Selected topics from computer science

Date:21-5-07

Comprehensive exam

Total marks=60 (closed book) Weightage=40%

Answer all the questions

Part-A questions (All questions carry equal marks (5 *2=10)

Q1.What is the difference between CPA and CPP in ebxml ?

Q2.Why there is a need for qualifiers in UDDI soap requests?

Q3.Outline any 2 types of architecture using web services ?

Q4.Outline the symmetric key exchange mechanism in SSL commn between a browser and web server.

Q5. `<?xml version="1.0" ?>`

```
<?xml version="1.0" ?>
<Address>
<Street>Wilhelminenstr. 7</Street>
<City>Darmstadt</City>
<State>Hessen</State>
<Country>Germany</Country>
<PostalCode>D-64285</PostalCode>
</Address>


<?xml version="1.0" ?>
<Server>
<Name>OurWebServer</Name>
<Address>123.45.67.8</Address>
</Server>
```

When I try to combine the above XML documents into a single one what sort of difficulty I will face and how the difficulty can be overcome?

Part-B (Answer all the questions 5*10=50M)

Q1.A and B are 2 nodes in internet which want to have secured communication across the internet. They do not have the capacity of generating key pairs –Further the secured applications running in A and B should be independent of any particular PKI and should work across variety of PKI infrastructures. In that case what is the solution that you suggest which will enable the applications to make use of the above features (10M)

Q2.Given the wsdl document for a web service as given below. Find out the soap request and response for the same with proper reasoning. (10 M)

`<?xml version="1.0" encoding="UTF-8"?>`

```xml
<definitions name="HelloService"
    targetNamespace="http://www.ecerami.com/wsdl/HelloService.wsdl"
    xmlns="http://schemas.xmlsoap.org/wsdl/"
    xmlns:soap="http://schemas.xmlsoap.org/wsdl/soap/"
    xmlns:tns="http://www.ecerami.com/wsdl/HelloService.wsdl"
    xmlns:xsd="http://www.w3.org/2001/XMLSchema">

    <message name="SayHelloRequest">
        <part name="firstName" type="xsd:string"/>
    </message>
    <message name="SayHelloResponse">
        <part name="greeting" type="xsd:string"/>
    </message>

    <portType name="Hello_PortType">
        <operation name="sayHello">
            <input message="tns:SayHelloRequest"/>
            <output message="tns:SayHelloResponse"/>
        </operation>
    </portType>

    <binding name="Hello_Binding" type="tns:Hello_PortType">
        <soap:binding style="rpc"
            transport="http://schemas.xmlsoap.org/soap/http"/>
        <operation name="sayHello">
            <soap:operation soapAction="sayHello"/>
            <input>
                <soap:body
encodingStyle="http://schemas.xmlsoap.org/soap/encoding/"
                namespace="urn:examples:helloservice"
                use="encoded"/>
            </input>
            <output>
                <soap:body
encodingStyle="http://schemas.xmlsoap.org/soap/encoding/"
                namespace="urn:examples:helloservice"
                use="encoded"/>
            </output>
        </operation>
    </binding>

    <service name="Hello_Service">
        <documentation>WSDL File for HelloService</documentation>
        <port binding="tns:Hello_Binding" name="Hello_Port">
            <soap:address
                location="http://localhost:8080/soap/servlet/rpcrouter"/>
        </port>
    </service>
</definitions>
```

Q3. a)How the information is spread out in UDDI registry ?(3M)
b)what is meant by category bag and identifier bag when you publish in UDDI and their relative significance ?(4M)
c)with appropriate soap request specify how will you delete(3M)

1. binding in a web service,
2. delete web service
3. delete the business entity

Q4. I wish to develop a database driven php based web application running in a server. The browser will fetch the information for the display of form as given below by invoking the above application.. Whenever I wish to get the latest revenue due to sales update I will invoke the get updated sales button. Assuming the cost price and selling price do not change with time outline how using ajax you will create an efficient web application compared to a non-ajax enabled one.(10M)

No of Laptops sold	
Cost price	
Selling price	
Total revenue	

Get updated sales

Q5. I wish to digitally sign the following documents using XML digital signature

1."http://www.abccompany.com/index.html" would reference an HTML page on the Web

2."http://www.abccompany.com/logo.gif" would reference a GIF image on the Web

Outline clearly the steps involved in XML digital signing and verification at the receiving end. (10M)

BITS, Pilani-Dubai,Campus

Knowledge Village,Dubai

IV th Year second Semester 2007

Degree:B.E.(HONS) Branch:C.S.E

COURSE NO. : CS UC441   COURSE TITLE: Selected topics from computer scienc
(web services and internet based distributed computir

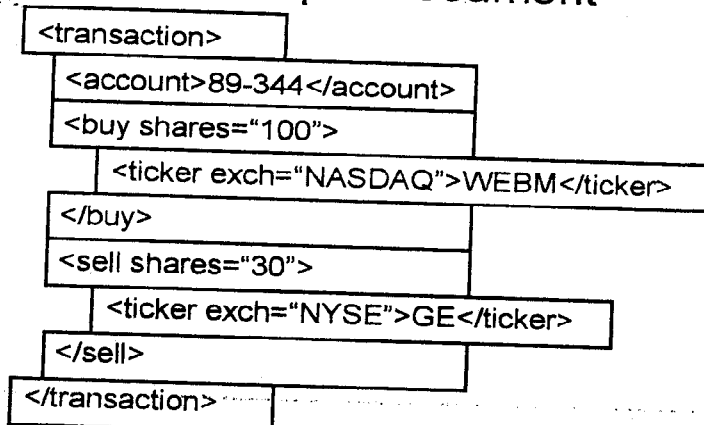Time :50 mts   Date :22-4-2007   Marks: 27 Test2

Answer all the questions(open book)

Q1.What are the differences between message confidentiality and message integrity.?
Can you have one without the other? Justify your answer. {3+4}

Q2.What is the man in the middle attack? Justify Whether this attack can be used when
you use symmetric keys ?{3+4}

Q3.Outline the tree created by a DOM parser for the following xml document clearly
specifying various types of nodes.(6)

Sample Document

```
<transaction>
    <account>89-344</account>
    <buy shares="100">
        <ticker exch="NASDAQ">WEBM</ticker>
    </buy>
    <sell shares="30">
        <ticker exch="NYSE">GE</ticker>
    </sell>
</transaction>
```

Q4a).Outline clearly the vulnerability of WEP security in wireless lans and explain the
scenario under which it happens.(4)

b) Assume that there are three entities Alice ,Bob and Trudy. Let Trudy steals the
Digital certificate of Alice and send it to Bob for SSL communication. In that case
Jujstify whether Trudy can break the confidentiality of the message sent by Bob to
Alice.(3)

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Time :50 mts   Date :4-3-2007   Marks: 27 Test1

Answer all the questions(closed book)

Q1a). Outline with block diagram the need for internet based SOA and means to accomplish the same (4 marks)

. b) Outline the scenario of using SOA where both document centric and RPC enabled web services are used.(4 marks)

Q2.a) Outline the differences between ebxml and web services using simple examples?(2 Marks)

b)Assume there are two businesses X and Y. Let X be a buyer and Y be an ebXML compatiable seller. Outline how X becomes a ebxml compatiable buyer and do business with Y. (4 marks)

Q3. a) Outline how using XML information can be ported between two databases oracle and SQL 2000 with reliability and platform independence.(4 Marks)

b) Outline with the help of examples the difference between a validating parser and a non-validating parser.(3 marks)

Q4.a) What is the need for WSDL document in web services ? (2 Marks)

b)Outline the differences between invoking a web application using web browser and invoking a web service using soap request?(4 marks)