ICPC Assuit Community

Newcomers (*Datatypes & Conditions*)

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Questions

1- What will happen if we divide by zero?

a. Time limit.
b. Memory limit.
c. Runtime error.
d. Stack overflow.

2- What is equal to 100000?

a. 10000000000 - 100000.
b. 10000000000 / 10000.
c. (int)1e5.
d. 100000- 200000.

3- What is the result of dividing 3/2 in C++?

a. 1
b. 1.5
c. 2
d. A run-time error.
e. none of the above

4- what is the difference between x++ and ++x ?

5- how to calculate the max number in (int - long long)

6- what is the size of (short,int, long long ,float ,double ,char ,bool ,string)

7- What is the size of "unsigned int"?

a. 2 bytes
b. 4 bytes
c. 8 bytes
d. 5 byte

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8- What is the size of "signed int"?

a. 2 bytes

b. 4 bytes

c. 8 bytes

d. 5 byte

9- What is The number of bits in char data type?

10- Given two numbers a and b, your task is to print the remainder of division a by b , Note: without using Modulo (%) .

example a=9 b=4 output: 1

11- What is the output ?

1)

```
#include<iostream>
using namespace std;
int main() {
   int x = 100000;
   int y;
   y = x;
   x *= y;
   cout << x;
}
```

a. 100000
b. 10000000000
c. Run time error.
d. Overflow

2)

```
#include<iostream>
using namespace std;
int main() {
    int x = 1000000000;
    int y = x * 2;
    cout << x + y / 2;
}
```

a. 2000000000.
b. 1000000000.
c. Run time error.
d. Overflow

3)

```cpp
#include <iostream>
using namespace std;
int main() {
    int a = 0, b;
    b = (a = 50) + 10;
    cout << a << "$" << b;
    return 0;
}
```

4)

```cpp
#include<iostream>

using namespace std;

int main() {

int x = 10, y = 20;

if (x++ || y++) {

     y += 5;

} else if (x == 10) {

     x -= 5;

}

if (y == 20) {

     y = x;

}

if (x++ && y++) {

     x += 5;

}

cout << x << " " << y << endl;

}
```

5)

```cpp
#include<iostream>

using namespace std;

int main() {

    int x = 3;

    if (4 > x > 2) {

         cout << "Well Done";

    } else {

         cout << "Right choice";

    }

}
```

6)

```cpp
#include <iostream>
using namespace std;
int main() {
    int a = b = c = 0;
    cout << a << "*" << b << "*" << c;
    return 0;
}
```

7)

```cpp
#include <iostream>
int main() {
    if (std::cout << "hello")
         std::cout << " world";
    else
         std::cout << " else part";

    return 0;
}
```

8)

```cpp
#include <iostream>
using namespace std;
int main() {
    char a = 30, b = 40, c = 10;
    char d = (a * b) / c;
    cout << int(d);
    return 0;

}
```

9)

```cpp
#include <iostream>
using namespace std;
int main() {
    int a = 1;
    switch (a) {
    case 1:
        cout << "One";
    case 2:
        cout << "Two";
    case 3:
        cout << "Three";
    default:
        cout << "Default";
    }
    return 0;
}
```

a. One
b. Compilation Error
c. Default
d. OneTwoThreeDefault

10)

```
#include <iostream>
using namespace std;
int main() {
    int a;
    a = 5;
    if (++a * 5 <= 25) {
        cout << "Hello";
    } else {
        cout << "Bye";
    }
}
```

a. Hello
b. Bye
c. Undefined
d. Compilation Error

11)

```
#include <iostream>
using namespace std;
int main() {
    int x = 5;
    if (x++ == 5)
        cout << "Five" << endl;
    else if (++x == 6)
        cout << "Six" << endl;
    return 0;
}
```

a. FiveSix
b. Five
c. Six
d. None of these

12)

```cpp
#include <iostream>
using namespace std;
int main() {
    int a;
    cout << "Size of int is: " << sizeof(a);
}
```

13)

```cpp
#include <iostream>
using namespace std;
int main() {
    char a;
    a = 'R';
    cout << " Size of char is: " << sizeof(a) << endl;
    cout << " Value of a is: " << a;
}
```

14)

```cpp
#include <iostream>
using namespace std;
int main() {
   bool a;
   cout << " Size of bool is: " << sizeof(a) << endl;
   cout << " Value of a is: " << a;
}
```

15)

```cpp
#include <iostream>
using namespace std;
int main() {
    int x = 5,y=5;
    x = y++;
    y = ++x;
    x *= y;
    cout << x << " " << y;
}
```

16)

```cpp
// logical operators
#include <iostream>
using namespace std;
int main() {
    cout << true << endl;
    cout << false << endl;
    cout << (true || false) << endl;
    cout << (true && false) << endl;
    return 0;
}
```

17)

```cpp
// relational operators.
#include <iostream>
using namespace std;
int main() {
   cout << (5 == 10) << endl;
   cout << (10 > 5) << endl;
   cout << ((5 >= 1) && (5 <= 10)) << endl;
   return 0;
}
```

18)

```cpp
#include <iostream>
using namespace std;
int main() {
     char ch = 'a';
     cout << int(ch);  return 0;
}
```

19)

```cpp
#include <iostream>
using namespace std;
int main() {
     char ch = 'A';
     cout << ++ch;
     return 0;
}
```

20)

```cpp
#include <iostream>
using namespace std;
int main() {
	char ch = 'A';
	cout << ch + 32;
	return 0;
}
```

21)

```cpp
#include <iostream>
using namespace std;
int main() {
	char ch = 'N';
	cout << char(ch + 32);
	return 0;
}
```

22)

```cpp
#include <iostream>
using namespace std;
int main() {
    int x = 2;
    if (!x == 0) {
        cout << "Yes";
    } else {
        cout << "No";
    }
    return 0;
}
```

23)

```cpp
#include <iostream>
using namespace std;
int main() {
   int x = 0;
   if (!x != 0 && x == 1 || !x) {
        cout << "Yes";
   } else {
        cout << "No";
   }
   return 0;
}
```

24)

```cpp
#include <iostream>
using namespace std;
int main() {
    int x = 0, y = 1;
    if (++x && --y) {
        cout << x << " " << y;
    } else {
        cout << x++ << " " << --y;
    }
    return 0;
}
```

25)

```cpp
#include <iostream>
using namespace std;
int main() {
    bool ok = 0;
    if (!!(ok) && ok != !ok) {
        cout << "Yes";
    } else {
        cout << "No";
    }
    return 0;
}
```

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26)

```
#include <iostream>
using namespace std;
int main() {
    int x = 0, y = 0;
    if (!(x++ == 0 || ++y == 0)) {
        x++;
    } else if (++x == y++) {
        y++;
    }
    if (x > y)
        y = x++;
    cout << x << " " << y;
    return 0;}
```

27)

```
#include <iostream>
using namespace std;
int main() {
    int x = 1, y = 2, mx = 0, mn = 100;
    if (x > mx)
        mx = x;
    else if (x < mn)
        mn = x;
    if (y > mx)
        mx = y;
    else if (y < mn)
        mn = y;
    cout << mx << " " << mn;}
```

28)

```cpp
#include <iostream>
using namespace std;
int main() {
    int x = 0, y = 0;
    if (x && ++y) {
        cout << "YES ";
    } else if (++x || y++) {
        cout << "NO ";
    }
    cout << x << " " << y;
}
```

29)

```cpp
#include <iostream>
using namespace std;
int main() {
    char c = '0';
    int x = c;
    if (x % 2) {
        cout << "Even";
    } else {
        cout << "Odd";
    }
}
```

30)

```cpp
#include <iostream>
using namespace std;
int main() {
    char c = 67;
    if (c == 'c') {
        cout << "Yes";
    } else {
        cout << "No";
    }
}
```

31)

```cpp
#include <iostream>
using namespace std;
int main() {
    int x = 15, y = 2;
    if (x++ % 2 == y % 2)
        x++;
    else if (!(x % 2 == y % 2))
        ++y;
    if (x % y)
        cout << "Yes";
    else
        cout << "No";
}
```

32)

```cpp
#include <iostream>
using namespace std;
int main() {
    int x = 70, n1 = 1, n2 = 100, n3 = 50;
    if (x >= n1 && x <= n2) {
        if (x >= n1 && x <= n2)
            cout << "Yes";
    } else {
        cout << "No";
    }
}
```

33)

```cpp
#include <iostream>
using namespace std;
int main() {
    int x, y, z;
    x = 0,y = 1,z = 2;
    if (x < y < z == x) {
        cout << "True";
    } else {
        cout << "False";
    }
}
```

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Answers

1. Runtime error
2. (int)1e5
3. 1
4. Explain
5. Int : 2^{31} -1 ,long long : 2^{63}-1
6.

   short :2

   int :4

   long long :8

   float:4

   double:8

   char:1

   bool:1

   string :1byte for each character in it
7. 4 bytes
8. 4 bytes
9. 8
10. The solution is on GitHub
11.

    1) d.Overflow

    2) a. 2000000000

    3) 50$60

    4) 17 26

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5) Right choice

6) Compilation error (the correct : int a,b,c ; a=b=c=0;)

7) hello world

Explanation: Since std::cout<<"hello" returns a reference to std::cout, therefore, the condition gets true, and the if block is executed.

8) 120

9) d. OneTwoThreeDefault

10) b. Bye

11) b. Five

12) Size of int is: 4

13) Size of char is: 1
Value of a is: R

14) Size of bool is: 1
Value of a is: 0 or Value of a is: 0 (garbage)

15) 36 6

16) 1
0
1
0

17) 0
1
1

18) 97

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19) B
20) 97
21) n
22) Yes
23) Yes
24) 1 -1
25) No
26) 3 2
27) 2 100
28) No 1 0
29) Odd
30) No
31) No
32) Yes
33) False