: 11
       i: 11   i: 10
   B. x: 10   D. x: 10
       i: 11   i: 10

Q15. Analyze the following code. Assuming all codes is written correctly, what is the output?

```
#include <iostream>
using namespace std;

int main ()
{
  int a, b=3;
  a = b;
  a+=2;
  cout << a;
}
```

   A. 3   C. 5
   B. 4   D. 6

Q16. If an increment or decrement operator is placed after a variable, it is called as;

   A. Post-increment   C. Pre-increment and Pre-
                                         decrement
   B. Post-decrement   D. Both A and B

Q17. Break statement in repetition structure causes a program to

   A. Immediately exit   C. Again start the loop from 1
   B. Terminate   D. All of them

Q18. Based on the following code fragment below, estimate how many loops will the for statement execute?

```
for (i = 0; i < 5; i++)
```

   A. 3   C. 5
   B. 4   D. 6

Q19. Analyze the following code. Assuming all codes is written correctly, what is the output?

```
for (int count = 1; count < 5; count++)
cout << (2 * count) << " ";
```

    A. 2 4 6 8 10   C. 2468
    B. 2 4 6 8   D. 24 68 10

Q20. Functions can be also referred to;
    A. program   C. subroutine
    B. statement   D. statement block

ANSWERS SHEET

1. Ⓐ Ⓑ Ⓒ Ⓓ		11. Ⓐ Ⓑ Ⓒ Ⓓ
2. Ⓐ Ⓑ Ⓒ Ⓓ		12. Ⓐ Ⓑ Ⓒ Ⓓ
3. Ⓐ Ⓑ Ⓒ Ⓓ		13. Ⓐ Ⓑ Ⓒ Ⓓ
4. Ⓐ Ⓑ Ⓒ Ⓓ		14. Ⓐ Ⓑ Ⓒ Ⓓ
5. Ⓐ Ⓑ Ⓒ Ⓓ		15. Ⓐ Ⓑ Ⓒ Ⓓ
6. Ⓐ Ⓑ Ⓒ Ⓓ		16. Ⓐ Ⓑ Ⓒ Ⓓ
7. Ⓐ Ⓑ Ⓒ Ⓓ		17. Ⓐ Ⓑ Ⓒ Ⓓ
8. Ⓐ Ⓑ Ⓒ Ⓓ		18. Ⓐ Ⓑ Ⓒ Ⓓ
9. Ⓐ Ⓑ Ⓒ Ⓓ		19. Ⓐ Ⓑ Ⓒ Ⓓ
10. Ⓐ Ⓑ Ⓒ Ⓓ		20. Ⓐ Ⓑ Ⓒ Ⓓ

SECTION B

Q11. (a) Draw the flowchart for program below

(5 marks)

```cpp
#include<iostream>
using namespace std;

void main()
{
        int x,y;
        cout<<"x=";
        cin>>x;
        cout<<"y=";
        cin>>y;
        if (x!=y)
                if (x>y)
                        cout<<"x>y"<<endl;
                else
                        cout<<"x<y"<<endl;
        else
                cout<<"x=y"<<endl;
}
```

(b)   Re-write the program in **Q11 (a)** using else-elseif-else statement

(5 marks)

Q12.   (a)   Analyze the following program. Assuming it has no errors, determine the output of both 'x'.

(4 marks)

Program	Output (Answer)

`#include<iostream>`
`using namespace std;`
 	
`void main ()`
`{`
`      int x=100;`
`      int y=50;`
`      int *point_x;`
 	
`      cout<<"x="<<x<<endl;`
 	
`      point_x=&x;`
`      *point_x=y;`
 	
`      cout<<"x="<<x<<endl;`
`}`
	x=...........
	x=...........
	Press any key to continue . . .

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(b) Analyze the following program and its output. Give reasons why message_2 is printed with extra characters.

(2 marks)

Program
| ```
#include<iostream>
using namespace std;

void main ()
{
        char message_1 []={"hello"};
        char message_2 []={'h','e','l','l','o'};
        cout<<message_1<<endl;
        cout<<message_2<<endl;}
``` |
| Output |
| message_1:hello
message_2:hello ╠╟╠╟╠╟╠╟╠╟╠╟╠╟╠╟╠hello
Press any key to continue . . . |

Answer:

(c) Propose **two (2)** ways the program can be modified to display message_2 correctly.

(4 marks)

Q13. (a) Draw the flowchart for the following program

(5 marks)

```cpp
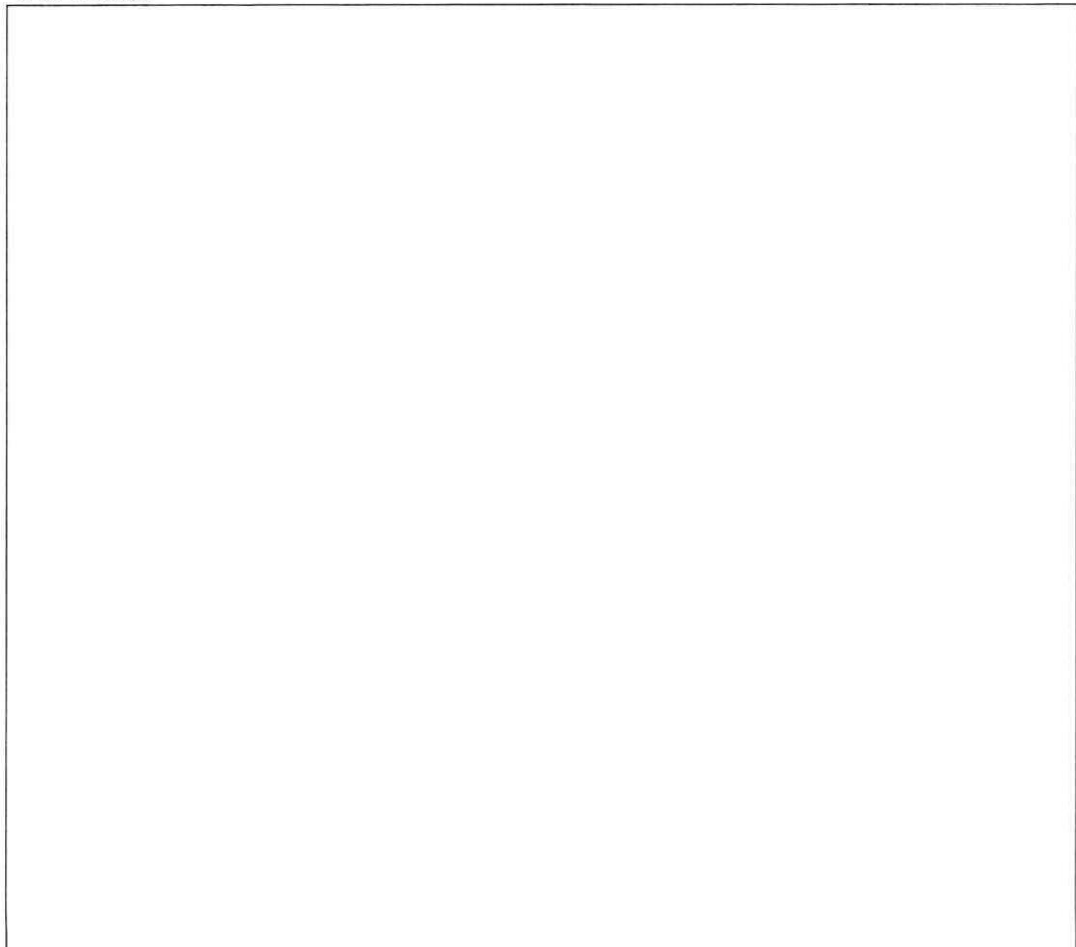#include <iostream>
using namespace std;

void main ()
{
        int A[5] = {5,10,15,20,25};
        int i, sum = 0;
        float average = 0;

        cout << "Element in array A is ";
        for (i=0;i<5;i++){
                cout << A[i] << " ";
                sum = sum + A[i];
        }
        average = sum/i;

        cout << "\nThe sum of all elements is " << sum << endl;
        cout << "The average is " << average << endl;
}
```

Flowchart

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(b)   What is the output for program in **Q12(a)** ?

(5 marks)

Q14. Analyze the following program. Assuming there is no error, determine its output

(10 marks)

Program
| ```
#include<iostream>
using namespace std;

struct info{
            int staff_num;
            int marks;
        };

void main ()
{
        struct info staff_1;
        struct info staff_2;

        staff_1.staff_num=1330;
        staff_1.marks=85;

        staff_2.staff_num=1335;
        staff_2.marks=75;


        cout<<"Staff num :"<<staff_1.staff_num<<endl;
        cout<<"Marks :"<<staff_1.marks<<endl;

        cout<<"Staff num :"<<staff_2.staff_num<<endl;
        cout<<"Marks :"<<staff_2.marks<<endl;}
``` |

OUTPUT

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Q15. Analyze the program below

```cpp
#include<iostream>
using namespace std;

void main ()
{
        int marks_1, marks_2;

        cout<<"Please input your marks for Test 1"<<endl;
        cin>>marks_1;
        cout<<"Please input your marks for Test 2"<<endl;
        cin>>marks_2;

        if (marks_1>marks_2)
                cout<<"Your marks is getting lower, try harder"<<endl;

        else if (marks_1<marks_2)
                cout<<"Your marks is getting higher, good job"<<endl;

        else
                cout<<"Your marks is the same, don't give up"<<endl;
}
```
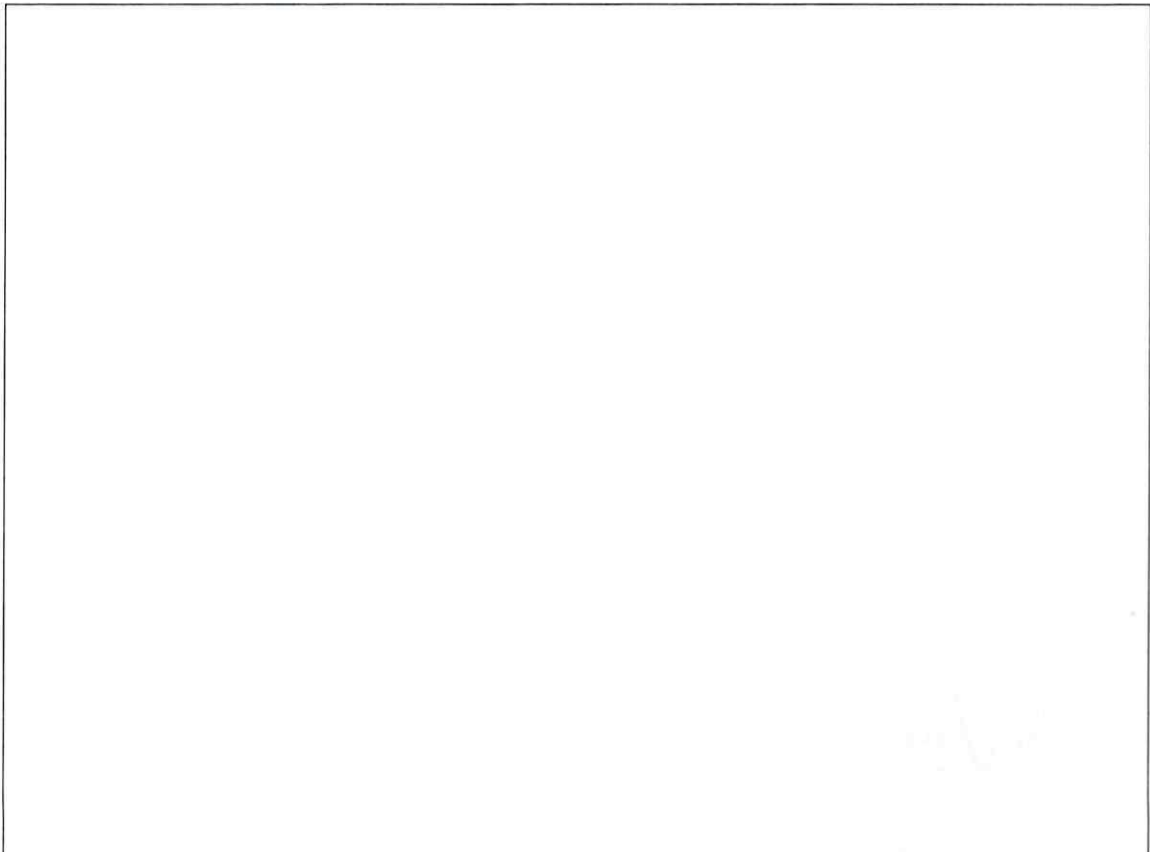
(a)   Draw the flowchart for it.

(5 marks)

(b)   Write a program to take an input from user (total marks) and determine whether he/she got an A (85 marks and above), F (below 40 marks) or pass (40 marks and above).

(5 marks)

Q16.   Analyze the following program.

```cpp
#include<iostream>
using namespace std;

void main ()
{
        for (int i=10;i>0;i--)
                cout<<i<<endl;
}
```

(a)   Determine its output

(2 marks)

(b)   Write a program using while loop to achieved similar output to **Q16(a).**

(4 marks)

(c)   Write a program using do-while loop to achieved similar output to **Q16(a).**

(4 marks)

Q17. Write a program base on the following specification:
- take integer inputs from user until user input a '0'.
- calculate the average using a **function**
- display the resulting average

(10 marks)

-END OF QUESTIONS-