

Roll No: -----



## UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, May 2018

**Program:** BTech- CSE- GG  
**Subject (Course):** XML programming  
**Course Code :** CSEG 359

**Semester –** IV  
**Max. Marks :** 100  
**Duration :** 3 Hrs

No. of page/s:2

**Section-A: Answer all the questions and each question carries equal marks (5x4=20 Marks)**

1. What is a web service? Elaborate web service architecture in detail
2. Explain at least two important technologies used in creating a web service.
3. Define Ajax. Discuss few advantages and disadvantages of Ajax?
4. Describe all the technologies used by Ajax? Briefly explain functioning of Ajax with labelled figures.
5. Explain all the features of Ajax. Are there any security issues with AJAX, if yes explain them?

**Section-B: Answer all the questions each question carries equal marks (4x10=40 Marks)**

6. Using your favorite search engine, come up with a study on how search engines work. Also explain how we Store Binary Data in XML.
7. Write a code for XML news? Also show the role of the doctype declaration in reference to XML?
8. Give Xml DOM advantages and disadvantages. Also explain different attribute values in DTD. Make an external xml file for the following DTD file.

<pre>&lt;!ELEMENT collection (description, recipe*)&gt; &lt;!ELEMENT description ANY&gt; &lt;!ELEMENT recipe (title, ingredient*, preparation, comment?, nutrition)&gt; &lt;!ELEMENT title (#PCDATA)&gt; &lt;!ELEMENT ingredient (ingredient*,preparation)?&gt; &lt;!ATTLIST ingredient name CDATA #REQUIRED amount CDATA #IMPLIED unit CDATA #IMPLIED&gt;</pre>	<pre>&lt;!ELEMENT preparation (step*)&gt; &lt;!ELEMENT step (#PCDATA)&gt; &lt;!ELEMENT comment (#PCDATA)&gt; &lt;!ELEMENT nutrition EMPTY&gt; &lt;!ATTLIST nutrition protein CDATA #REQUIRED carbohydrates CDATA #REQUIRED fat CDATA #REQUIRED calories CDATA #REQUIRED alcohol CDATA #IMPLIED&gt;</pre>
--	--

9. All HTML elements can be considered as boxes. In CSS, the term "box model" is used when talking about design and layout. Explain functioning of CSS Box Model. Also give some benefits of CSS.

**Section-C: Answer all the questions each question carries equal marks (2x20=40 Marks)**

10. A. Explain schema in xml. Write a schema to validate the XML document shown in Fig. below. This XML document contains information about products in a grocery store. Each product is represented by a product element that contains the name, manufacturer, quantity and price of the product. Each product has a unique ID and is categorized as either perishable or nonperishable. If the product is perishable, it contains a food element. Element food contains the expiration date and nutrition facts. Nutrition facts describe the amount of proteins, fats and calcium in the food. If the product is nonperishable, it contains details of the stock available in one or more warehouses. A warehouse element has a unique ID and contains a description of the warehouse, along with product stock available at the warehouse.

(20 Marks)

<pre>&lt;?xml version = "1.0"?&gt; &lt;products xmlns = "x-schema:exer07_4- schema.xml"&gt; &lt;product id = "p12" perishable = "yes"&gt; &lt;name&gt;Ice cream&lt;/name&gt; &lt;manufacturer&gt;xsz Co.&lt;/manufacturer&gt; &lt;quantity&gt;25&lt;/quantity&gt; &lt;price&gt;2&lt;/price&gt;  &lt;food&gt; &lt;nutrition&gt; &lt;calcium&gt;10.30&lt;/calcium&gt; &lt;proteins&gt;35.5&lt;/proteins&gt; &lt;fat&gt;10&lt;/fat&gt; &lt;/nutrition&gt; &lt;expirationDate&gt;2000-09-&lt;/expirationDate&gt; &lt;/food&gt; &lt;/product&gt;</pre>	<pre>&lt;product id = "p13" perishable = "no"&gt; &lt;name&gt;AA Battries&lt;/name&gt; &lt;manufacturer&gt;DCells&lt;/manufacturer&gt; &lt;quantity&gt;100&lt;/quantity&gt; &lt;price&gt;4&lt;/price&gt; &lt;stock&gt; &lt;warehouse id = "w12"&gt; xsz warehouse &lt;stock&gt;25000&lt;/stock&gt; &lt;/warehouse&gt; &lt;warehouse id = "w13"&gt; rza warehouse &lt;stock&gt;5000&lt;/stock&gt; &lt;/warehouse&gt; &lt;/stock&gt; &lt;/product&gt; &lt;/products&gt;</pre>
---	---

Fig. Document containing food product information

**OR**

B. Define xml schema. Write an example of xml day planner and its xsd. What is XSD Facets provide an example to show how to implement facets in xsd. (20 Marks)

11. A. Define XSL and all its important components in detail. Write xml for the Student details and then make an XSLT file to show its data in the proper table format in the browser. (10 Marks)

B. Explain <xsl:template> element and show how it is used. Also discuss how css is different from xsl file. (10 Marks)

Roll No: -----



## UNIVERSITY OF PETROLEUM AND ENERGY STUDIES

End Semester Examination, May 2018

Program: BTech- CSE GG  
Subject (Course): XML programming  
Course Code : CSEG 359

Semester – IV  
Max. Marks : 100  
Duration : 3 Hrs

No. of page/s:2

---

**Section-A: Answer all the questions and each question carries equal marks (5x4=20 Marks)**

1. Define Ajax. How many types of ready states are there in Ajax? Show an example to show any one ready state.
2. What is a web service? Elaborate web service architecture in detail
3. Explain few of the important technologies used in creating a web service.
4. Describe all the technologies used by Ajax? Briefly explain functioning of Ajax with labelled figures.
5. Elaborate few differences between AJAX and Javascript?

**Section-B: Answer all the questions each question carries equal marks (4x10=40 Marks)**

6. Is XML meant to be a replacement of HTML? Explain.
7. How do you define entities in xml. Also discuss different types of entities used in xml.
8. What is a parser? Briefly define SAX parser. Also differentiate it with DOM parser
9. What is a DTD. Define Notations in DTD. Also give an example to show the use of Notations.

**Section-C: Answer any two questions each question carries equal marks (2x20=40 Marks)**

10. A. Define xml schema in detail. Write a XML Schema document for the XML document in Fig.(shown below) that would allow element note to be a child element of element myMessage. Element note can contain only text. Validate your document. (20 Marks)

```
<?xml version = "1.0"?>
  <!-- Fig: intro.xml -->
  <myMessage xmlns = "x-schema:intro-schema.xml">
    <greeting>Welcome to XML Schema!
    <message>This is the first message.</message>
  </greeting>
  <message>This is the second message.</message>
</myMessage>
```

Fig. XML document that conforms to intro-schema.xml.

OR

B. Explain xml schema in detail. Write a schema to validate the XML document shown below. This XML document contains information about products in a grocery store. Each product is represented by a product element that contains the name, manufacturer, quantity and price of the product. Each product has a unique ID and is categorized as either perishable or nonperishable. If the product is perishable, it contains a food element. Element food contains the expiration date and nutrition facts. Nutrition facts describe the amount of proteins, fats and calcium in the food. If the product is nonperishable, it contains details of the stock available in one or more warehouses. A warehouse element has a unique ID and contains a description of the warehouse, along with product stock available at the warehouse. (20 Marks)

<pre>&lt;?xml version = "1.0"?&gt; &lt;products xmlns = "x-schema:schema1.xml"&gt; &lt;product id = "p12" perishable = "yes"&gt; &lt;name&gt;Ice cream&lt;/name&gt; &lt;manufacturer&gt;xsz Co.&lt;/manufacturer&gt; &lt;quantity&gt;25&lt;/quantity&gt; &lt;price&gt;2&lt;/price&gt; &lt;food&gt; &lt;nutrition&gt; &lt;calcium&gt;10.30&lt;/calcium&gt; &lt;proteins&gt;35.5&lt;/proteins&gt; &lt;fat&gt;10&lt;/fat&gt; &lt;/nutrition&gt; &lt;expirationDate&gt;2000-09- 12&lt;/expirationDate&gt; &lt;/food&gt; &lt;/product&gt;</pre>	<pre>&lt;product id = "p13" perishable = "no"&gt; &lt;name&gt;AA Battries&lt;/name&gt; &lt;manufacturer&gt;DCells&lt;/manufacturer&gt; &lt;quantity&gt;100&lt;/quantity&gt; &lt;price&gt;4&lt;/price&gt; &lt;stock&gt; &lt;warehouse id = "w12"&gt; xsz warehouse &lt;stock&gt;25000&lt;/stock&gt; &lt;/warehouse&gt; &lt;warehouse id = "w13"&gt; rza warehouse &lt;stock&gt;5000&lt;/stock&gt; &lt;/warehouse&gt; &lt;/stock&gt; &lt;/product&gt; &lt;/products&gt;</pre>
--	---

Fig. XML document containing food product information.

11. A. Describe various predicates used in XPath. Write a program using xml and xsl to show the use of for loop and sorting. (10 marks)

B. Explain XPath in detail. Write an XSLT document that transforms games.xml (XML document containing a list of sports.) by adding attribute index for each game element. The value of attribute index should be its position among game elements. [Hint: Use XSLT element number, which outputs the position of the node that is specified in attribute count.]

(10 marks)

<pre>&lt;?xml version = "1.0"?&gt; &lt;!--Sports Database &gt; &lt;sports&gt; &lt;game title = "cricket"&gt; &lt;id&gt;243&lt;/id&gt; &lt;para&gt; More popular among commonwealth nations. &lt;/para&gt; &lt;/game&gt;</pre>	<pre>&lt;game title = "baseball"&gt; &lt;id&gt;431&lt;/id&gt; &lt;para&gt; More popular in America. &lt;/para&gt; &lt;/game&gt; &lt;game title = "soccer"&gt; &lt;id&gt;123&lt;/id&gt; &lt;para&gt; Most popular sport in the world. &lt;/para&gt; &lt;/game&gt; &lt;/sports&gt;</pre>
---	--