

Advanced C++ EXAM

NAME _____

SURNAME _____

1	In Debug mode, to debug inside a function when it is called, you use				A	B	C	D				
A	step onto	B	step into	C	step inside	D	step to					
2	The creator of C++ is				A	B	C	D				
A	Torvalds	B	Stroustrup	C	Torvalds	D	Ritchie					
3	Which function is invoked by : min(5 , 1.2 , 1.3)				A	B	C	D				
A	double min(double a, int b, double c)		B	double min(int a, int b, double c)								
C	double min(double a, double b, int c)		D	double min(int a, int b, int c)								
4	double is a				A	B	C	D				
A	intrinsic type		B	primitive type		C	built-in type	D	fundamental typ			
5	What does it print? int a = 10; int b = a++; a= --b; cout << a+b;				A	B	C	D				
A	20		B	21		C	18	D	19			
6	Indicate the correct syntax for a structure definition:				A	B	C	D				
A	struct P { int x; }		B	struct P { int x; };		C	Struct P { int x; }	D	Struct P { int x; };			
7	Select the literal in this list:				A	B	C	D				
A	"hello"		B	if		C	a+b	D	&			
8	void F(int &t) { t += 1; } int G(int t) { return t+2; } What does this line print : int main() { int a = 0; F(G(a)); cout << a; }				A	B	C	D				
A	error		B	1		C	2	D	3			
9	Which of the following expressions is an rvalue?				A	B	C	D				
A	x		B	p.u		C	T[i]	D	a*a			
10	Syntax to initialize an instance variable x in the constructor of V:				A	B	C	D				
A	V(int x) a(x) { }			V(int a) x(a) { }		C	V(int a), x { }	D	V(int a) : x(a) { }			
11	How can you make a member function constant?				A	B	C	D				
A	void const f() { }			void f(const) { }			void f() const { }		void f() { } const			
12	How do you instantiate a template class K with double?				A	B	C	D				
A	K<double> b;		B	K b(double);		C	K(double) b;	D	K<T=double> b;			
13	Which STL function randomly rearranges the elements of a vector?				A	B	C	D				
A	scramble		B	shuffle		C	randomize	D	mixup			
14	Which constructor chaining syntax is correct? Struct B { Base(int x) { } };				A	B	C	D				
A	struct A : Base { A(int x) : Base(x) { } };			B	struct B : Base { B(int x) { Base(x) } };							
C	struct C : Base { C(int x) = Base(x) { } };			D	struct D : Base { Base(int x) : x { } };							
15	Which keyword ensures that a derived class function replaces its parent version?				A	B	C	D				
A	virtual		B	extends		C	override	D	derived			
	Which line produces an error ? One question per column				A	B	C	D				
16	int a = 7, b= 5;		17			18	void aa() { }					
A	int & c = a;		E	int a = 10;		I	void bb() { aa(); }		E	F	G	H
B	int & e;		F	int b = a++;		J	void kk() { aa(); }					
C	b = c;		G	const int & d = a;		K	void cc() { dd(); }		I	J	K	L
D	c = b;		H	a = d++;		L	void dd() { kk(); }					

Exercise 1

Output all the elements of a vector<int> v

Exercise 2

Fill the vector v with the squares of the elements contained in the vector w.

You must use the STL algorithm std::transform in conjunction with a lambda expression.

SYNTAX : transform(first1, last1, out1, UnaryFnt)

Exercise 3

```
class Value
{
    private : int x;
    public :
        Value(int v) : x(v)    { }
        void copy(const Value & r) { x = r.x; }
        int & get()              { return x; }
        const int & get( ) const { return x; }
};
```

For each const keyword, explain its role and utility

(const Value & r)

get() const

const int & get()

Write an example where the <<const int& get() const>> function is called.