Write an XML file which will display the Book information which includes the following:

(i) Title of the book (ii) Author Name (iii) ISBN number (iv) Publisher name (v) Edition (vi) Price

(a) Write a Document Type Definition (DTD) to validate the above XML file.

(b) Write a XML Schema Definition (XSD

Bookstore.xml

```
<?xml version="1.0" encoding="UTF-8"?>
<!DOCTYPE bookstore SYSTEM "bookstore.dtd">
<bookstore>
   <book category="Programming" language="English"
availability="in_stock">
      <title>C Programming</title>
      <author>E. Balaguru Swamy</author>
      <isbn>9856543210</isbn>
      <publisher>Pearson Publications</publisher>
      <edition>4th</edition>
      <price currency="USD">$100</price>
   </book>
   <book category="Programming" language="English"
availability="out_of_stock">
      <title>Java Programming</title>
      <author>James Gosling</author>
      <isbn>9856543288</isbn>
      <publisher>Pearson Publications</publisher>
      <edition>4th</edition>
      <price currency="USD" discount="10%">$90</price>
   </book>
   <book category="AI" language="English" availability="in_stock">
```

```
    <title>AI: A Modern Approach</title>
    <author>Stuart J. Russell</author>
    <isbn>9876543220</isbn>
    <publisher>Princeton Hall</publisher>
    <edition>6th</edition>
    <price currency="USD">$36.09</price>
  </book>
  <book category="XML" language="English" availability="in_stock">
    <title>XML Bible</title>
    <author>Elliotte Rusty Harold</author>
    <isbn>9876543280</isbn>
    <publisher>Hungry Minds</publisher>
    <edition>4th</edition>
    <price currency="USD">$21.99</price>
  </book>
</bookstore>
```

Bookstore.dtd

```
<!ELEMENT bookstore (book+)>

<!ELEMENT book (title, author, isbn, publisher, edition, price)>
<!ATTLIST book
  category CDATA #IMPLIED
  language CDATA #IMPLIED
  availability (in_stock | out_of_stock) "in_stock"
>

<!ELEMENT title (#PCDATA)>
```

```
<!ELEMENT author (#PCDATA)>
<!ELEMENT isbn (#PCDATA)>
<!ELEMENT publisher (#PCDATA)>
<!ELEMENT edition (#PCDATA)>
<!ELEMENT price (#PCDATA)>
<!ATTLIST price
  currency CDATA #REQUIRED
  discount CDATA #IMPLIED
>
<!ENTITY % currency "USD">
<!ENTITY % availability_in_stock "in_stock">
<!ENTITY % availability_out_of_stock "out_of_stock">
```

Bookstore.xsd

```
<?xml version="1.0" encoding="UTF-8"?>
<xs:schema xmlns:xs="http://www.w3.org/2001/XMLSchema"
           xmlns="http://www.example.com/bookstore"
           targetNamespace="http://www.example.com/bookstore"
           elementFormDefault="qualified">

  <!-- Define the root element -->
  <xs:element name="bookstore">
    <xs:complexType>
      <xs:sequence>
        <xs:element name="book" maxOccurs="unbounded">
          <xs:complexType>
            <xs:sequence>
              <xs:element name="title" type="xs:string"/>
              <xs:element name="author" type="xs:string"/>
              <xs:element name="isbn" type="xs:string"/>
              <xs:element name="publisher" type="xs:string"/>
              <xs:element name="edition" type="xs:string"/>
              <xs:element name="price">
                <xs:complexType>
                  <xs:simpleContent>
                    <xs:extension base="xs:string">
                      <xs:attribute name="currency" type="xs:string"
use="required"/>
                      <xs:attribute name="discount" type="xs:string"
use="optional"/>
                    </xs:extension>
                  </xs:simpleContent>
                </xs:complexType>
              </xs:element>
            </xs:sequence>
            <xs:attribute name="category" type="xs:string" use="optional"/>
            <xs:attribute name="language" type="xs:string"
use="optional"/>
            <xs:attribute name="availability">
              <xs:simpleType>
                <xs:restriction base="xs:string">
                  <xs:enumeration value="in_stock"/>
                  <xs:enumeration value="out_of_stock"/>
                </xs:restriction>
              </xs:simpleType>
            </xs:attribute>
          </xs:complexType>
        </xs:element>
```

```
         </xs:sequence>
      </xs:complexType>
   </xs:element>

</xs:schema>
```

Bookstore.xsl

```
<?xml version="1.0" encoding="UTF-8"?>
<xsl:stylesheet version="1.0"
   xmlns:xsl="http://www.w3.org/1999/XSL/Transform">

   <!-- Template to match the root element and create the HTML structure -->
   <xsl:template match="/bookstore">
      <html>
         <head>
            <title>Bookstore Inventory</title>
            <style>
               body {
                  font-family: Arial, sans-serif;
               }
               table {
                  width: 100%;
                  border-collapse: collapse;
                  margin: 20px 0;
               }
               table, th, td {
                  border: 1px solid #ddd;
            }
            th, td {
                padding: 8px;
                text-align: left;
            }
            th {
                background-color: #f4f4f4;
            }
            tr:nth-child(even) {
                background-color: #f9f9f9;
            }
        </style>
    </head>
    <body>
        <h1>Bookstore Inventory</h1>
        <table>
            <thead>
                <tr>
                    <th>Title</th>
                    <th>Author</th>
                    <th>ISBN</th>
                    <th>Publisher</th>
                    <th>Edition</th>
                    <th>Price</th>
                    <th>Category</th>
                    <th>Language</th>
                    <th>Availability</th>
                </tr>
            </thead>
            <tbody>
```

```
                    <!-- Apply templates to each book element -->
                    <xsl:apply-templates select="book"/>
                  </tbody>
                </table>
              </body>
            </html>
          </xsl:template>

          <!-- Template to match each book element and create a table row -->
          <xsl:template match="book">
            <tr>
              <td><xsl:value-of select="title"/></td>
              <td><xsl:value-of select="author"/></td>
              <td><xsl:value-of select="isbn"/></td>
              <td><xsl:value-of select="publisher"/></td>
              <td><xsl:value-of select="edition"/></td>
              <td>
                <xsl:value-of select="price"/>

              </td>
              <td><xsl:value-of select="@category"/></td>
              <td><xsl:value-of select="@language"/></td>
              <td><xsl:value-of select="@availability"/></td>
            </tr>
          </xsl:template>

        </xsl:stylesheet>
```