**Вопросы к экзамену**

1. Intrusive containers  
   Heterogeneous lookup
2. shared\_ptr  
   weak\_ptr
3. (N)RVO  
   Rvalue references  
   Move semantics, *std::move*, reference collapsing  
   Perfect forwarding, *std::forward*
4. Auto  
   Lambdas  
   *std::function*  
   Type erasure
5. Variadic templates  
   *std::bind*
6. *Signals*  
   Reentrancy
7. Decltype(expr)  
   Decltype(variable)  
   Prvalue, xvalue, lvalue
8. *Nullptr\_t*
9. void\_t
10. Pointer-to-member
11. std::optional, differences with std::unique\_ptr  
    Pimpl
12. std::variant, usage
13. Types of parallelism  
    Std::thread, join and detach  
    Race condition  
    Mutex  
    *Spinlock*  
    Futex(maybe optional)  
    std::lock\_guard  
    Deadlock  
    Atomic types  
    std::condition\_variable  
    Spurious wakeups (fake wakeups)  
    std::unique\_lock  
    Amdahl’s law
14. std::future + std::promise  
    std::async  
      
    Thread pool  
    Thread\_local  
    Transactional memory (software and hardware)  
    map, reduce, filter  
    Asynchronous io (maybe Boost.Asio?)  
    Sharing  
    False sharing  
    Message loop  
    Fiber(stackful coroutine? answer -> (it can be regarded as implementation of co’s concept, but in general this implementation use some ideas of stackfullness))
15. std::transform
16. Push and pull strategies
17. coroutines(stackful and stackless)
18. C++11 new features:  
    Rvalue references for \*this  
    On-declaration initialization of non-static members  
    Enum classes
19. Uniform initialization  
    std::initializer\_list
20. Generalized attributes
21. Unicode  
    Code point  
    Code unit  
    Utf-[8|16|32]
22. С++11 flaws:  
    std::cbegin, std::cend  
    Lambdas and move semantics  
    Std::initializer\_list and move semantics
23. Filesystems  
    FAT  
    Inode  
    File descriptors  
    File locks  
    Creating inode without creating file in fs
24. PLT/GOT