**Basic web questions**

**1.1** Fill in the blanks in each of the following:

a) The acronym W3C stands for\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

b) W3C standards are called \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

c) The acronym XML stands for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

d) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ incorporates the elements of both CSS and DSSSL.

e) \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ combines ideas from HyTime and the Text Encoding Initiative (TEI).

f) The acronym SGML stands for\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_. .

**1.2** Fill in the blanks in each of the following sentences.

a) \_\_\_\_\_\_\_\_\_\_\_\_\_\_is the information carrying capacity of communications lines.

b) The W3C is pursuing its\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ to help individuals with disabilities utilize the Web.

c) The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_is the grandparent of what is today called the Internet.

d) The information carrying capacity of a communications medium like the Internet is

called .

e) The acronym TCP/IP stands for .

**1.3** Fill in the blanks in each of the following statements.

a) The allows computer users to locate and view multimedia-based documents

on almost any subject over the Internet.

b) of CERN developed the World Wide Web and several of the communications

protocols that form the backbone of the Web.

c) The acronym SOAP stands for .

d) , developed by the W3C, adds to XML’s metadata capabilities, defining entire

categories of data.

e) The acronym SVG stands for .

**1.4** State whether the following are *true* or *false*. If *false*, explain why.

a) In 1994, Bill Gates founded the W3C.

b) XML is a subset of HTML used to format data.

c) MathML is one of many markup languages created with XML.

d) HTML is a W3C Recommendation.

e) The W3C has three hosts.

f) XSL consists of transformations, formatting objects and SOAP.

g) XHTML is an acronym for Extended HyperText Markup Language.

**1.5** State whether the following are *true* or *false*. If *false*, explain why.

a) HTML is an acronym for HyperText Markup Language.

b) SAX is an acronym for Simple API for XML.

c) HyTime is a markup language created with XML.

d) XHTML is the proposed successor to HTML.

e) Tim Berners-Lee and two other individuals created SGML.

f) Parsers are software programs that process XML documents.

g) Cascading Style Sheets technology allows you to specify the style of your page elements

(spacing, margins, etc.) separately from the structure of your document (section headers,

body text, links, etc.).

**DTD QUESTION**

**6.1** State whether the following are *true* or *false*. If the answer is *false*, explain why.

a) The document type declaration, **DOCTYPE**, introduces DTDs in XML documents.

b) External DTDs are specified by using the keyword **EXTERNAL**.

c) A DTD can contain either internal or external subsets of declarations, but not both.

d) Child elements are declared in parentheses, inside an element type declaration.

e) An element that appears any number of times is followed by an exclamation point (**!**).

f) A mixed content element can contain text as well as other declared elements.

g) An attribute declared as type **CDATA** can contain all characters except for the asterisk (**\***)

and pound sign (**#**) characters.

h) Each element attribute of type **ID** must have a unique value.

i) Enumerated attribute types are the most restrictive category of attribute types.

j) An enumerated attribute type requires a default value.

**6.2** Fill in the blanks in each of the following statements:

a) The set of document type declarations inside an XML document is called the

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

b) Elements are declared with the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_type declaration.

c) Keyword\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ indicates that an element contains parsable character data.

d) In an element type declaration, the pipe character (**|**) indicates that the element can contain\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_of the elements indicated.

e) Attributes are declared by using the \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_type.

f) Keyword \_\_\_\_\_\_\_\_\_\_\_\_\_specifies that the attribute can only take a specific value that has

been defined in the DTD.

g) **ID**, **IDREF**, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ and **NMTOKEN** are all types of tokenized attributes.

h) The **%** character is used to declare a/an \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_..

i) DTD is an acronym for \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_..

j) Conditional sections of DTDs are often used with \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.

**6.3** Create a DTD for (**letter.xml**).

**<?xml version = "1.0"?>**

**<!-- Fig. 5.6: letter.xml -->**

**<!-- Business letter formatted with XML -->**

**<letter>**

**<contact type = "from">**

**<name>Jane Doe</name>**

**<address1>Box 12345</address1>**

**<address2>15 Any Ave.</address2>**

**<city>Othertown</city>**

**<state>Otherstate</state>**

**<zip>67890</zip>**

**<phone>555-4321</phone>**

**<flag gender = "F"/>**

**</contact>**

**<contact type = "to">**

**<name>John Doe</name>**

**<address1>123 Main St.</address1>**

**<address2></address2>**

**<city>Anytown</city>**

**<state>Anystate</state>**

**<zip>12345</zip>**

**<phone>555-1234</phone>**

**<flag gender = "M"/>**

**</contact>**

**<salutation>Dear Sir:</salutation>**

**<paragraph>It is our privilege to inform you about our new database managed with <bold>XML</bold>. This new system allows you to reduce the load on your inventory list server by having the client machine perform the work of sorting and filtering the data.</paragraph>**

**<paragraph>The data in an XML element is normalized, so**

**plain-text diagrams such as /---\**

**| |**

**\---/**

**will become gibberish.</paragraph>**

**<closing>Sincerely</closing>**

**<signature>Ms. Doe</signature>**

**</letter>**

**6.4** Create a DTD (**products.dtd**) for a retailer with the following specifications: The XML document that conforms to the DTD must contain a list of products and manufacturers. Each product should be represented by a **product** element and each manufacturer should be represented by a **manufacturer** element. Each manufacturer has a unique **ID**. Represent details like name, address,

etc., as child elements of a **manufacturer** element. Each product has attributes such as product code (which is always unique), unit price, etc. Each product is classified into one of four categories: electronics, household, furniture and groceries. Each product should be related to a manufacturer described in the XML document and should be represented as an element. The product can have a model

name and description as elements. [*Hint*: Relate products to manufacturers using the **IDREF** type attribute.]

**6.5** Use the DTD shown in Fig. 6.16 to construct an XML document. Use the declared entities for the **authors** element. Validate your XML document against the DTD using Microsoft’s XML Validator (or a similar validation program).

**<!-- ex06\_15.dtd: Database containing books -->**

**<!ELEMENT database ( book+ )>**

**<!ENTITY HD "Harvey Deitel">**

**<!ENTITY PD "Paul Deitel">**

**<!ENTITY TN "Tem Nieto">**

**<!ENTITY % CH "( chapter, description )">**

**<!ELEMENT book ( author+, image\*, content+, newchapters\* )>**

**<!ATTLIST book bookID ID #REQUIRED>**

**<!ELEMENT author ( #PCDATA )>**

**<!ELEMENT image ( #PCDATA )>**

**<!ELEMENT content %CH; >**

**<!ELEMENT newchapters %CH; >**

**<!ATTLIST newchapters added ( true | false ) "false">**

**<!ELEMENT chapter ( #PCDATA )>**

**<!ATTLIST chapter number CDATA #REQUIRED>**

**<!ELEMENT description ( section\*, resources\*, summary? )>**

**<!ELEMENT section ( #PCDATA )>**

**<!ELEMENT resources ( #PCDATA )>**

**<!ELEMENT summary ( #PCDATA )>**

**6.6** Write an XML document that declares an address book containing contacts. Each contact has a name and address. An address should contain attributes for street name, state and phone number. The attribute value for state should not contain spaces. For example, **"New York"** would invalidate the XML document. The attribute value for a phone number must contain hyphens and no spaces (e.g., **978-555-1212**). Use entities for states names. [*Hint*: use **NMTOKEN**s]

**6.7** Write an XML document for the DTD created in Exercise 6.6 and validate it.

**6.8** Write a DTD for an XML document that stores company profiles. Each company is represented by a **company** element. Profiles must contain a **name** element and a **tour** element. Element **tour** points to a **.jpg** image or to an HTML page that relates to the company. Element **tour** should specify the type of image or document to which it points. [*Note*: The type of image should be specified by a **NOTATION** type attribute.]. Also write an XML document and validate it against this DTD.

**6.10** Briefly describe each element type declaration:

a) **<!ELEMENT name ( firstName, middleName?, lastName )>**

b) **<!ELEMENT test ( question, answer )\*>**

c) **<!ELEMENT discussion ( agenda, ( issues, solutions )\* )>**