

Midterm 3 Study Guide

Due No due date    Points 25    Questions 25    Time Limit 30 Minutes    Allowed Attempts Unlimited

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Attempt History

	Attempt	Time	Score
KEPT	<a href="#">Attempt 4</a>	21 minutes	23 out of 25
LATEST	<a href="#">Attempt 7</a>	25 minutes	21.5 out of 25
	<a href="#">Attempt 6</a>	25 minutes	21 out of 25
	<a href="#">Attempt 5</a>	30 minutes	17 out of 25
	<a href="#">Attempt 4</a>	21 minutes	23 out of 25
	<a href="#">Attempt 3</a>	26 minutes	19.89 out of 25
	<a href="#">Attempt 2</a>	30 minutes	22.5 out of 25
	<a href="#">Attempt 1</a>	27 minutes	21 out of 25

⚠ Correct answers are hidden.

Submitted Jul 12 at 10:03pm

Question 11 / 1 pts

A catch block may handle exception classes, as well as errors where `int` or `string` are thrown.

- ☒ True
- ☐ False

Question 21 / 1 pts

You can report a logical error encountered in your code by using the `throw` keyword.

- ☒ True
- ☐ False

Question 31 / 1 pts

Match each item with the correct loop form below.

- Indefinite limit loop that reduces its input

while (n != 0) { n /= 2; }
- Indefinite limit loop that uses successive approximations

while(abs(g1 – g2) >= EPSILON)
- Counter-controlled symmetric loop for producing a sequence of data

for (int i=12; i <= 19; i++) { . . }
- Indefinite data loop that uses raw input

while(cin.get(ch)) { . . }
- Counter-controlled asymmetric loop for processing characters

for (size\_t i=0, len=s.size(); i < l
- Iterator loop that may change its container

for (auto& e : col) { . . }
- Iterator loop that cannot change its container

for (auto e : col) { . . }
- Counter-controlled loop for processing substrings

for (size\_t i=4, slen=4, len=s.siz
- Indefinite data loop that uses formatted input

while(cin >> n) { . . }

Question 41 / 1 pts

Which of the following blocks is designed to catch any type of exception?

- ☐ `catch() { }`
- ☐ `catch(exception) { }`
- ☐ `catch(*) { }`
- ☒ `catch(...) { }`



Question 51 / 1 pts

A function template may be declared in a header file but **must be** defined in an implementation file.

☐ True

☒ False

Question 61 / 1 pts

What happens when you execute the following (erroneous) code:

```
istreamstring in("one");
int n;
in >> n;
```

☐ The code will not compile, since "one" is not convertible to an int.

☐ The program prints an error message, but continues running

☐ The program prints an error message and unconditionally terminates

☒ The stream is put into a failed state, but the program continues running

☐ The stream is put into a failed state, so the program terminates

Question 71 / 1 pts

Which of the following loop patterns are used here?

```
size_t pos = 0;
char ch;
in.get(ch);
while (ch != 'Q')
{
    pos++;
    in.get(ch);
}
```

☒ sentinel loop

☐ counter-controlled loop

☐ data loop

☐ limit loop

☐ loop-and-a-half

☐ inline test

☒ primed loop

☐ iterator or range loop

Question 81 / 1 pts

What is true about this code?

```
template <typename T, typename U>
T pickle(T& a, const U& b) {
    a += b;
    return b;
}

int main()
{
    auto x = 42.0;
    auto y = pickle(x, 4.5);
    cout << x << endl;
    cout << y << endl;
}
```

☐ This code does not compile.

☐ In main, x prints 46

☐ In main, y prints 4

☒ In main, x prints 46.5

☒ In main, y prints 4.5

Partial

Question 9

0.5 / 1 pts

What is true about this piece of code?

```
template <typename T, typename U>
T pickle(T& a, const U& b) {
    a += b;
    return b;
}

int main()
{
    int x = 42;
    auto a = pickle(x, 4.5);
    cout << a << endl;
    cout << x << endl;
}
```

☒ In main, x prints 46

☐ In main, x prints 46.5

☐ This code has a syntax error.

☐ In main, a prints 4.5

☐ In main, a prints 4

Question 10

1 / 1 pts

The general, Computer Science term for a collection of variables that have distinct names and types is a *record*.

☒ True

☐ False

Incorrect

Question 11

0 / 1 pts

A vector represents a linear heterogeneous collection of data.

☒ True

☐ False

Question 12

1 / 1 pts

Assuming the following variable definition, which statement creates an object which refers to the first element in **v** and which prohibits you from changing **v**?

```
vector<double> v{1.2, 2.3, 3.4};
```

☐ `auto b = end(v);`

☐ `auto d = cend(v);`

☐ `auto a = begin(v);`

☐ None of these

☒ `auto c = cbegin(v);`

Incorrect

Question 13

0 / 1 pts

Which of these are true?

```
int main()
{
    vector<int> v{1, 2, 3};
    for (size_t i = v.size() - 1; i >= 0; i--)
        cout << v.at(i) << " ";
    cout << endl;
}
```

☐ Compiler error (does not compile)

☒ Crashes when run

☒ Endless loop (may crash, but not necessarily)

☐ Prints 3 2 1

☐ Issues a compiler warning, but no error

Question 141 / 1 pts

What is stored in data after this runs?

vector<int> data{1, 2, 3};  
data.push\_back(0);

☐ []

☐ [2, 3]

☐ [1, 2]

☒ [1, 2, 3, 0]

☐ [1, 2, 3]

☐ None of these

Question 151 / 1 pts

Examine the following code (which is legal). Which statement is illegal?

struct Money { int dollars{0}, cents{0}; } m1, m2;

☒ cout << m1 << endl;

☐ m2.cents++;

☐ m1 = m2;

☐ if (m1.cents != m2.dollars) . . .



Incorrect

Question 160 / 1 pts

What is stored in data after this runs?

vector<int> data{1, 2, 3};  
data.pop\_back(0);

☐ [1, 2, 3, 0]

☐ [1, 2, 3]

☐ []

☐ [2, 3]

☐ None of these

☒ [1, 2]

Question 171 / 1 pts

The declaration: vector<int> v = new vector<>(); creates a vector object with no elements.

☐ True

☒ False

Question 181 / 1 pts

The elements of a C++ array created in a function are allocated on the stack.

☒ True

☐ False

Question 191 / 1 pts

What is a common pointer error?

- ☐ Assigning a new value to a pointer
- ☐ Using indirection on a pointer
- ☐ Setting a pointer value to nullptr
- ☒ Using a pointer without first initializing it
- ☐ Dereferencing a pointer

Question 20

1 / 1 pts

What does the array *a* contain after this runs?

```
int a[] = {1, 2, 3};
int b[] = {4, 5, 6};
a = b;
```

- ☐ {4, 5, 6}
- ☒ Syntax error; does not compile.
- ☐ {1, 2, 3}
- ☐ Undefined behavior

Question 21

1 / 1 pts

What is printed when you run this code?

```
int *n{nullptr};
cout << *n << endl;
```

- ☐ No output; compiler error.
- ☒ No compilation errors, but undefined behavior
- ☐ The word "nullptr"
- ☐ The address value 0

Question 22

1 / 1 pts

Which array definition is illegal?

```
const int SIZE = 3;
int a1[SIZE];
int a2[3];
int a3[3]{};
int a4[] = {1, 2, 3};
int a5[2] = {1, 2, 3};
```

- ☐ a2
- ☐ None of these
- ☐ a3
- ☐ a1
- ☒ a5

Question 23

1 / 1 pts

Explicitly initializing an array like this: *int a[] = {1, 2, 3};* works in all versions of C++.

- ☒ True
- ☐ False

Question 24

1 / 1 pts

Which area of memory is your program code stored in?

- ☐ Initialized Data
- ☐ Heap

☒ Text

☐ Stack

☐ Uninitialized Data

Question 251 / 1 pts

In C++ initializing an array with the contents of another is illegal.

☒ True

☐ False

