M.C.A. DEGREE EXAMINATION, FEBRUARY 2012.

Fourth Semester

DMC 1951 — XML AND WEB SERVICES

(Regulation 2009)

Time: Three hours

Maximum: 100 marks

Answer ALL questions.

PART A — (10 x 2 = 20 marks)

1. ZiftBooks.com was doing B2B commerce using EDI. Now they decided to do the same thing using Web Services. What are the probable reasons for taking such a decision?

2. What is the power of Web Services being exposed through technologies like SOAP and REST?

3. Write the situation where XML Schema is better than DTD for validating a XML document.

4. If XML is all about "text" data, is it possible to include binary data (such as an image) in an XML document? If yes how?

5. What is Web Service? Give an example of when it would be appropriate to use a web service as opposed to a non-serviced component?

6. What is SOAP Encoding? Write the SOAP Encoding rules.

7. What is WSDL? State its role in web services.

8. What is an attribute in XML? What is the difference between storing data in child elements and in attributes?

9. How the business and services are categorized in UDDI?

10. What is Canonicalization?
PART B — (5 x 16 = 80 marks)

11. (a) How is XML useful in extending the Enterprise? Elaborate on the XML Technology Family.

Or

(b) What is Service Oriented Architecture? Explain how web services use SOA framework.

12. (a) (i) Explain the concept of XML Namespaces. How are namespaces declared and used in XML?

(ii) Given the following Type:

```xml
<xsd:complexType name="FashionType">
  <xsd:sequence>
    <xsd:element name="id" type="FashionIDType"/>
    <xsd:element name="name" type="xsd:string"/>
  </xsd:sequence>
</xsd:complexType>
```

Derive another Fashion Type, say Shoe Type, which extends the Fashion Type and contains a choice group of (eg. size, color etc).

(1) Extend this XML schema without complex content/extension.

(2) Extend this XML schema with complex content/extension.

Or

(b) Create XML Schema document with complex contents about students (Sample data given below). Use sid as an attribute.

<table>
<thead>
<tr>
<th>sid</th>
<th>fname</th>
<th>lname</th>
<th>Y_of_B</th>
</tr>
</thead>
<tbody>
<tr>
<td>50</td>
<td>David</td>
<td>Dave</td>
<td>1984</td>
</tr>
<tr>
<td>23</td>
<td>John</td>
<td>Jones</td>
<td>1983</td>
</tr>
<tr>
<td>53</td>
<td>John</td>
<td>Smith</td>
<td>1983</td>
</tr>
</tbody>
</table>

Write a XSLT to display sort the information based on sid.

13. (a) What are the unique features of SOAP, which are missing in DCOM/CORBA/RMI? Explain the success story of web service.

Or

(b) Explain the SOAP message structure with a messaging example. Elaborate on the SOAP Intermediaries, Actors, Design Patterns and Faults.
14. (a) (i) Some argue that Web services are nothing new; they are simply the latest incarnation of distributed computing. In some sense that may be true, but what is it about Web services that is driving the incredible buzz? Why are entrepreneurs, CEOs of established companies, and industry analysts excited about this technology? — Comment. (8)

(ii) How will you communicate with a UDDI Service Registry? (8)

Or

(b) (i) Compare J2EE and .NET framework in the context of web services. (8)

(ii) Explain in detail the WSDL document structure with an example. (8)

15. (a) Explain the XML encryption and XML digital signatures.

Or

(b) (i) Write short note on the following:

(1) XML security frame work (4)
(2) XKMS structure (4)

(ii) Write the guidelines for signing XML documents. (8)