

Answer about the following questions:

- [Q1] a) Write a C++ program which reads unknown number of integers and counts the number of odd numbers and the count of even numbers. Assume the input integers are all positive. Use any negative number as a sentinel.
b) Show the output for the following program part:

```
i)
int val;
for (val=-5; val<=5; val++)
{ switch (val)
{ case 0:
    cout<<("EgypT");
    break; }
  if (val > 0)
    cout<<("T");
  else if (val < 0)
    cout<< ("E"); }
cout<<"\n";
```

```
ii)

int i = 0;
i++;
cout<<(i++)<<endl;
cout<<(i--)<<endl;
cout<<(i)<<endl;
```

- [Q2] a) Use Switch Statement to write a C++ program to calculate Y from :

$$Y = \begin{cases} (3x-7) & \text{if } (x = -5) \\ (5x^2) & \text{if } (x = 2) \text{ or } (x = 5) \\ (x-4x^2) & \text{if } (x = -4) \text{ or } (x = 4) \end{cases}$$

- b) Which of the following do - while statements is equivalent to :

```
x=6;
while (x < 9)
{
    y = x + 7;
    x ++;
}
```

a)

```
x=6;
x ++;
do
{
    y = x + 7;
    x ++;
} while (x < 9);
```

b)


```
x=6;
do
{
    y = x + 7;
    x ++;
} while (x < 9);
```

c)

```
x=6;
do
{
    y = x + 7;
    x ++;
} while (x <= 9);
```

- d) none of the above

El-Minia University
Computer Science Dept.
Final exam May-2018



Programming I
BCN 112 (Computing and Bioinformatics)
Time allowed (2 hrs.)

Answer about the following questions:

[Q1] a) Write a C++ program which reads unknown number of integers and counts the number of odd numbers and the count of even numbers. Assume the input integers are all positive. Use any negative number as a sentinel. [8 points]

b) Show the output for the following program part: [7 points]

```
i)
int val;
for (val=-3; val<=3; val++)
{
    switch (val)
    {
        case 0:
            cout<<("MINIA");
            break;
            if (val > 0)
                cout<<("A");
            else if (val < 0)
                cout<< ("N");
    }
    cout<<"\n";
}
```

```
ii)
int i = 2;
i++;
cout<<(i++)<<endl;
cout<<(i--)<<endl;
cout<<(i)<<endl;
```

[Q2] What is the output of the following code segments: [15 points]

```
i.
int i = 0;
bool t = true;
bool f = false;
b = (t && ((i++) == 0));
b = (f && ((i+2) > 0));
cout<<i<<endl;
```

ii. cout<<"abc\ndef"<<endl;

7) The following code should print the even integers from 2 to 100:

```

counter = 2;
do {
    cout << counter << endl;
    counter += 2;
} While ( counter < 100 );

```

[Q4] a) Choose the correct answer for each code segment: [8 points]

i.

```
s=1;
while(s<4)
++s;
cout<<s;
```

- (a) 1
- (b) 4
- (c) 1234
- (d) 234

ii.

```
for (t=0;t<3;++t)
cout<<t;
```

- (a) 0
- (b) 01
- (c) 012
- (d) 0123

b) State whether each of the following is true or false [7 points]

- i. a switch statement must have at least three case labels.
- ii. The following two fragments of code work exactly the same way:

```

switch (x > y)
{
case true:
    cout << "X"; break;
case false:
    cout << "Y"; break;
}

```

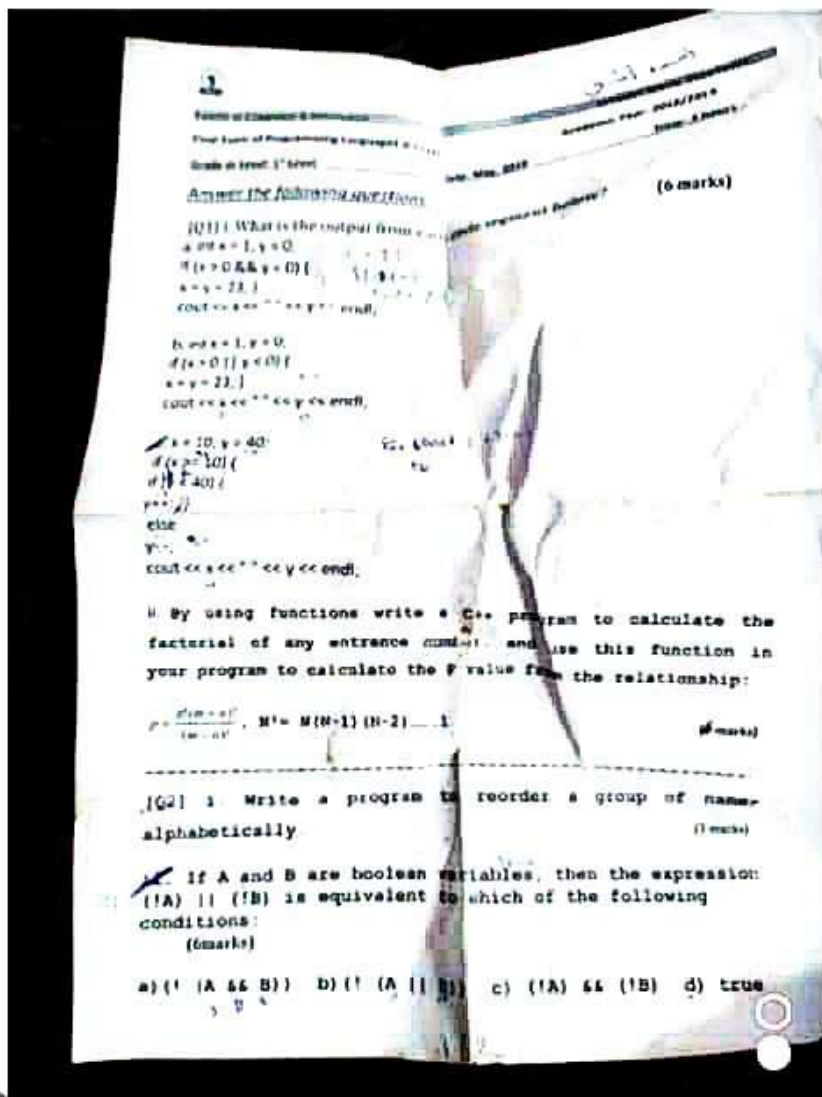
```

if (x > y)
    cout << "X";
else
    cout << "Y";

```

Good Luck

Prof. Dr. Abdelmgid Amr



تعداد طلاب كلية الهندسة والمعلومات ٢٠٢٠/٢٠٢١

٤٢ من ٦١

(Q3) Write a C++ program which reads unknown numbers of integers and counts the number of odd numbers and the even numbers. Assume the input integers are all positive.


```

int x, y;
x = 5;
y = 1;
while (x > 0)
{
    x = x - 1;
    y = y * x;
    cout << y << endl;
}

```

u
12
24
24
0

```

int k;
double j;
k = 2;
j = 2.0;
if (k == j)
    cout << "Okay:";
else
    cout << "Not okay:";

```

okay

a- Write a program to calculate area and circumference of a triangle. Where

$$Area = \sqrt{s(s-a)(s-b)(s-c)}, \quad s = \frac{a+b+c}{2}$$

circumference = $2s = a+b+c$.

[6 points]

b) Find the error(s) in each of the following: [6 points]

```

for ( x = 100, x >= 1, x++ )
    cout << x << endl;

```

X --

The following code should print whether integer value is odd or even:

```

if ( value % 2 ) {
    cout << "Even integer" << endl;
}
else {
    cout << "Odd integer" << endl;
}

```

Switch (value)

The following code should print the odd integers from 19 to 1:

```

int x = 19; x >= 1; x += 2 )
    cout << endl;

```

X -= 2

```
int x,even=0,odd=0;
    for(int i=0;;i++)
        }
        cin>>x;
        if(x<0)
            break;
            else{
                if(x%2==0)
                    even ++;
                    else
                        odd++;}
            {
cout<<"the number of even
numbers is "<<even<<"\n";
cout<<"the number of odd
numbers is "<<odd;
```

[Q3]: Write a C++ program which reads unknown number of integers and counts the number of odd numbers and the count of even numbers. Assume the input integers are all positive. Use any negative number as a sentinel. (7 marks)

ii. Study the following code segment. (6 marks)

```
int N = 3; int i, s;
for (i = 1; i <= N; i++) {
    cin >> s;
    cout << i << " " << s << " ";
    if (i % 3 == 0) { cout << endl; }
}
cout << endl;
```

- What is displayed with the given input? Watch the endl characters.

Input: 11 12 13 14 15 16 17 18 19

[Q4]: Write a C++ program to read a one dimensional array of N values, and determine the minimum element and its location? (1 mark)

ii. What is printed in each case? (6 marks)

```
string H = "17";
cout << H + "10 // 1" << endl;
```

[Q5]: Write a C++ program to find the value y from the relation: (7 marks)

$$y = \begin{cases} (3x-7) & \text{if } (x = -5) \\ (5x^2) & \text{if } (x = 2) \text{ or } (x = 5) \\ (x-4x^4) & \text{if } (x = -4) \text{ or } (x = 4) \end{cases}$$

ii. What is the output of the following code segment? (6 marks)

```
int k;
double j;
k = 2;
j = 2.0;
if (k == j)
    cout << "Okay";
else
    cout << "Not okay";
```

Good Luck

Prof. Abdelgeid Amin Ali

2/2



اتحاد طلاب كلية الهندسة والمعلومات ٢٠٢٠/٢٠١٩

مقدمة تكنولوجيا معلومات (IT)

٤٤ من ٦١



```
#include<iostream>
using namespace std;
int p( int n,int m)
    }

    int x=m-n, z=m+n,
    f1=1,f2=1,f3=1,p;
    for(int i=1;i<=n;i++)
        f1=f1*i;

    for(int i=1;i<=z;i++)
        f2=f2*i;

    for(int i=1;i<=x;i++)
        f3=f3*i;

    p=(f1*f2)/f3;
    return p;
    {
    int main()
    }

    int m,n;
    cin>>n>>m;
    int a=p(n,m);
```


الاسم: محمد جعفر حسن (مكتوب)

Minia University
Faculty of Computers & Information

Mid-Term Exam - April-2019
Programming Language (1) - CS192
Time allowed (1 hr.)

Answer about the following questions:

Q1) a) What is the output of the following code segments

```
int i = 0;
bool t = true;
bool f = false;
b = (t && ((i++) == 0));
b = (f && ((i+2) > 0));
cout << i << endl;
```

$i=1$

ii. cout << "abc\ndef" << endl;

iv. int x, y;

```
x = 5;
y = 1;
while (x > 0)
{
    x = x - 1;
    y = y * x;
    cout << y << endl;
}
```

4 3 2 1 0
4 12 24 240
4 12 24 240

v. int k;
double j;
k = 2;
j = 2.0;
if (k == j)

cout << "Okay:";

else

cout << "Not okay:";

b) Write a C++ Program to print the following

1
22
333
4444
55555

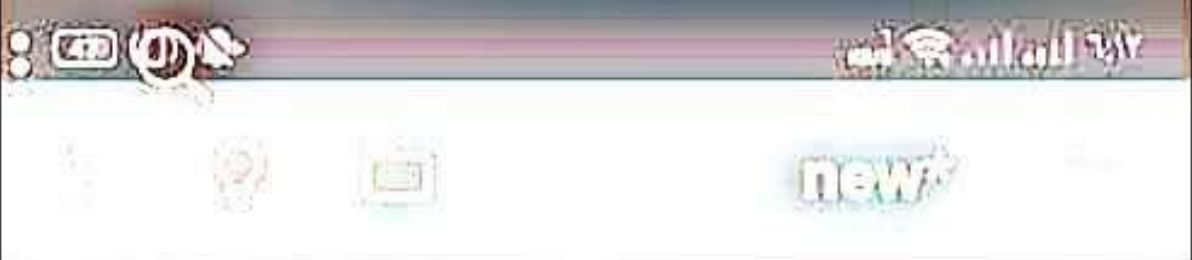
```
for (i=1; i <= 5; i++)
{
    cout << " ";
    for (j=1; j <= i; j++)
    {
        cout << j;
        cout << " ";
    }
    cout << "\n";
}
```

Q2) Use Switch Statement to write a C++ program to calculate Y from

$$\begin{cases} (3x-7)/f(x=-5) \\ (5x^2)/f(x=2 \text{ or } x=5) \\ (x-4x^2)/f(x=-4 \text{ or } x=4) \end{cases}$$

Good Luck

Prof. Dr. Abdelmgid



```
1  #include <iostream>
2  using namespace std;
3  int main()
4  {
5      string a[10], temp;
6      for (int i = 0; i < 10; i++)
7      {
8
9          cin >> a[i];
10     }
11     for (int i = 1; i < 9; i++)
12     for (int j = i + 1; j < 10; j++)
13     {
14         if (a[i] > a[j])
15         {
16             temp = a[i];
17             a[i] = a[j];
18             a[j] = temp;
19         }
20     }
21
22     for (int i = 0; i < 10; i++)
23         cout << a[i] << endl;
24     system("pause");
25 }
```

```
1  #include <iostream>
2  using namespace std;
3  int main()
4  {
5  int arr[5][5];
6  int sumr=0,sumc=0;
7
8  for( int i=0;i<5;i++)
9  {
10 for(int j=0;j<5;j++)
11 {
12 cout<<"Enter The elemnt no. "<<i+1<<j+1<<": ";
13 cin>>arr[i][j];
14 }
15 }
16
17
18 for(int i=0;i<5;i++)
19 {
20 sumr+=arr[3][i];
21 }
22 cout<<"The sum of 3rd row ="<<sumr<<endl ;
23 for(int i=0;i<5;i++)
24 {
25 sumc+=arr[i][4];
26 }
27 cout<<"The sum of 4th coloumn ="<<sumc<<endl ;
28     system("pause");
29 return 0;
30 }
```

Answer about the following questions:

- [Q1] a) Write a C++ program which reads unknown number of integers and counts the number of odd numbers and the count of even numbers. Assume the input integers are all positive. Use any negative number as a sentinel.
b) Show the output for the following program part:

```
i)
int val;
for (val=-5; val<=5; val++)
{
    switch (val)
    {
        case 0:
            cout<<("EgypT");
            break;
            if (val > 0)
                cout<<("T");
            else if (val < 0)
                cout<< ("E");
    }
    cout<<"\n";
}
```

```
ii)
int i = 0;
i++;
cout<<(i++)<<endl;
cout<<(i--)<<endl;
cout<<(i)<<endl;
```

- [Q2] a) Use Switch Statement to write a C++ program to calculate Y from :

$$Y = \begin{cases} (3x-7)/f(x=-5) \\ (5x^3)/f(x=2) \text{ or } (x=5) \\ (x-4x^3)/f(x=-4) \text{ or } (x=4) \end{cases}$$

- b) Which of the following do - while statements is equivalent to :

x=6
while (x < 9)

```
{
    y = x + 7;
    x ++;
}
```

a) x=6;
x ++;
do
{
 y = x + 7;
 x ++;
} while (x < 9);

b) x=6;
do
{
 y = x + 7;
 x ++;
} while (x < 9);

c) x=6;
do
{
 y = x + 7;
 x ++;
} while (x <= 9);

d) none of the above


```

iii-   int x, y;
        x = 5;
        y = 1;
        while (x > 0)
        {
            x = x - 1;
            y = y * x;
            cout << y << endl;
        }

```

4

12

24

24

```

v.      int k;
        double j;
        k = 2;
        j = 2.0;
        if (k == j)
            cout << "Okay.";
        else
            cout << "Not okay.";

```

okay

Q3] a- Write a program to calculate area and circumference of a triangle. Where

$$Area = \sqrt{s(s-a)(s-b)(s-c)}, \quad s = \frac{a+b+c}{2}$$

$$circumference = 2s = a+b+c.$$

[6 points]

b) Find the error(s) in each of the following: [6 points]

For (x = 100; x >= 1, x++)
 ut << x << endl;

;

;

) The following code should print whether integer value is odd even:

```

if ( value % 2 ) {
    se 0;
    it << "Even integer" << endl;
    se 1;
    it << "Odd integer" << endl;
}

```

Break;

break;

The following code should print the odd integers from 19 to 1:

```

( x = 19; x >= 1; x += 2 )
t << x << endl;
x -= 2

```

Default:

Default: from 19 to 1:

Following code should print the even integers from 2 to

```

r = 2;

<< counter << endl;
counter += 2;
while ( counter <= 100 );

```

2
4
6
...

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كلمات يطبع 100

[Q4] a) Choose the correct answer for each code segment: [6 points]

i. `s=1;`
`while(s<4)`
`++s;`
`cout<<s;`

- (a) 1
- (b) 4
- (c) 1234
- (d) 234

ii. `for (t=0;t<3;++t)`
`cout<<t;`

- (a) 0
- (b) 01
- (c) 012
- (d) 0123

b) State whether each of the following is true or false [6 points]

- i. a switch statement must have at least three case labels. *False*
- ii. The following two fragments of code work exactly the same way: *True*

```

switch (x > y)
{
case true:
cout << "X"; break;
case false:
cout << "Y"; break;
}

```

```

if (x > y)
cout << "X";
else
cout << "Y";

```

[Q5]a- Write a C++ program to calculate the sum of 3rd r elements and the sum of 4th column elements in a two dimension array[5][5] [6 points]

b- Write a function to calculate the factorial of a entrance number, and use this function in your program calculate the P value from the relationship:

$$p = \frac{(r+h)!}{(r-h)!}, \text{ where } r, h \text{ are positive numbers, and } r > h. \text{ [6 points]}$$

Good Luck

Prof. Dr. Abdelmgid Am

(Global Scope)

```
#include <iostream>
using namespace std;
float fact1(int n)
{
    int fact=1;
    do
    {
        fact*=n;
        n--;
    }while(n>0);
    return fact;
}

void main()
{
    float r,h,a,b,p;
    cin>>r>>h;
    a=r+h;
    b=r-h;
    p=(fact1(a))/(fact1(b));
    cout<<p<<endl;
    system("pause");
}
```

```

iii-   int x, y;
        x = 5;
        y = 1;
        while (x > 0)
        {
            x = x - 1;
            y = y * x;
            cout << y << endl;
        }

```

4
12
24
24

```

v.      int k;
        double j;
        k = 2;
        j = 2.0;
        if (k == j)
            cout << "Okay.";
        else
            cout << "Not okay.";

```

okay

Q3] a- Write a program to calculate area and circumference of a triangle. Where

$$Area = \sqrt{s(s-a)(s-b)(s-c)}, \quad s = \frac{a+b+c}{2}$$

$$circumference = 2s = a+b+c.$$

[6 points]

b) Find the error(s) in each of the following: [6 points]

For (x = 100; x >= 1, x++)
ut << x << endl;

) The following code should print whether integer value is odd even:

```

if ( value % 2 ) {
    se 0;
    it << "Even integer" << endl; Break;
    se 1;
    it << "Odd integer" << endl; break;
}

```

The following code should print the odd integers from 19 to 1:
{ x = 19; x >= 1; x += 2 }
t << x << endl;

Default:

x -= 2



Answer about the following questions:

Q1] a) Write a C++ program which reads unknown number of integers and counts the number of odd numbers and the count of even numbers. Assume the input integers are all positive. Use any negative number as a sentinel! [6 points]

b) Show the output for the following program part: [6 points]

i)

```
int val;
for (val=-3; val<=3; val++)
{
    switch (val)
    {
        case 0:
            cout<<("MINIA");
            break;
        if (val > 0)
            cout<<("A");
        else if (val < 0)
            cout<<("M");
    }
    cout<<("\n");
}
```

M M M MINIA AAA

ii)

```
int i = 2;
i++;
cout<<(i++)<<endl; 3
cout<<(i--)<<endl; 4
cout<<(i)<<endl; 3
```

[Q2] What is the output of the following code segments: [12 points]

i.

```
int i = 0;
bool t = true;
bool f = false, b;
b = (t && ((i++) == 0));
b = (f && ((i+=2) > 0));
cout<<i<<endl;
```

1

ii. cout<<"abc\ndef"<<endl;

abc
def

abc
def

abc
def

113

```
1  #include <iostream>
2  using namespace std;
3  int main()
4  {
5      int arr[5][5];
6      int sumr=0,sumc=0;
7
8      for( int i=0;i<5;i++)|
9      {
10         for(int j=0;j<5;j++)
11         {
12             cout<<"Enter The elemnt no. "<<i+1<<j+1<<" : ";
13             cin>>arr[i][j];
14         }
15     }
16
17
18     for(int i=0;i<5;i++)
19     {
20         sumr+=arr[2][i];
21     }
22     cout<<"The sum of 3rd row ="<<sumr<<endl ;
23     for(int i=0;i<5;i++)
24     {
25         sumc+=arr[i][3];
26     }
27     cout<<"The sum of 4th coloumn ="<<sumc<<endl ;
28     system("pause");
29     return 0;
30 }
31
```


[III] a) Write a function to calculate the factorial of any entrance number, and use this function in your program to calculate the P value from the relationship: (7 marks)

$$p = \frac{(r+h)!}{(r-h)!}, \text{ where } r, h \text{ are positive numbers, and } r > h.$$

b) Write a C++ program to reorder a group of names alphabetically. (8 marks)

[IV] a) By using switch statement, write a C++ program to find the value y from the relation: (7 marks)

$$y = \begin{cases} (3x-7) & \text{if } (x = -5) \\ (5x^2) & \text{if } (x = 2) \text{ or } (x = 5) \\ (x-4x^3) & \text{if } (x = -4) \text{ or } (x = 4) \end{cases}$$

b) Show the exact output produced by the following code: (8 marks)

```
int main()
{ int y = 0;
  for (int x = 1; x <= 20; x++)
  {   if ((x % 7) == 0)
      {   cout<<"X ="<<x<<endl; }
      y++;
      cout<<"Y =" << y<<endl; })
```

Best wishes

Prof. Dr. Abdelnazeem Amin, ah



Faculty of Computers & Information

Computer Science Department

Final Exam of Programming Fundamentals (CS141)

Grade or Level: 1st Level

Semester: 1st Semester

Date: February, 2021

Time: 2 hours

[I] b) Show the exact output produced by the following code: (7 marks)

```
#include<iostream.h>

void main( )
{
    int i = 0;
    bool t = true;
    bool f = false, b;
    b = (t && ((i++) == 0));
    b = (f && ((i+=2) > 0));
    cout<<i; }
```

b) Write a program to reverse a string in C++?

(8 marks)

[II] a) Answer by (True or False) for each of the following expressions:

(7 marks)

- 1) The string length (strlen()) of the following is 6.
char txt[] = { 'C', 's', '\t', '7', '4', '\n', '\0' };
- 2) C++ is case-sensitive.
- 3) The break statement, when executed in a repetition structure, causes immediate exit from the repetition structure.
- 4) In C++, the name of a method (function) is defined capitalized.

b) Write a C++ program to read two-dimensional array elements, calculate the number of positive elements and its sum, the number of negative elements and its sum, and then calculate the number of zero's elements. And show how to save your results within the data file text.txt.

(8 marks)