1. (8 points) Of the following statements, identify all that hold about autonomy.

    A. To get the components of an information system to correctly interoperate, we need to model the extent of their autonomy

    B. We try to avoid autonomy because systems with autonomous components are necessarily fragile

    C. Autonomy arises because different components embody incompatible conceptual modeling assumptions

    D. In large-scale information systems, autonomy often arises due to economic reasons

    > **Solution:** A, D

2. (8 points) Of the following statements, identify all that hold about Web technologies.

    A. As the Web matures, we are able to accomplish more with static pages and thus can safely avoid dynamic pages

    B. Dynamic Web pages are produced with reference to a user request and backend processes or data

    C. An advantage of JSP is that it helps separate the roles of user interface designers and application programmers

    D. In typical e-commerce applications, a shopping cart maps to a stateless session bean

    > **Solution:** B, C

3. (10 points) Of the following statements, identify all that hold about architecture.

    A. Protocols in the generic sense are off-the-shelf products

    B. The important objective of enterprise architecture is to support business objectives in light of changing needs

    C. An IT architecture refers to the organization of IT resources in a business, and has little to do with the organization of people in the business

    D. An IT architecture should identify the dependencies and relationships among enterprise resources and suborganizations

    E. The best enterprise architectures couple the various components tightly so you know exactly what will fit where, thus facilitating upgrading components as needed

    > **Solution:** B, D

4. (8 points) Of the following statements, identify all that hold about names, identifiers, and namespaces. (Recall that a namespace is a set of symbols with some additional constraints.)

    A. Two namespaces cannot include the same symbol

    B. Two namespaces can include the same symbol, but this symbol refers to different names

    C. Although it is allowed, it is not recommended for an XML document to refer to multiple namespaces

    D. The main prerequisite for a unique identifier scheme is the existence of an architecture to resolve the identifiers

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Solution: B

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5. (22 points) Of the following statements, identify all that hold about XML and XML Schema.

   A. XML Schema is a language in which to specify the grammar of any XML document

   B. XML Schema is the grammar of any XML document

   C. XML Schema describes vocabularies built using XML

   D. If you want to specify the grammar of an XML document, there is no alternative but to use XML Schema

   E. A valid XML Schema document is necessarily a valid XML document

   F. In XML Schema, the maxOccurs attribute is unbounded by default because that makes for the most flexible document structure

   G. XML Schema lets us have elements which contain both subelements and text, but such mixed content is not recommended in the schema guidelines

   H. Any desired document structure that you can express via elements you can also express via attributes

   I. You can write attributes in any order but any standards-compliant printout of an XML document must list the attributes in alphabetical order

   J. XML is not well-suited to exchanging information among applications within the same administrative domain

   K. XML documents are structured like trees and, therefore, cannot express graphs

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Solution: A, C, E, G