1.

1. telephone：ulong
2. height：byte（cm）
3. age： byte
4. gender： byte
5. salary： float
6. ISBN: String
7. Book Price: byte
8. Book shipping weight: sbyte
9. Population: uint
10. # of stars: ulong
11. # of employees: ushort

2. What are the difference between value type and reference type variables? What is boxing and unboxing?

1. Value type will hold the value, while reference type will hold memory address for its value;
2. Value types will be stored in stack memory, reference type will be stored in heap memory
3. Value type will not be collected by garbage collector, while reference type will be collected by garbage collector
4. Value type can be created by Struct or Enum, while reference type can be created by classes, interfaces, delegates, array
5. Value type cannot accept null values, but reference types can accept null values;

3. What is meant by the terms managed resource and unmanaged resource in .NET?

Managed resources are those that are pure .NET code and managed by the runtime and are under its direct control.

The term "unmanaged resource" is usually used to describe something not directly under the control of the garbage collector

Example:

using (var connection = new SqlConnection("connection\_string\_here"))

{

// Code to use connection here. }

4. What’s the purpose of Garbage Collector in .NET?

(The garbage collector manages the allocation and release of memory for an application.) For developers working with managed code, this means that you don't have to write code to perform memory management tasks. Automatic memory management can eliminate common problems, such as forgetting to free an object and causing a memory leak or attempting to access memory for an object that's already been freed.

1. What happens when you divide an int variable by 0?

System.DivideByZeroException: "Attempted to divide by zero."  
2. What happens when you divide a double variable by 0?

∞  
3. What happens when you overflow an int variable, that is, set it to a value beyond its range?

Operation overflow at compile time  
4. What is the difference between x = y++; and x = ++y;?

The prefix increment returns the value of a variable after it has been incremented.

On the other hand, the more commonly used postfix increment returns the value of a variable before it has been incremented.  
5. What is the difference between break, continue, and return when used inside a loop  
statement?

Break: break the loop

Continue: Stop the current round and go to the next round

Return： return to the value that the return type of function  
6. What are the three parts of a for statement and which of them are required?

The first segment initialises the variable(s) we want to use in the loop. The second part checks the loop's condition before each loop cycle. And the last portion is a so-called iterator.