**1.** What does “Caveat emptor!” mean?

It is a latin phrase that means “let the buyer beware”. A buyer often has less information than a seller and should be beware of buying a product that perhaps won’t meet his expectations.

**2.** What is the default meaning of copying for class objects?

Assign members of a source class to corresponding members of a destination class.

**3.** When is the default meaning of copying of class objects appropriate? When is it inappropriate?

When class object doesn’t hold any pointers or references. Otherwise, the objects that were dynamically-allocated in memory should be also copied.

**4.** What is a copy constructor?

A constructor that uses members of some object to initialize another object of the similiar class.

**5.** What is a copy assignment?

An operation that copies members values of some object to members of another object, provided that both of them are of similiar type.

**6.** What is the difference between copy assignment and copy initialization?

In the first case we should care about current values of destination object (delete values pointed by one of the pointers etc.), while copy initialization only requires values of source object to be properly copied.

**7.** What is shallow copy? What is deep copy?

*Shallow copy* - Objects that were dynamically allocated (using operator **new**) are not copied. Only the pointers that points to them and references are copied.

*Deep copy* - Objects that were dynamically allocated as well as pointers to them and references are copied to the new object.

**8.** How does the copy of a vector compare to its source?

A copy of vector is completely identical to its source. However, to create a copy, the array that holds old elements of a vector should be deleted and the new one of source’s array size that will contain a copy of the source vector array elements should be created.

**9.** What are the five “essential operations” for a class?

1. Constructor
2. Default constructor
3. Copy constructor/assignment
4. Move constructor/assignment
5. Destructor

**10.** What is an explicit constructor? Where would you prefer one over the (default) alternative?

Explicit constructor doesn’t allow a conversion of one type to another if there is a constructor that requires only a single argument. It is implemented, when such conversion has to be avoided (For example:

void f(vector<int> t);

can be invoked like this:

f(10);

if vector had had a constructor that takes a single parameter of type **int** and wasn’t declared with a keyword **explicit**.

**11.** What operations may be invoked implicitly for a class object?

A moving constructor/assignment is invoked implicitly, as well as destructors (at the end of the scope). Also array-name can be implicitly converted to pointer and an object can be implicitly constructed by conversion from one type to the object’s type.

**12.** What is an array?

A homogeneous sequence of objects that is allocated in contiguous memory

**13.** How do you copy an array?

Every element of a destination array should be assigned to every element of a source array

**14.** How do you initialize an array?

int na[num. of elements defined at compile time];

int\* p = new int[num. of elements. can be defined at runtime];

const char [can be empty because the string literal is used for initialization] = “Hello World!”;

**15.** When should you prefer a pointer argument over a reference argument? Why?

When the empty object is a valid value the pointer should be used.

When the object is big the pass-by-reference should be used.

When the object is small the pass-by-value should be used.

**16.** What is a C-style string?

An array of type **char** that is terminated with a null character (‘\0’)

**17.** What is a palindrome?

A word that is read similiar in both directions.