

<b>Name:</b>	
<b>Enrolment No:</b>	

**UNIVERSITY OF PETROLEUM AND ENERGY STUDIES**  
**End Semester Examination, December 2018**

**Course: BTech- CSE CCVT**  
**Programme: XML programming**  
**Time: 03 hrs.**  
**Instructions:**

**Semester: V**  
**Course Code: CSIB 313**  
**Max. Marks: 100**

**SECTION A**

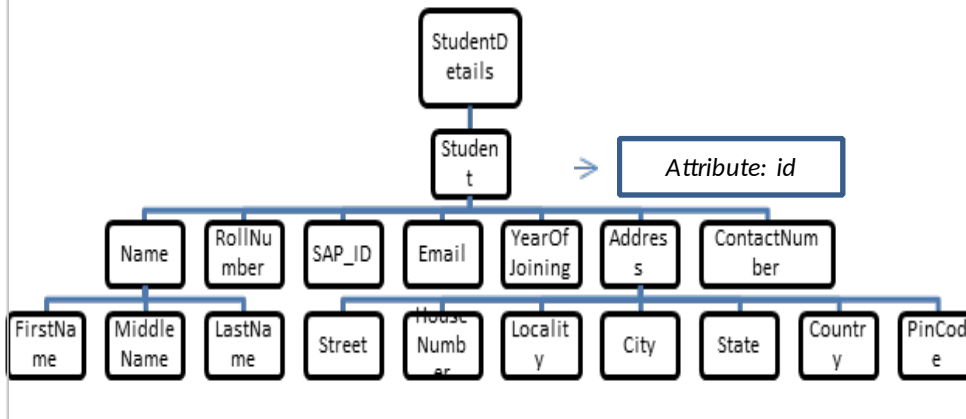
S. No.	Question	Marks	CO
Q 1	What is the role of the doctype declaration in reference to XML?	4	CO1
Q 2	What are the various features of XML?	4	CO1
Q 3	Illustrate some Features and Advantages of XML.	4	CO1
Q 4	Explain how XML transformation is done with XSLT.	4	CO4
Q 5	List the three most important parts of XSL and define XPath in details with example.	4	CO4

**SECTION B**

Q 6	Sketch the anatomy of a SOAP message. What are the uses of Web services? Compare SOA with distributed internet architectures.	10	CO5
Q 7	Explain different selector forms in css. Write a CSS rule that gives all h1 and h2 elements a padding of .5 ems, a grooved border style and a margin of .2 ems. Also, list the basic security requirements for e-business?	10	CO2
Q 8	What are the different template patterns? Write a note over Template rule body. Outline a simple style sheet using XSL that reads input from xml and show output in tabular form in HTML.	10	CO4
Q 9	Define DOM Levels. Compare DOM and SAX based XML parsing. How can you apply restrictions on a Series of Values in xsd.	10	CO3
<p><b>OR</b></p> <p>Show the use of Parser in xml document? Explain at least three parsers that are commonly used to parse XML documents.</p>			

**SECTION-C**

Q 10	A) Write the DTD and XML document for the following tree structure.	20	CO2, CO5
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Check the XML document for validity.

Using above example explain parsing of XML using DOM.

B) Show the working of Ajax with labelled figures. Also, differentiate between JSON and AJAX? What are the protocols used by AJAX? Define these protocols in detail.

Q 11

Here is a fragment of an XML document instance. Identify all the places where it fails to match the constraints for well-formedness.

<PROCEDURE>

<TITLE>How to Bathe a Cat</TITLE>

<OVERVIEW>This procedure tells you how to bathe a cat.

<WARNING></OVERVIEW>

Cats don't like to take baths. You could get hurt doing this. Be sure to obtain all the required protective gear before you start. </WARNING>

<EQUIPEMENT>

<ITEM>Hockey Mask <ITEM>Padded Full-body Kevlar Armor</ITEM>

<ITEM>Tub full of warm water</ITEM>

<ITEM>Towels </ITEM>

<ITEM>First Aid kit</ITEM>

<ITEM>Cat Shampoo</ITEM>

<EQUIPMENT><INSTRUCTIONS>

<STEP> Locate the cat, who by now is hiding under the bed.</STEP><STEP>Place the cat in the tub of water.</STEP>

<ITEM>Using the First Aid kit, repair the damage to your head and arms.</STEP>

<STEP>Place the cat back in the tub and hold it down.</STEP> <STEP>Wash it really fast, then make an effort to dry it with the towels.</STEP> <STEP>Decide not to do this again. </STEP>

</INSTRUCTIONS>

For the following description write the DTD and variations of XML document and check their validity. Element donutBox can have zero or one jelly elements, followed by zero or more lemon elements, followed by one or more creme or sugar elements or exactly one glazed element.

20

CO1,  
CO3

OR

Define xml Declaration section in detail. Also explain its use.

What are the various data types available in XML SCHEMA? Make Schema definition that best fulfills the following conditions:

Information for a multiple number of products coded within in one XML document.

Character data can be coded for product names (element name: product). The product number must have a single, unique name (attribute name: partsno), and is verified as singular and unique by the XML parser. Characters such as # and @ must not be used in price information (attribute name: price) . The default value for price (attribute name: price) is “open”. The “product” element must have a defined “partsno” attribute. Show how whitespaces are handled in xml.

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**SECTION A**

S. No.		Marks	CO
Q 1	How could we use attributes to capture something like the primary-key constraints from the relational schema?	4	CO1
Q 2	What are the components of XML declaration?	4	CO1
Q 3	Explain the rules to write element and attributes in XML.	4	CO1
Q 4	What are predicates, explain with example. How do you select Unknown Nodes using XPath.	4	CO4
Q 5	Describe XPath in detail. Discuss different types of expressions that are available in XPath 3.0.	4	CO4

**SECTION B**

Q 6	Describe in detail Ajax architecture. What is the difference between JavaScript and AJAX?	10	CO5
Q 7	<p>Explain the role of css in xml. How could you use CSS to achieve the following automatic numbering:</p> <p>1) Heading Title  1.1) Subheading Title  1.2) Subheading Title</p> <p>2) Heading Title  2.1) Subheading Title</p> <p>3) Heading Title</p> <p>Write an external style sheet to illustrate pseudo clauses. What are the three pillars of secure E-Commerce?</p>	10	CO2
Q 8	<p>Define Schema and various data types used in xml schema. Write the schema for the following xml document.</p> <pre>&lt;?xml version="1.0" encoding="UTF-8"?&gt; &lt;bookstore&gt;   &lt;book category="cooking"&gt;</pre>	10	CO3

	<pre> &lt;title lang="en"&gt;Everyday Italian&lt;/title&gt; &lt;author&gt;Giada De Laurentiis&lt;/author&gt; &lt;year&gt;2005&lt;/year&gt; &lt;price&gt;30.00&lt;/price&gt; &lt;/book&gt; &lt;book category="children"&gt;   &lt;title lang="en"&gt;Harry Potter&lt;/title&gt;     &lt;author&gt;J K. Rowling&lt;/author&gt;   &lt;year&gt;2005&lt;/year&gt;   &lt;price&gt;29.99&lt;/price&gt; &lt;/book&gt; &lt;book category="web"&gt;   &lt;title lang="en"&gt;Learning XML&lt;/title&gt;   &lt;author&gt;Erik T. Ray&lt;/author&gt;   &lt;year&gt;2003&lt;/year&gt;   &lt;price&gt;39.95&lt;/price&gt; &lt;/book&gt; &lt;/bookstore&gt; </pre>		
Q 9	<p>What are different attribute types and values in DTD, explain with example. How can you apply restrictions on Whitespace Characters, show with the help of an example.</p> <p style="text-align: center;"><b>OR</b></p> <p>What are indicators in schema? How can you use Named Types in schema definition show with an example?</p>	<b>10</b>	<b>CO3</b>
<b>SECTION-C</b>			
Q 10	<p>A. Explain the architecture of SOA. List the characteristics of web services. What are the standard protocols used in web service? Make a template to show SOAP request and response message for retrieving temperature from a web service.</p> <p>B. What is DOM? Explain DOM Traversal with examples. Also define JAXB solutions. Create a document type definition that defines the structure for email message, further create a XML document that reference to the created document type definitions.</p>	<b>20</b>	<b>CO2, CO5</b>
Q 11	<p>What is XML document prolog? With an example, formulate how XSLT can transform an XML document into HTML. Differentiate between absolute path and relative path in XPath. Also, Discuss need for XSL in detail.</p> <p style="text-align: center;"><b>OR</b></p> <p>Create an XML document with the following sample real estate data: Root element real-estate will contain a sequence of sub-elements agencies, owners, properties and flats, all with an empty content. Ensure well-formedness and also draw dom structure of the xml.</p>	<b>20</b>	<b>CO1, CO4</b>

From the XPath expressions and results in Fig. SHOWN BELOW, generate the XML document.

Expression	Result
count( // * )	7
count( // @ * )	6
count( // argument )	2
count( // description )	1
count( // class )	1
count( // function )	2
count( // return )	1
count( // text() )	1
count( // processing-instruction() )	0
count( // function/return )	1
count( // function/argument )	2
count( // class/* )	3
count( // description/* )	0
//class/description	{ "This class handles input" }
//@name	{ "input", "text", "number" }
//@type	{ "string", "int", "string" }
//return/@type	{ "int" }
//argument/@type	{ "string", "string" }
boolean( //function/@name )	true
boolean( //class/@name )	true