**Question 1:**

<!ELEMENT Course\_Catalog (Department+)>

<!ELEMENT Department (Title, Chair, Course\*)>

<!ELEMENT Title (#PCDATA) >

<!ELEMENT Chair (Professor)>

<!ELEMENT Professor (First\_Name, Middle\_Initial?, Last\_Name)>

<!ELEMENT First\_Name (#PCDATA) >

<!ELEMENT Last\_Name (#PCDATA) >

<!ELEMENT Middle\_Initial (#PCDATA) >

<!ATTLIST Department Code CDATA #REQUIRED>

<!ELEMENT Course (Title, Description?, Instructors+, Prerequisites?)>

<!ELEMENT Description (#PCDATA)>

<!ELEMENT Instructors (Professor|Lecturer)\*>

<!ELEMENT Lecturer (First\_Name, Middle\_Initial?, Last\_Name)>

<!ELEMENT Prerequisites (Prereq)\*>

<!ELEMENT Prereq (#PCDATA)>

<!ATTLIST Course Number CDATA #IMPLIED

Enrollment CDATA #IMPLIED>

**Question 2:**

<!ELEMENT Course\_Catalog (Department+)>

<!ELEMENT Department (Title, Course+, (Professor|Lecturer)\*)>

<!ELEMENT Title (#PCDATA)>

<!ELEMENT Course (Title,Description?)>

<!ELEMENT Description (#PCDATA|Courseref)\*>

<!ELEMENT Courseref EMPTY>

<!ATTLIST Courseref Number CDATA #REQUIRED>

<!ATTLIST Course Number CDATA #REQUIRED

Prerequisites CDATA #IMPLIED

Instructors CDATA #REQUIRED

Enrollment CDATA #IMPLIED>

<!ATTLIST Department Code CDATA #REQUIRED

Chair CDATA #REQUIRED>

<!ELEMENT Professor (First\_Name, Middle\_Initial?, Last\_Name)>

<!ELEMENT First\_Name (#PCDATA) >

<!ELEMENT Last\_Name (#PCDATA) >

<!ELEMENT Middle\_Initial (#PCDATA) >

<!ELEMENT Lecturer (First\_Name, Middle\_Initial?, Last\_Name)>

<!ATTLIST Professor InstrID CDATA #REQUIRED>

<!ATTLIST Lecturer InstrID CDATA #REQUIRED>

**Question 3:**

<!ELEMENT countries (country\*)>

<!ELEMENT country (city|language)\*>

<!ELEMENT city (name, population)>

<!ELEMENT name (#PCDATA)>

<!ELEMENT population (#PCDATA)>

<!ELEMENT language (#PCDATA)>

<!ATTLIST language percentage CDATA #REQUIRED>

<!ATTLIST country name CDATA #REQUIRED

population CDATA #REQUIRED

area CDATA #REQUIRED>