اسئلة سنوات
c++

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أسئلة سنوات

ميد

2019 فصل اول + ثاني

1-what is the output of the following code?

```
int a = 1;
char a1 = 'a';
string s1 = "";

cout<< a1 + 8 <<" "<< s1 + a1 <<" "<< s1 + 'r'<<" "<<
s1 + (char)(120) <<" "<< s1 + s1 <<endl;
```

a- x 150 a r **b-** 105 a r x **c-** r a x 105 **d-** a r 105 x

---

2-Given the following code, choose the correct answers for each blank that the code changes all the alphabets in string st to lowercase letters.

```
string st;
    int x = 0;
    while (x < st.length()) {
        if (    1    ) {
            st[x] =   2   ;
        }
    }
```

1- a- isalpha(st[x]) && isupper(st[x])
b- toupper(st[x])
c- isalpha(st[x])

2- a- st[x] + 32
b- st[x] - 32
c- toupper(st[x])

3- Given that st is a string that consists of at letters. Choose the correct answer from the available options such that the following program will print the last 3 letters of string st only

```
string st;
int L = st.length();
int x = 0;

while (x < L && x >= 0) {
     if (     1     ) {
          cout << st[x];
     }
     x++;
}
```

a- (x >= L - 3) b- (x >= L) c- (x < 3)

4- Given that the x and m are integer variables with the following values x=0 and m=5. What is the value of x after executing the following code:

```
while (m < 10) {
          m++;
          x = x + 5;
     }
```

a- 30 b- 25 c- 20 d- 15

5- what is the output of the following code?

```
string st1 = "ABCDEJ";
string st2 = "ABCY";
string st3 = "ABC89";
string st4 = "";
if (st2 >= st1) {
     st4 += st2[0];
     if (st3 >= st2) {
          st4 += st1[2];
          if (st1 != st3)
               st4 += st3[3];
     }
}
cout << st4 << endl;
```

answer :

a-None of the other choices

b-AC8

c- AC

d-A

6– what is the output of the following code,

given that: x=2*y/(z+4) , y=50 , z=6;

```
switch (x) {
      case 10:
            cout << "Level1!" << endl;
            break;
      case 15:
            cout << "Level2!" << endl;
            break;
      case 20:
            cout << "Level3!" << endl;
      case 25:
            cout << "Level4!" << endl;
      default:
            cout << "No match!" << endl;
}
```

a– No match! b– Level1! c– Level3! d–Level4! e–Level2!

7– Choose the correct answers for each blank such that following program displays

1 3 5 7 9

```
int w = 1;
while (w < 10) {
      if (      ) {
            cout << w << " ";
      }
      w++;
}
```

a- (w % 2 == 1 || true) b- (w % 2 != 0 && true)

c-(w % 3 == 0) d- (w<10 && true)

8– Given that num is an integer variable with the value 13567. Which of the following formulas will generate 5?

a- num%100/10

b- num%100%10

c- num/1000%10

d- num/100%10

e- num%100/10

9- what is the number of logical errors in the following code that **takes fullName**, **two grades**(**G1**,**G2**) of **25** students. and **print** the **fullName** and the **average** (of G1 and G2) for all students?

```
double G1, G2;
double average = 0;

string fullName;// FirstName LastName
double numOfStudents = 0;

while(numOfStudents<25){
     cin >> fullName;
     cin >> G1;
     cin >> G2;

     average = G1 + G2 / 2;

     cout << fullName << endl;
     cout << "The average is: " << average;

     numOfStudents++;
}
```

a- Four b- Five c- Two d- one e- Three

10- Given that y and z are variables of type double. What is the result of the following expression given that y = 1.5 and z = 2.5?

```
cout << ceil(2 * y + exp(y / z));
```

a- 5.5 b- 5 c- 4.82 d-2.49

11- What is the output of the following code?

```
string St1 = " Let's Do it Rigth, Good Luck1!8";
bool b1 = isalpha(St1[18]);
bool b2 = isdigit(St1[31]);
bool b3 = isalnum(St1[8]);
bool b4 = isalpha(St1[9]);
if (b1 == b2) {
     cout << "Stage#1\n";
     if (b1 == b3) {
          cout << "Stage#2\n";
          if (b1 == b4)
               cout << "Stage#3\n";
     }
}
```

a- Stage#1 Stage#2 b- Stage#1 Stage#3 c-Stage#2 d-None of this

---

12- Choose the correct answer such that the code implements the function: $cos^4(2x) + \sin(2y)$?

```
int x = 10, y = 20;
cout << [redacted];
```

a-pow(cos(2*x * PI/180),4) + sin(2*y * PI/180)

b-pow(cos(2*x) * PI/180,4) + sin(2*y * PI/180)

c-pow(cos(2*x),4) + sin(2*y)

d-pow(cos(2*x * 180/PI),4) + sin(2*y * 180/PI)

e-pow(cos(2*x) * 180/PI,4) + sin(2*y * 180/PI)

13- The following code welcomes the students to the Ethics101 course, that has the course number 0703101. It accepts the full name of 5 students (firstName+lastName) and prints them on the screen. How many logical and syntax errors are there in this code?

```
#include<iostream>
#include<string>
using namespace std;
int main()
{
     int numofstudents = 5;
     string studentFullName;
     cout << setw(30) << "Welcoem to Ethics 101, this
course has number " << 0x0703101 << endl;
     while (nofstudents != 0)
     {
          cin(getline, studentFullName);
          cout << studentFullName << endl;
          --numofstudents;
     }
     return 0;

}
```

a- 2 syntax errors + 2 logical errors

b- non of these choices

c- 1 syntax error + 2 logical errors

d- 2 syntax errors + 1 logical errors

e- 3 syntax errors + 1 logical errors

14- what is the output of the following code ?

```
string st = "";
char o = 'o';
char e = 'e';
int count = 2;
while (count <= 10) {
    if (count % 2 == 0)
        st += e;
    else
        st += o;
    count++;
}
cout << st << endl;
```

a- oeoeoeoeo b- oeoeoeoeoe c- eoeoeoeoe d-eoeoeoeoeo

15- how many bytes in memory does the declaration of these variable take ?

```
double c1, c2, c3, c4, c5;
int x, y, z, a, b, c, d;
```

a- 24 b- 17 c- 30 d- 38 e- 68

16- choose the correct answer from the multiple choices in the blank below such that the code prints the number 1:

```
cout << [          ]
```

a- (char)(49) b- (string)(0x49) c- (string)(1)

d- (char)(0x49) e- (string)(49) f- (char)(1)

17-choose the correct answers from the multiple choices for each blank such that the longest output of the following code will be 'AAAA'

```
int v;

cin >> v;

switch (v)
{
      case 1: cout << "A";
      case 5: cout << "A";
                    1
      case 4: cout << "A";
      case 3: cout << "A";
      case 6: cout << "AA";
                    2
      default:cout << "A";
}
```

a – leave empty , break

b – leave empty , leave empty

c – break , leave empty

d – break , break

18- choose the correct answer from the multiple choices in the blank below such that the code generates random numbers between -8 and 76:

```
srand(time(0));
int myRandom = [          ]
```

a) -8 + rand() % 77 b) -8 + rand() % 76

c) -8 + rand() % 86 d) -8 + rand() % 85

f) none of these g) -8 + rand(77)

19) what does this code do ?

```
#include<iostream>
#include<string>
#include<fstream>
using namespace std;
int main()
{
	ifstream mystream1("file1.txt");
	ofstream mystream2("file2.txt");
	string sentence;
	string newSentence = "";
	while (!mystream1.eof()) {
		getline(mystream1, sentence,(char)tolower('S'));
		newSentence += sentence;
	}
	mystream2 << newSentence;


}
```

a- Read all sentences from the file1. Remove the letter 's' from the sentences.

Write the new sentences into file2.

b- Read all sentences from the file1. Remove the letter 'S' from the sentences.

Write the new sentences into file2.

c- Read all sentences from the file1. convert the letter 'S' to 's' from the sentences.

Write the new sentences into file2.

d- Read all sentences from the file1. Remove the letter 's' and 'S' from the sentences.

Write the new sentences into file2.

1	b	11	d
2	1) a , 2) a	12	a
3	a	13	e
4	b	14	c
5	d	15	e
6	b	16	a
7	b	17	d
8	d	18	d
9	c	19	a
10	b		

اسئلة سنوات ميد

2020 فصل اول + ثاني

1-what is the value of variable Z ? x = 2.4 , y = -3.9

$$Z = 4\lceil x \rceil - 5\lfloor y \rfloor + min(x, y) + max(x, y) - abs(-2.9)$$

Note:

$\lceil N \rceil$: N *is rounded up to its nearest integer.*

$\lfloor N \rfloor$: N *is rounded down to nearest integer.*

a) -25.3 b) -24.4 c)27.6 d)28.4

e)-28.4 f)-27.6 g)24.4 h)25.3

2- this code asks the user to insert a number between 1 and 4 (1,4 are included And print out its square value. A wrong entry causes this statement to be printed "Wrong entry". Fill the missing line with the correct instruction.

```
// prompt the user to enter an integer
int number;
cout<<"Enter an integer:";
cin>>number;
```

```
        cout<<number<<"Square value = "<<number*number<<endl;
else
        cout<<"Wrong Entry"<<endl;
```

a) if(number >=1 && number < 5) b) if(number > 1 && number < 5)

c) if(number >= 1 && number < 4) d) if(number>=1 && number<=5)

3- Which of the following codes will lead to i = 4, j = 4 ?

a)	b)	c)	d)
int i = 3;	int i = 4;	int i = 4;	int i = 4;
cout<< --i;	cout<<++i;	cout<< --i;	cout<< ++i;
int j = ++i;	int j = --i;	int j = i++;	int j = i--;

4- Given the following code, select from the available options for each blan such that the code prints "Skills" on the screen

```
string w = "Welcome to the Computer Skills";
for( 1 ; 2 ; i++)
{
    cout << w[ i ];
}
```

1- a) int i = 2

b) int i = 0

c) int i = 1

d) int i = w.length() – 7

e) int i = w.length( ) – 8

f) int i = w.length( ) – 5

g) int i = w.length( ) – 6

2- a) i <= w.length() -3

b) i <= 4

c) i <= 6

d) i <= 5

e) i <= w.legnth( )

f) i <= w.length( ) – 1

g) i <= w.length( ) – 2

5- Choose from the blanks below the correct choices such that the code outputs the following answers:

- if n = 1, its outputs 0
- if n = 4, its outputs 64
- if n = 2, its outputs 8
- if n = 3, its outputs 27

```
switch( n ) {
        case 1: m = 0;          [ 1 ]
        case 4: m = 0;          [ 2 ]
        case 2: m = n * n ;     [ 3 ]
        case 3: m = n * n * n;  [ 4 ]
        default: m  = -1 ;
}
```

1) a) break
   b) leave empty

2) a) break
   b) leave empty

3) a) break
   b) leave empty

4) a) break
   b) leave empty

6) What is the content of variables x and y after the execution of the following code?

```
int x = 22;
int y = 35;
(x < y) ? x++ : --y;
if( ++y % 2 == 0)
    y++;
else
    x--;
```

a) 22 35
b) 31 35
c) 22 37
d) 22 33
e) 21 36
f) 23 37

---

7) what is the content of s after the execution of the code?

```
int x = 0.9, y = 35;
char x1 = 'A', x2 = 'B', x3 = 'C';
string s;
y += x2;
x3 +=40;
s += x2;
s += x3;
```

a) CB **c) BK** **e) CJ**

b) BC **d) KB**

8) The following code is supposed to prompt each student in a class of 30 students to enter his full name (first last) and two grades. The program calculates the average of these two grades for each student and prints out his average and his full name. However, there are errors in the code. Find the number and type of errors in code?

```
string fullName; //firstname lastname

double grade1, grade2;
double average;

for (int x = 0, x <= 30; x++) {
    cin >> FullName;
    cin >> grade1, grade2;

    average = Grade1 + grade2 / 2;
    cout << fullName << " " << average;
}
```

a) Two syntax and two logical errors

b) Four syntax and two logical errors

c) one syntax and two logical errors

d) Two syntax and one logical errors

e) Four syntax and three logical errors

9) Choose the correct statement to complete the code below.
Assume the following :

- The code receives an input of type double from the user and stores in a variable called "**distance**"

- The input value represents a certain distance in "**Km**".

- The purpose of the code is to display the distance in "**miles**". The number of digits displayed in the fraction side must be always **8.**

- 1 mile = 1.61 Km

```
if (distance < 0.0)
      cout << "Negative Distance" << endl;
else
```

1

a) cout<<fixed(8) <<setprecision( )<<distance/1.61;

b) cout<<setprecision(8)<<distance/1.61;

c) cout<<fixed<<setprecision(8)<<distance/1.61;

d) cout<<fixed<<distance/1.61;

e) cout<<setprecision(8)<<showpoint<<distance/1.61;

f) cout<<showpoint<<distance/1.61;

10) What is the equivalent C++ expression to express the following function ?

$$ln\sqrt{log(20) + e^{10}}$$

a) log (sqrt (exp (- (10 + log10(20)))))

b) log10 (sqrt (exp(10) + log(20)))

c) log10 (sqrt (exp(-10 + log (20)))

d) log (sqrt(exp(10) + log10(20)))

e) log10(sqrt (exp (-(10+log(20)))))

f) log (sqrt (exp (-10 + log10(20))))

---

11) which of the following inputs will lead to this output sequence :

011001

```
string s1, s2;
cin >> s1 >> s2;
cout << (s1 == s2) << (s1 != s2) << (s1 <= s2)
     << (s1 >= s2) << (s1 > s2) << (s1 < s2);
```

a) s1 = "ade" , s2 = "dEx"

b) s1 = "ade" , s2 = "ade"

c) s1 = "dde" , s2 = "dEx"

d) s1 = "ade" , s2 = "DEx"

12) Given the code below, select from the available options for each blank such that the code finds the smallest digit in the string **q** and stores it in variable **min**.

Note: The ACII code for the '}' character is larger than the ASCII code for 'z' , 'Z' and '9' character

Note: The ASCII code for the ' ' character is smaller than the ASCII code 'z' , 'Z' and '9' characters

```
char min = '}';
char max = ' ';

for (int i = 0; i < 21; i++)
{
    if (    1    &&    2    )
        min = q[i];
}
```

1: a) q[i] > max b) q[i] < min c) q[i] > min d) q[i] < max

2: a) isupper(q[i]) b) islower(q[i]) c) isdigit(q[i]) d) true

13- what does the following code sinppet do? s1,s2 are strings

```
int j = 0;
getline(cin, s1);
s2 = s1;

for (int i = s1.length() - 1; i >= 0; i--)
{
     s2[j] = tolower(s1[i]);
     --j;
}
```

a) copy the content of s1 to s2 after converting to uppercase

b) copy the content of s1 to s2 in reverse order after converting to lowercase;

c) copy the content of s1 to s2

d) copy the content of s1 to s2 after converting to lowercase

e) copy the content of s1 to s2 in reverse order after converting to uppercase

---

14) Which of the following is a correct identifier in C++?

a) int++

b) int

c) integer8

d) 7integer

15) The following code prompts the user to input the humidity value and prints out if it is comfortable or not according to the table given below. Using this table till in blanks to complete the code.

Humidity range	comfort
[0 – 30]	Uncomfortably dry
(30 – 60]	Comfortably
(60 – 100]	Uncomfortably wet

```
double humidity;
cin >> humidity;

if (      1      )
     cout << "Uncomfortably dry\n";

else if (      2      )
     cout << "Comfortable\n";

else if (      3      )
     cout << "Uncofortable wet\n";
```

1: a) humidity >= 0 && humidity < 30 b) humidity >= 0 || humidity < 30

c) humidity >= 0 && humidity <= 30 d) humidity > 0 && humidity <= 30

2: a) humidity >= 30 && humidity < 60 b) humidity >= 30 || humidity < 60

c) humidity >= 30 && humidity <= 60 d) humidity > 30 && humidity <= 60

3: a) humidity >= 60 && humidity < 100 b) humidity >= 60 || humidity < 100

c) humidity >= 60 && humidity <= 100 d) humidity > 60 && humidity <= 100

16) Choose the correct statement to complete the code below.

First, the code generates a random month number (01 to 12) and stores it using two integers "k1" and "k0".

Next, the code requests the user to enter his birthday as an integer in the format "**yyyymmdd**" and stores it in an integer variable 'N'.

For example, if user birthday is 9/7/2020, then he should enter 20200709 which is stored in 'N'.

Lastly, the code compare the random month number with the month from the user birthday to display "win" if they are equal.

Otherwise, the code display "lose".

```
int k1 = rand() % 2;
int k0;

if (k1 == 0)
    k0 = 1 + rand() % 9;
else
    k0 = rand() % 3;

cout << "Enter your birthday" << endl;
cin >> N;

if (                              )
    cout << "Win";
else
    cout << "Lose";
```

a) ((N/100)%10==k1)&&((N/10)%10==k0))

b) ((N/100000)%10==k1)&&((N/10000)%10==k0))

c) ((N/10000)%10==k1)&&((N/1000)%10==k0)

d) ((N/1000)%10==k1)&&((N/100)%10==k0)

17) Given the following if-else, fill in blanks to complete the equivalent switch statement:

```
int x, y;
cout << "Enter two intergers:\n";
cin >> x >> y;

char op;
cout << "Enter + or a or A for addition.\n";
cout << "Enter - or s or S for subtraction. \n";
cout << "1nter * or m or M for multiplication.\n ";
cin >> op;

if (op == '+' || op == 'A' || op == 'a')
     cout << x + y;
else if (op == '-' || op == 'S' || op == 's')
     cout << x - y;
else if (op == '*' || op == 'M' || op == 'm')
     cout << x * y;
else
     cout << "undefined operation\n";


switch (op) {
     case '+': [ 1 ]
     case 'A':
     case 'a': [ 2 ]

     case '-':
     case 'S':
     case 's': cout<<x-y<<endl; break;

     case '*':
     case 'M':
     case 'm': cout<<x*y<<endl; break;

     default: [ 3 ]
}
```

1) a) cout<<x+y<<endl b) break c) leave empty

2) a) cout<<x+y<<endl b) cout<<x+y<<endl break; c)empty

3) a) cout<<"undefined op\n"; b)leave empty c) break;

---

18) what is the range of m after applying this code?

```
srand(time(0));

int i = 20 + rand() % 25;
int j = i + rand() % 10;
int k = 5 + rand() % 11;
int m = j - k;
```

a) 5 to 48 b) 15 to 38 c) 5 to 38 d) 15 to 48

---

19) what is the output of the following C++ code?

```
int x = 1;
short int i = 2;
float f = 3;
if (sizeof((x == 2) ? f : i) == sizeof(float))
    cout << "float\n";
else if (sizeof((x == 2) ? f : i) == sizeof(short int))
    cout << "short int\n";
else
    cout << "No match" << endl;
```

a) int b) short int c) double d) float

20) Choose the correct statements to complete the code below. The code is responsible for receiving students names and grades for 19 subjects. For each student, the program receives subjects. After that, the program display the student average grade as shown in the example below.

The program ends when the first character of the student name is **'–'** without computing the average for this student.

Assume that variables "sum" and "grade" are defined as int, and variable "grade" is used to read student grades. Also assume that variable "x" is defined as a string and is used to read student name.

- Example:

if the name of the first student is "John" and his grades for the 19 subjects are :

70, 70, 72, 72, 74, 74, 76, 76, 78, 79, 80, 82, 82, 84, 84, 86, 86, 88, 88

Average = 79

Then the program continues to receive the name and grades for the second student and so on until the entered student name starts ' – '

```
cout << "Enter name then press Enter" << endl;
cin >> x;
```

1

```
    sum = 0;
```

2

```
        cout << "Enter grade then press Enter" << endl;
        cin >> grade;
        sum += grade;
    }
    cout << "Average = " << sum / 19.0 << endl;
    cout << "Enter name then press Enter" << endl;
    cin >> x;
}
```

Answers for 1 and 2 :

a) while(x[0] == ' – ')

b) for(int i=0; i <= 21 ; i++)

c) for(int i= 1; i < 20 ; i++)

d) for(int i=0; i < 20; i++)

e) while (x > 0)

f) for(int i = 0; i <= 20;i++)

g) while(x[0] != ' – ')

h) while(x >= 0)

i) for(int i=0 ; i < 19 ; i++)

j) while(x[x.size()-1] != ' – ')

k) while((x != 0) && (x < 0))

l) while(x != -1)

m) while(x[x.size()-1] == ' – ')

1	C	11	A
2	A	12	1-b 2-c
3	B	13	B
4	1-g 2-f	14	C
5	1-a 2-b 3-b 4-a	15	1-c 2-d 3-d
6	F	16	D
7	C	17	1-c 2-b 3-a
8	E	18	A
9	C	19	D
10	D	20	1-g 2-i

اسئلة سنوات

ميد

2020 صيفي جديد

1) complete the code below by choosing the correct answers from the multiple choices such that the output has similar formating to the output shown below.

```
int x = 0;
do {

      if (x == 0);
                  1
      else if (x == 1);
                  2
      else if (x == 2);
                  3

      cout << setw(15) << rand() / 1024.0
            << setw(15) << rand() / 1024.0
            << setw(15) << rand() / 1024.0 << endl;
      x++;

} while (x < 3);
```

```
        25.75293        6.05664          12.5791
13.5048828      24.8583984      25.5781250
         23.5615         19.7334          9.2109
```

1) a) `cout<<setprecision(5)<<right;`

b) `cout<<fixed<<setprecision(5)<<left;`

c) `cout<<fixed<<setprecision(5)<<right;`

d) `cout<< setprecision(5)<<left;`

2) a) `cout<<left<<showpoint<<setprecision(9);`

b) `cout<<right<<showpoint<<setprecision(9);`

c) `cout<<right<<setprecision(9);`

d) `cout<<left<<setprecision(9);`

3) a) `cout<<setprecision(4)<<right;`

b) `cout<<fixed<<setprecision(4)<<left;`

c) `cout<<fixed<<setprecision(4)<<right;`

d) `cout<<setprecision(4 )<<left;`

2) choose the correct choice from the blanks below such that code|| is equivalent to code|:

//code|:

```
switch (n) {
 case 2:
 case 4:
 case 8:
 case 10: cout << n * 100 << endl; break;
 case 3:
 case 6:
 case 9: cout << n * 10 << endl; break;
 case 1:
 case 5:
 case 7: cout << n * 1000 << endl; break;
 defualt: cout << "out of range" << endl;
}
```

// code||:

```
if ([      1      ]) {

      if ([   2    ])
            cout << n * 10;

      else if ([   3    ])
            cout << n * 100;

      else
            cout << n * 1000;
}
else
      cout << "out of the range" << endl;
```

1) a) ((n<10) && (n>0)) b) ((n<=10)&&(n>=0))

c) ((n<10)||(n>0)) d) ((n<=10)&&(n>0))

2 & 3) a) (n%2==0) b) (n%2!=0) c) (n%3==0) d)(n%3!=0)

3) which one of the following input values gives us a certain true for this statement:

```
if( (x>5 || y<z) && (y != 0 || x+z%3==0) )
```

a) int x = 4, y = 2+rand()%5, z = 5;

b) int x = 7, y = rand()%5, z = 5;

c) int x = 4, y = 2+rand()%4, z = 5;

d) int x = 7, y = rand()%2, z = 4;

4)select from the available options for each blank such that the following code prints the hundreds digit then the thousands digit:

```
int number;
cin>>number;
```

1

```
cout<<number%10;
```

2

```
cout<<number%10;
```

1) a) number = number / 100

b) number = number % 100

c) number = number /10

d) number = number /1000

2) a) number = number / 1000

b) number = number % 10

c) number = number/10

d) number = number % 1000

5) suppose we want to store the value 1.0 into a double variable d. which of the following would not work ?

a) all of them will work

b) d = 1;

c) d = 3.0 / 2 - 0.5 ;

d) d = 3/2;

e) d = 2 – 0.5 – 0.5 ;

---

6) what is the content of the variable x and y after executing the following code?

```
double x = 14, y = 2.8;
(y < x) ? x -= 10 : y *= 2;

if (y > x)
     x += 20;
else
     y += 3.9;
```

a) x = 16, y = 56

b) x = 4 , y = 6.7

c) x = 6 , y = 6.7

d) x = 4 , y = 10.92

7) fill in the blank to get a random value between 16 and 24 :

```
int i = 20 + rand() % 5;
// blank
```

a) int j = i + rand() % 8;

b) int j = i - rand() % 8;

c) int j = i - rand() % 5;

d) int j = i + rand() % 5;

---

8) select from the available option for each blank such that the value stored in variable number is between 3 and 25 inclusive:

int number = [1] + rand () % [2]

1) a) 1 b) 3 c) 25 d) 2

2) a) 25 b) 24 c) 3 d) 23

---

9) if double x = -2.5 , y = -3.1

Which of sequence of instructions gives an output (-2):

a)
```
x=ceil(x)
y=floor(y)
cout<<max(x,y)
```

b)
```
y=floor(y)
x=abs(x)
cout<<max(x,y);
```

c)
```
y=ceil(y);
x=floor(x);
cout<<min(x,y);
```

d)
```
x=floor(x)
y=abs(y)
cout<<max(x,y)
```

e)
```
x=ceil(x)
y=floor(y)
cout<<min(x,y)
```

10) the following code prompts the user to input an angle in degrees, prints out its cosine with 3 digits after the decimal point in a field of width 6. Fill in the blanks to complete the code.

```
const double PI = 3.14159265359;
double angle;
cin>>angle;
cout<<
```

a) setw(6)<<fixed<<setprecision(3)<<cos(angle*(PI/180));

b) setw(6)<<fixed<<setprecision(3)<<cos(angle);

c) setw(6)<<fixed<<setprecision(3)<<cos(angle)*(PI/180);

d) setw(6)<<fixed<<setprecision(3)<<cos(angle*(180/PI));

---

11) which of the following statement calculate the average of a,b,c,d?

a) a – b + 0 * c / 4 + 2 * b + c + d * 1 / 4

b) (a – b + 0 * c / 4 + 2 * b + c + d) * 1 / 4

c) a – b + (0 * c / 4) + 2 * b + c + d * (1 / 4)

d) (a – b + (0 * c / 4) + 2 * b + c + d) / 4

12) what is the content of the variable mystring after executing the following code successfully ?

```
string str1="This is my first program";
string str2="I am a programmer";
string str3="I am an engineer";
string mystring = "";
if (str1 > str2)
     mystring += str1[8];
if (str2 <= str3)
     mystring += str3[3];
if (str1 != str3)
     mystring += str2[5];
```

a) Imm b) m m c) mm d) mma e) empty

13) The following code prompt the user to enter 10 character and concatenate them into one string. Fill in the blanks to complete the code.

```
char ch;
    1
do{
     cin>>ch;
     mystring+=ch;
     2
}while(i<=10);
```

1) a) int i = 0 b) int i = 1 c) int i =10 d) int i = -1

2) a) i++ b) i--

14) Given the following code. Fill in the blanks to complete the code that makes the content of str1 "DADADADADA" after code.

```
string str1 = "";
char ch1 = 'D' , ch2 = 'A';
int count = 1;
while ( [ 1 ] )
{
        if(count%2==0)
            [ 2 ]
        else
            [ 3 ]
        count++
}
```

1) a) count < 10 b) count > 10 c) count <= 10 d) count <= 9

2) a) str1 = ch2 b) str1 = ch1 c) str1+=ch1 d) str1+=ch2

3) a) str1 = ch2 b) str1 = ch1 c) str1+=ch1 d) str1+=ch2

15) Which of the following codes will lead to k = 9:

a)
```
int i = 4;
int j = 5;
cout<< --i;
int k = j++;
k -= i ;
```

b)
```
int i = 4;
int j = 5;
cout<< --i;
int k = j++;
k += i ;
```

c)
```
int i = 5;
int j = 4;
cout<< --i;
int k = ++j;
k += i ;
```

d)
```
int i = 5;
int j = 4;
cout<< --i;
int k = ++j;
k -= i ;
```

---

16) Select the instructions that give 101 as an output

```
char X='v', y='S', z='7';
```

cout<< [1] << [2] << [3] ;

1) a) islower(X) b) isupper('x') c) toupper(X) d) tolower(X)

2) a) islower('y') b) isupper('y') c) toupper(y) d) tolower(y)

3) a) islower(z) b) isupper(z) c) todigit(z) d) isdigit(z)

17) The following code prompts the user to enter Vitamin D3 test result and prints out the diagnosis according to the given table.

If the D3 level is less than '0' it displays an invalid value.

D3 level	Diagnosis
0 ≤ D3 < 30	Deficient
30 ≤ D3 < 39	Insufficient
39 ≤ D3 < 80	Sufficient
80 ≤ D3	Toxic

```
if (        1        )
    cout << "Deficien.\n";
else if (       2         )
    cout << "Insufficient.\n";
else if (D3>=39 && D3<39)
    cout << "Toxic.\n";
else if (       3         )
    cout << "Toxic.\n";
else
    cout << "an invalid value.\n";
```

1) a) D3>0 && D3<=30 b) D3<=0 && D3>30
   b) D3>=0 || D3<=30 d) D3>=0 && D3<30

2) a) D3>=30 && D3<39 b) D3<=30 && D3>39
   b) D3>=30 || D3<=39 d) D3>30 && D3<=39

3) a) D3 < 80 b) D3 > 80
   c) D3 >= 80 d) D3 <= 80

18) What is the value that will be stored in the variable result, given that x = 4.3, y = -8.2?

double result = $4\lceil y \rceil - 5\lfloor x \rfloor + min(x, y) + max(x, y) - |-2.9|$

Note:

$\lceil N \rceil$: N *is rounded up to its nearest integer.*

$\lfloor N \rfloor$: N *is rounded down to nearest integer*

a) -58 **b) 58** **c) -58.8** **d) 59**

---

19) Suppose we have the following switch statement:

```
short n = (m * 9 / 7) ;
switch( ?? ){
    case 0 : cout<< n ;          break;
    case 1: cout<< n*n;          break;
    case 2: cout<< n*n*n;        break;
    case 3: cout<< n*n*n*n;      break;
}
```

Which of the following statements can be used inside the switch condition such that switch remains syntactically correct?
(maybe more thant one correct answer)

a) static_cast<double>(n)

b) static_cast<long long>(n)

c) static_cast<float>(n)

d) n

1	1) c 2) a 3) c	11	D
2	1) d 2) c 3) a	12	D
3	B	13	1)b 2)a
4	1) a 2) c	14	1)c 2)d 3)c
5	A	15	C
6	B	16	1)a 2)b 3)d
7	C	17	1)d 2)a 3)c
8	1)b 2)d	18	C
9	A	19	B & d
10	A	20	–

اسئلة سنوات ميد

1) Given that X = 4512, fill the empty spaces such that we extract the number 50 and save it in variable Y: , or number 17

```
int Y = X [A] 100 [B] – 5;
```

for [A]:

1) % 2) / 3) * 4) + 5) -

for [B]:

1) % 2) / 3) * 4) + 5) -

---

2) What is the output after executing the following code snippet?

```
bool b1 = false;
char ch1 = 'b';
sizeof(b1) == sizeof(ch1) ? cout << ch1 : cout << b1;
```

a) true b) 0 c) 1 d) false d) b e)None of the other

---

3) if p1 and p2 are Boolean identifiers with p1= -8 and p2= 0, then the expression :

```
((p1) || p2 && p2  && p1)
```

will lead to:

a) Logical error b) false c) true d) syntax error

4) Which line1 and line2 combination causes the program to print only the word “Hello” on the console?

```
int x = 6;
line1
    cout << "Welcome" << endl;
else line2
    cout << "Hello" << endl;
```

a) None of the other choices
b) line1: if (x++ == 7) line2: if (x++ == 8)
c) line1: if (x++ == 7) line2: if (x++ == 7)
d) line1: if (x++ == 6) line2: if (++x == 7)
e) line1: if (x++ == 7) line2: if (++x == 7)

---

5) What is the expected range for i based on the following statements?

```
int i = rand( ) % 39  - 16 ;
i -= rand( ) % 17;
```

a) -16 to +28
b) -28 to +16
c) -32 to +28
d) -6 to +13
e) -33 to +27
f) -0 to +28

6) Choose from the multiple choices below the correct answer such that the cout statement displays the following output:

Midterm' Examng

cout << "C++ Programming" << [A] << "Midterm"<< [B] << [c] << " Exam";

for[A]:

1) '\n' 2) '\b' 3) '\r' 4)'\\' 5) ' \' ' 6) ' \" '

for[B]:

1) '\n' 2) '\b' 3) '\r' 4)'\\' 5) ' \' ' 6) ' \" '

for[C]:

1) '\n' 2) '\b' 3) '\r' 4)'\\' 5) ' \' ' 6) ' \" '

---

7) Choose the statement that prints the following numbers separated by a single space.

Note: there is a single space before the first number.

11 6 456

1) cout << setw(3)<<11<<setw(3)<<6<< setw(4)<<456<<endl;
2) cout << setw(3)<<11<<setw(4)<<6<< setw(4)<<456<<endl;
3) cout << setw(3)<<11<<setw(2)<<6<< setw(5)<<456<<endl;
4) cout << setw(4)<<11<<setw(3)<<6<< setw(4)<<456<<endl;
5) None of the other answers
6) cout << setw(3)<<11<<setw(2)<<6<< setw(4)<<456<<endl;

8) Given that number N is a floating-point number with the value 5.956, which of the following statements will display the number as 5.96?

a) cout<<showpoint<<setprecision(2)<<N<<endl.

b) cout<<setprecision(3)<<N<<endl;

c) cout<<setprecision(4)<<N<<endl.

d) None of the other answers

e) cout<<fixed<<setprecision(3)<<N<<endl.

f) cout<<setprecision(2)<<N<<endl.

---

9) In the right triangle , the cosine of angle "a" is given by x/z. Assuming that variables "x" and "z" are declared of type double and library "cmath" is included, which of the following lines can be used to print the value of angle "a" in degrees?

a) cout << acos(x/z) * 3.14159 / 180;

b) None of the other options

c) cout << cos(x/z) * 180 / 3.14159;

d) cout << acos(x/z) * 180 / 3.14159;

e) cout << acos(z/x) * 180 / 3.14159;

10) Which of the following codes gives 35.81 7 as an output?

a)

```
double x = 35.80562;
float y = 7.22;
int z, w;
z = (int) x;
w =  ceil (y);
cout << setprecision(3) << x <<' '<< w;
```

b)

```
double x = 35.80562;
float y = 7.22;
int z, w;
z = (int) x;
w = (int) y;
cout << setprecision(3) << x <<' '<< w;
```

c)

```
double x = 35.80562;
float y = 7.22;
int z, w;
z = (int) x;
w =  ceil (y);
cout << setprecision(4) << x <<' '<< w;
```

d)

```
double x = 35.80562;
float y = 7.22;
int z, w;
z = (int) x;
w = (int) y;
cout << setprecision(4) << x <<' '<< w;
```

11) Given that x and y are double values that represent the x and y coordinates of a point P in the Cartesian system, select the correct answer for each field in the print statement below such that it outputs in the following order

Distance between P and x-axis

Distance between P and y-axis

Distance between P and the origin point

Notice that:

By definition, a point P(x,y) is |x| units away from the y-axis and |y| units away from the x-axis.

The distance between any point P(x,y) and the origin O (0,0) is defined according to Pythagora's Theorem as: $\sqrt{x^2 + y^2}$

```
cout<< [A] << " "<< [B]  <<" "<< [C]  <<endl;
```

for[A]:

1) abs(x) 2) abs(y) 3) x 4) y

for[b]:

1) abs(x) 2) abs(y) 3) x 4) y

for[c]:

1) x+x * y+y 2) sqrt(x + y) 3) sqrt(x*x + y*y) 4) pow(x*x , y*y)

Q12) The following C++ code takes in as input the variable **"Amount"** which is of type double and represents total amount of a purchase order, then computes the updated amount after the discount according to the following rules:

Wrong amount when, Amount <= 0, Discount is 10% when, 0 < Amount < 3000, Discount is 20% when, 3000 <= Amount < 5000, Discount is 30% when, Amount >=5000. Complete the missing spaces in the code:

Complete the missing spaces [A, B, C] in the code:

Code :

```
if (Amount <= 0)
 cout<< "Wrong Amount" << endl;
else
  switch( [A] )
  {
    case 0:
    case 1: [B]
    case 2: Amount *= 0.9; break;
    case 3: Amount *= 0.8; break;
    [C] : Amount *= 0.7;
  }
```

For[a]: 1) Amount/1000 2) Amount % 1000 3) (int)Amount 4)(int)Amount/1000

For[b]:

1) leave empty 2) break; 4)Amount *= 0.9; 4)Amount *= 0.9; break;

For[c]: 1) leave empty 2) default 3) case 4 4) break

Q13) in the following program which reads an angle measurement in degrees, what should be filled in the missing line in order to print the value of the following function f(x)

$$f(x) = cos^3(x)$$

```
double x;
cout << "Enter angle measurement in degrees: "<<endl;
cin >> x;
//missing line
```

a) cout << pow(cos(x) * 180 / 3.14159,3);

b) cout << pow(cos(x),3);

c) cout << pow(cos(x * 180 / 3.14159),3);

d) None of the other options

e) cout << pow(cos(x) * 3.14159 / 180,3);

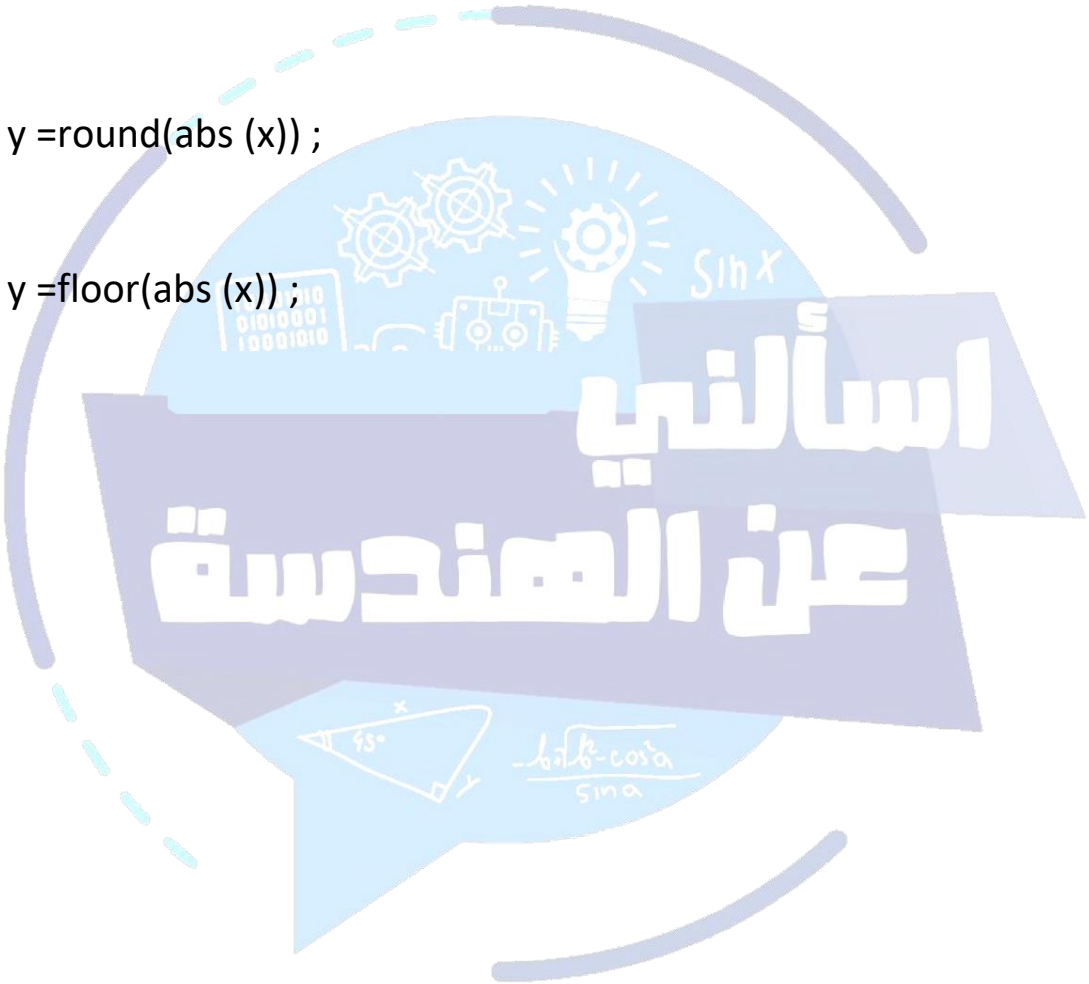
14) Which of the following statement cause y to be 6 when x = -5.4 ? (x and y are double variables)

a. y= abs(floor (x));

b. y = abs(ceil (x));

c. y =round(abs (x)) ;

d. y =floor(abs (x)) ;



Given that A and B are double variables, the following code computes the value of B based on the following equations. Accordingly, answer the questions below regarding errors in this code?

$$B = \begin{cases} A+10, & A <= 0 \\ 3 \div 5, & 0 < A < 50 \\ \sqrt{A^3}, & A >= 50 \end{cases}$$

```
#include <iostream>
#include <cmath>
using namespace std;
int main ( )
{
   double A, B;
   cin >> a;
   if (A =< 0)
      B = A + 10;
   else (A > 0 && A < 50)
      B = (3/5)*A;
   else if (A >= 50)
      B = sqrt(pow(A,3));
   cout << B;
   return;
}
```

How many syntax errors are there in the code?

There is a logical error in the line :