

## Test Topics

These tests are from 30862 which taught both Java and C++, but the format for the 39595 classes will be similar. The topic summaries came from me giving the questions a quick look – it is possible that other topics were covered by the questions that I didn't notice. As well, almost all topics rely on a knowledge of virtual function calls and how they work.

### Fall 2019, Test 3:

#### C++ questions

Questions 1 - 4, templates

Questions 5, 6, initializer lists

Question 7, variable access

Questions 8 - 20, references, copy constructors, parameter passing

#### Java questions:

Questions 21 - 24, cloning and copy constructors

Questions 26 - 28, try-catch, exceptions

Questions 29 - 31, threading

Questions 35 - 39, Interfaces, virtual function calls of public and private methods

### Fall 2019, Test 2:

#### C++ questions

Questions 1 - 6, casts

Questions 7 - 12, operator overloading

Questions 13 - 18, references, copy constructors, parameter passing

#### Java questions

Questions 19 - 33, constructors, inheritance, virtual function calls

Questions 34 - 39, interfaces

### Fall 2019, Test 1:

#### C++ questions

Questions 1 - 22, inheritance, virtual function calls

Questions 23 - 28, implicit casts and function calls, references, initializer lists, destructors

Questions 29 - 40, virtual pure functions and abstract classes, implicit casts and function calls

#### Java questions

none

### Spring 2019, Test 2

#### C++ questions

Questions 24 - 33, references, parameter passing, implicit casting from object to reference and reference to object.

Questions 34 - 35, operator overloading

Questions 36 - 40, virtual and non-virtual function calls, inheritance

### **Java questions**

Questions 1 - 13, inheritance and virtual function calls, function resolution

Questions 14 - 17, threading, static variables

Questions 18 - 20, static variables, base constructor calls

Questions 21 - 23, cloning

### **Spring 2019, Test 1**

#### **C++ Questions**

Questions 1 - 28, constructor call order, inheritance, virtual and non-virtualfunction calls, references

Questions 29 - 36, static functions and variables, which variables is referenced

Questions 36 - 43, casts

Questions 46 - 50, constructors, access modifiers and inheritance

#### **Java Questions**

None

### **Fall 2018, Test 3**

#### **C++ questions**

Questions 1 – 15, virtual function calls using pointers and references

Questions 16 – 21, constructor calls, initializer lists

Questions 22 – 24, containers

Questions 25 – 26, function resolution (using a converting constructor!)

#### **Java questions**

Questions 27 – 30, parameter passing

Questions 31 – 32, exceptions

Questions 33 – 35, multithreading

Questions 36 – 39, cloning

Questions 40 – 47, virtual method calls

### **Fall 2018, Test 2**

#### **C++ questions**

Questions 1 - 6, exceptions

Questions 7 - 14, references, parameter passing

Questions 15 - 19, operator overloading

Questions 20 - 30, inheritance, virtual function calls

#### **Java questions**

Questions 31 - 44, inheritance, virtual function calls, static methods

Questions 45 - 49, interfaces and abstract methods

Questions 50 - 53, static methods

### **Fall 2018, Test 1**

#### **C++ questions**

Questions 1 - 4, objects and classes

Questions 5 - 24, inheritance and virtual function calls

Questions 25 - 33, hiding, destructor call orders and calling on variables

Questions 34 - 36, not really sure other than different types deriving from a base class

Questions 37 - 39, casts

### **Java questions**

None

### **Fall 2017, Test 3**

#### **C++ Questions**

Questions 1 – 4, templates

Questions 5 – 8, multiple inheritance

Questions 12 – 15, smart pointers

Questions 16 – 21, function resolution, private public

#### **Java Questions**

Questions 9 – 11, function resolution

Question 22 – 24, garbage collections

Questions 25 – 29, multithreading

Questions 30 – 35, cloning

Questions 36 – 40, virtual function calls

### **Fall 2017, test 2**

#### **C++**

Questions 1 – 10, exceptions

Questions 11 – 15, object destruction, object assignment

Q16 – 27, operator overloading

#### **Java**

Questions 28 – 32, function resolution

Questions 33 – 45, function resolution, virtual function calls

Questions 46 – 50, parameter passing

### **Fall 2017 Test 1**

#### **C++**

Questions 1 – 4, call functions on objects

Questions 5 – 11, static and dynamic casts

Questions 12 – 16, constructor call order, parameter passing? Note that b0 and b1 should have been declared as type B.

Questions 17 – 28, references, pointers and objects and parameter passing

Questions 29 – 46, references, object assignment and virtual function calls

## **Fall 2016 Test 2**

### **C++**

Questions 1 – 10, accessing object fields and inheritance

Questions 11 – 20, function calls with objects, reference and pointers

Questions 21 – 24, hiding

Questions 25 – 29, parameter passing

Questions 30 – 34, constructor and destructor call order, copy constructors

Questions 35 – 39, operator overloading

Questions 40 – 43, exceptions

Questions 44 – 46, templates

### **Java**

Questions 47 – 50, multithreading

## **Fall 2016 Test 1**

### **C++**

### **Java**

Questions 1 – 17, virtual function calls, casts

Questions 18 – 23, accessing object fields

Questions 24 – 28, static variables and functions

Questions 29 – 32, exceptions

Questions 33 – 34, cloning

Questions 35 – 38, interfaces, abstract classes, abstract methods

Questions 39 – 40, function resolution