Quiz 2 Lambda Functions

1. Which of the following two statements best describes a *lambda function*?
   a) It is an unnamed function that returns a `void`.
   b) It is an unnamed function that can have any return type.
   c) By default, it is a `const` function whose state cannot be modified.
   d) It is always a `const` function.

2. Which one of the following is true regarding lambda functions?
   a) An explicit return type in the declaration is not needed.
   b) Using the keyword *`mutable`* allows the lambda's state to be modified.
   c) Captured variables are always passed by value.
   d) A lambda's captured variables cannot be modified in the body of the lambda function.

3. What are the top three advantages of using lambda functions in code?
   a) They can improve readability of application code.
   b) They improve code efficiency.
   c) They can be used instead of function objects as arguments to STL algorithms.
   d) They are useful when configuring applications.

4. What is a `nullptr`? Give one answer
   a) It is a null pointer constant.
   b) It is the same as the C `NULL` macro.
   c) It is a global C++ pointer.
   d) It is an integer whose value is 0.

5. How would you characterise `nullptr`? Which are true?
   a) It resolves ambiguities inherent in C and C++.
   b) It resolves the overloading pointer and integer syndrome in function calls.
   c) `std::nullptr_t` converts to all pointer types.
   d) `nullptr` cannot be used with templates.

6. What is `static_assert`?
   a) Is check that static variables have been initialised.
   b) It is a compile-time check on the validity of a boolean condition.
   c) It is a run-time checker.
   d) Is it the same as the C `assert` macro.

7. Which of the following statements concerning `static_assert` is true?
   a) It leads to compile-time errors.
   b) It may appear at block scope.
   c) It may not appear inside a class body.
   d) It only works with constant expressions and string literals.