Name: ____________________________  Student Number: ________________

1. Mention three fundamental deficiencies of technologies like COM & CORBA. [5]
   a. ____________________________
   b. ____________________________
   c. ____________________________

2. How does Web Services address each of these issues. [5]
   a. ____________________________
   b. ____________________________
   c. ____________________________

3. Mention the differences between Value Types and Reference Types in C#. Give an example of how you would write each. [3]


5. What are the different encapsulation related access control levels provided in C#? Explain each. [5]
   a. ____________________________
   b. ____________________________
   c. ____________________________
   d. ____________________________
   e. ____________________________

6. Mention 10 rules to be followed for a document to be well-formed [5].
   a. ____________________________
   b. ____________________________
   c. ____________________________
   d. ____________________________
   e. ____________________________
   f. ____________________________
   g. ____________________________
   h. ____________________________
   i. ____________________________
   j. ____________________________
7. What are the different types of element contents allowed in XML? [10]

8. Explain how the garbage collection process works in .NET. What interface is used to control the cleanup of resources? [5 pts]

9. Write an XML Schema that enforces the rules mentioned below [10 pts]:
   Root element name: **Family**    Possible children: Person (two or more).
   Person may have the following children: **FirstName, LastName, Graduate, Spouse**.
   FirstName and LastName are required. The other two are not.
   Person may also have an attribute named **id** which uniquely represents the Person element.
   FirstName and LastName are character contents.
   Graduate and Spouse are empty elements.
   Graduate has a required attribute named **degree** with character data.
   Spouse has a required attribute named **ref** which refers to an existing Person element.
   Assume that all these elements belong to no namespace.
   Assume the namespace for Schema is http://www.w3.org/2001/XMLSchema.