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## Output of C++ programs | Set 22



Predict the output of the following C++ programs.

### Question 1

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

int main()
{
    int a = b = c = 0;
    cout << a << "*" << b << "*" << c;
    return 0;
}
```

➤ prog.cpp: In function 'int main()':  
prog.cpp:6:10: error: 'b' was not declared in this scope  
 int a = b = c = 0;  
 ^  
prog.cpp:6:14: error: 'c' was not declared in this scope  
 int a = b = c = 0;  
 ^

Output:

Compile time error!

### Explanation:

A chained statement cannot be used to initialize variables at the time of declaration. Hence the statement `a = b = c = 0;` is an illegal statement. However following way a legal syntax and can be used in C++ or C.

```
int a,b,c;
    a = b = c = 0;
```

### Question 2



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```
{
    for ( ; ; ) cout << "blank";
    return 0;
}
```

➤ Output Limit Exceeded

Output:

Infinite Loop!

### Explanation:

Since the initialization, test condition and increment/decrement condition is missing inside for loop the execution will be caught in infinite loop.

### Question 3

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

int main()
{
    int i;
    for (i=0; i<3; i++);

    cout << "hello!" <<i;

    return 0;
}
```

➤ hello!3

Output:

hello!3

### Explanation:

Hello!3 is the result because when for loop executes it does not have any task to do due to the semi-colon(;) present in the line where for loop has been defined. The loop will execute three times and the value of i will become 3 then rest of the statement(s) will execute.

### Question 4

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

int main()
{
```



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```
}
```

Output:

4

### Explanation:

The comma (,) operator is a binary operator that evaluates the first operand and discards the result and then evaluates the second and then returns the value of second. Here the associativity of the comma (,) operator is from left to right and is easy to understand that the expression(1,4,5,6,3) evaluates to be 3 and then the result 1 + 3 is assigned to i.

### Question 5

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

int main()
{
    int a = 0, b;
    b = (a = 50) + 10;
    cout << a << "$" << b;
    return 0;
}
```

Output:

50\$60

### Explanation:

The statement `b = (a = 50) + 10;` uses the concept of embedded assignment. Here, the value of 50 is assigned to variable a and the result 50+10 is assigned to b.

### Question 6

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

int main()
{
    char a = 30, b = 40, c = 10;
    char d = (a*b)/c;
    cout << int(d);

    return 0;
}
```



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### Explanation:

The C++ can also perform arithmetic calculation considering the ASCII values of characters if the arithmetic operation are performed on variables of char datatype. Here in this case answer is 120 which is the ASCII value for x.

### Question 7

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

int main(int x)
{
    static int i = 5;

    if (--i)
    {
        cout << i;
        main(10);
    }
    return 0;
}
```

Output:

4321

### Explanation:

Any non-zero number in C++ is treated as true value. Here in this code the if statement tends to decrease the value of i but inside the block of if, the main() function is called again and again. Here the program seems to be in infinite loop but the variable i is static in nature it has its lifetime till execution hence the program will halt if i becomes 0.

### Question 8

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

int main(int x)
{
    int i = 5;

    if (--i)
    {
        cout << i;
        main(10);
    }
    return 0;
}
```



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infinite loop

### Explanation:

Any non-zero number in C++ is treated as true value. Here in this code the if statement tends to decrease the value of i but inside the block of if, the main() function is called again and again (all the statements will now execute as if it is a new program) hence the program execution will be caught in infinite loop as there is no termination condition.

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