VU Semantic Technologies, XML

**NAME:**                          **MATRIKELNUMMER:**

**1. Consider the following XML document:**

```
<?xml version="1.0" encoding="UTF-8"?>
  <hotel>
    <description>
      Best Exotic Majpoor Home for the &quot; Elderly &quot; and Beautiful
    </description>
    <rooms>17</rooms>
    <manager>
      <name first="Herbert" last="Leiner"/>
    </manager>
  </hotel>
```

Check correct statements (4 points)

- ☒ The XML document is well-formed
- O The hotel <description> has been encoded as an XML attribute
- O The last name of the <manager> may contain un-escaped special characters
- ☒ There could be multiple instances of the <rooms> element within the <hotel> element

**2. Consider the following XSD documents:**

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema">
  <xs:element name="hotel">
    <xs:complexType>
      <xs:sequence>
        <xs:element name="description" />
        <xs:element name="room" type="xs:integer" minOccurs="4" maxOccurs="99"/>
      </xs:sequence>
    </xs:complexType>
  </xs:element>
</xs:schema>
```

Check correct statements (4 points)

- ☒ The XSD document is well-formed
- ☒ The <xs:sequence> definition enforces that the <description> precedes the <room> element
- O The <xs:element> definition enforces that <room> elements have values smaller than 100
- O The XML document above is valid with respect to the XSD document

**3. Consider the following requirement**

A large publisher of cookbooks wishes to publish the recipes contained in his books to an online platform. The cookbooks are individually available for printing in an XML format defined through an XSD document. Each book consists of a number of recipes, which are structured through elements defined in the XSD, and of general explanatory texts, which reside in separate XML structures also defined in the XSD. The online platform would only require the recipes and accept HTML pages in specific formats and would determine the visual appearance through CSS stylesheets.

Check correct statements (5 points)

- ☒ We could use XPath to filter out the recipes from the source data
- O We could use XSD and XPath to make the recipes CSS compatible
- ☒ We could use XSLT to transform recipes into HTML format
- O We could directly validate the target HTML using the source XSD
- ☒ We could merge all books into a large XML if we introduced a <library> root element