



UNIVERSITY OF COLOMBO, SRI LANKA

**UNIVERSITY OF COLOMBO SCHOOL OF COMPUTING
DEGREE OF BACHELOR OF INFORMATION TECHNOLOGY (EXTERNAL)**

Academic Year 2011/2012 – 3rd Year Examination – Semester 5

IT5404: Internet Application Development

Structured Question Paper with Model Answers

4th March 2012

(TWO HOURS)

To be completed by the candidate

BIT Examination Index No:

Important Instructions:

- The duration of the paper is 2 (Two) hours.
- The medium of instruction and questions is English.
- This paper has 4 questions and 15 pages.
- Answer all 4 questions: Each question carries 25 marks.
- Write your answers in English using the space provided in this question paper.
- Do not tear off any part of this answer book.
- Under no circumstances may this book, used or unused, be removed from the Examination Hall by a candidate.
- Note that questions appear on both sides of the paper.
If a page is not printed, please inform the supervisor immediately.

Questions Answered

Indicate by a cross (×), (e.g. ☐) the numbers of the questions answered.

To be completed by the candidate by marking a cross (×).	1	2	3	4
To be completed by the examiners:				

1)

(a) What is XHTML?

(5 marks)

ANSWER IN THIS BOX

(b) What is SGML? What is the relationship between SGML and XML?

(5 marks)

ANSWER IN THIS BOX

- (c) XML is not just for Web pages. List five (5) other common uses of XML and briefly explain each.

(5 marks)

ANSWER IN THIS BOX

- (d) Write example code for a user defined XML Entity.

(5 marks)

ANSWER IN THIS BOX

- (e) In the XML code below are `aff:name` and `aef:name` identical or are they different? Are the name space declarations given in the code correct?

```
<?xml version= "1.0" standalone= "yes"?>
<references>
  <aff:name
    xmlns:aff= "http://www.ucsc.lk/abc/1.5">
    Macmillan</aff:name>
  <link href= "http://www.abc.com" />
  <aef:name
    xmlns:aef= "http://www.ucsc.lk/abc/1.5">
    Leased Link</aef:name>
  <link href= "http://www.ucsc.lk/newsletter" />
</references>
```

(5 marks)

ANSWER IN THIS BOX

- 2) (a) For controlling formatting and appearance in XML we need to provide a style sheet or use XSLT. In HTML, however we can do the same without either of these. Explain why this is so.

(5 marks)

ANSWER IN THIS BOX

- (b) Write both a DTD and a Schema for the following XML code.

```
<List>
<Item>Chocolate</Item>
<Item>Music</Item>
<Item>Surfing</Item>
</List>
```

(5 marks)

ANSWER IN THIS BOX

(c) Define what is meant by an XMLHttpRequest Object.

(5 marks)

ANSWER IN THIS BOX

(d) XSLT style sheets contain templates. Explain what is achieved by the following example template code.

```
<xsl:template match="section/title">  
  
<P><I><xsl:apply-templates/></I></P>  
  
</xsl:template>
```

(5 marks)

ANSWER IN THIS BOX

(e) Write example code for a XML comment.

(5 marks)

ANSWER IN THIS BOX

3)

- (a) **XLink** enables one to specify links between documents. It recognizes two types of links: *simple links* and *extended links*. Write an XML code sample to demonstrate your knowledge of **simple links**.

(5 marks)

ANSWER IN THIS BOX

- (b) Write a DTD according to which the following XML document is valid.

```
<?xml version= "1.0"?>
<!DOCTYPE address-book SYSTEM "address-book.dtd">
<myContacts>
  <myFriend>
    <address>
      <street>12 Rosmind Place</street>
      <region>WP</region>
      <postal-code>34445</postal-code>
      <locality>South</locality>
      <country>SriLanka</country>
    </address>
    <tel preferred= "true">0112581247</tel>
    <tel>0112581248</tel>
    <name>Kamal</name>
    <email href= "mailto:aaa@ucsc.cmb.ac.lk" />
  </myFriend>
```



```
<myFriend>
  <tel>0112581248</tel>
  <name><fname>Nimal</fname><lname>Jayakody</lname></name>
  <email href= "mailto:aaa@ucsc.cmb.ac.lk" />
</myFriend>
</myContacts>
```

(10 marks)

ANSWER IN THIS BOX

(c) The following PHP code is not complete. Complete the PHP code based on the guidelines given below.

Guidelines:

- The xml is given as a PHP string named “\$xml_string”
 - write code to parse the given xml string using DOM
- hints:
- create a DOM object from the given XML data
 - start at the root
 - move down one level to the root's children
 - iterate through the list of children
- when run the PHP script should output all male names given in the xml

Found : Kamal

Found : Nimal

Found : Dias

code:

```
<?php
```

```
// XML data
```

```
$xml_string = “<?xml version='1.0'?>
```

```
<sentence>A set of male and female names -
```

```
    <male age= '25'>Kamal</male>,
```

```
    <male age= '37'>Nimal</male>,
```

```
    <female age= '36'>Niyomi</female>,
```

```
    <female age= '27'>Shamalie</female>,
```

```
    <male age= '27'>Dias</male>
```

```
</sentence>”;
```

```
//write code to create a DOM object from the given XML data
```

```
...
```

```
// write code to start at the root
```

```
...
```

```
// write code to move down one level to the root's children
```

```
...
```

```
//write code to iterate through the list of children
```

```
...
```

```
?>
```

(10 marks)

ANSWER IN THIS BOX

4)

(a) What do you understand by the phrase “SOAP encoding”?

(5 marks)

ANSWER IN THIS BOX

(b) If you examine the SOAP message of a Web service you will notice the use of a soap namespace and some other namespaces as well. What is the purpose of using namespaces? Give a sample XML code with namespaces.

(5 marks)

ANSWER IN THIS BOX

(c) A developer is writing a request-response Web Service. An error occurs when the service executes. Out of the following which is true about the Body element of this SOAP reply message? Write example code for this SOAP reply message.

- i) it must not contain any fault elements
- ii) it must contain zero or one fault element
- iii) it must contain an array of fault elements
- iv) it can contain as many fault elements as it needs

(5 marks)

ANSWER IN THIS BOX

(d) What do you mean by XML-RPC?

(5 marks)

ANSWER IN THIS BOX

(e) Discuss four (4) disadvantages of Web Services?

(5 marks)

ANSWER IN THIS BOX

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