



**UNIVERSITY OF COLOMBO, SRI LANKA**

**UNIVERSITY OF COLOMBO SCHOOL OF COMPUTING**

**DEGREE OF BACHELOR OF INFORMATION TECHNOLOGY (EXTERNAL)**  
**Academic Year 2010/2011 – 3rd Year Examination – Semester 5**

***IT5403: Internet Application Development***  
***Structured Question Paper***

**13<sup>th</sup> March 2011**

**(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) Explain the similarities and differences between XML and HTML.

(5 marks)

**ANSWER IN THIS BOX**

- (b) Is the following XML document “well formed”, justify your answer using line numbers if necessary.

1. <?xml version="1.0"?>
2. <address>
3.     <name>nimal</name>
4.     <NO/>24
5.     <street>1st lane</street>
6.     <city>Colombo</city>
7.     <country/>sri lanka </country>
8. </address>

(5 marks)

**ANSWER IN THIS BOX**

(c) Explain the correctness or otherwise of the following statement.

*“XML is entirely about web pages and cannot be used to represent information other than about web pages on a computer.”*

**(5 marks)**

**ANSWER IN THIS BOX**

(d) One of the main benefits of XML is the ability to develop XML documents once and then have them viewable on a range of devices, such as desktop computers, handheld computers, mobile phones, and Internet appliances. Explain how/why this is possible.

**(5 marks)**

**ANSWER IN THIS BOX**

- (e) One of the main goals of XML is to separate the meaning of information from its presentation. Explain how this is achieved in XML.

(5 marks)

**ANSWER IN THIS BOX**

- 2) (a) Explain the effect of the following two XML statements and in which contexts they could occur.

1. `<gender type="male"></gender>`
2. `<gender type="male" />`

(5 marks)

**ANSWER IN THIS BOX**

- (b) Write a complete XML file which contains the following XML code with / including an Internal DTD, corresponding to the code.

```
<school>
  <name>abc</name>
  <br/>
  <no>24</no>
  <street>1st lane</street>
  <city>Colombo</city>
  <country>sri lanka</country>
</school>
```

(5 marks)

**ANSWER IN THIS BOX**

- (c) If a child element "street" must occur at least once or more times inside an "address" element, write the DTD code to enforce this constraint. (i.e. declaring a minimum of one occurrence of an element).

(5 marks)

**ANSWER IN THIS BOX**

- (d) Explain what the following DTD code means.

<!ELEMENT address (#PCDATA|name|street|city|country)\*>

(5 marks)

**ANSWER IN THIS BOX**

(e) I). What does the following DTD code mean? What does “99” mean in this code?

&lt;!ELEMENT tank EMPTY&gt;

&lt;!ATTLIST tank volume CDATA "99"&gt;

II). Is the following XML code valid according to the above DTD? Explain your answer.

&lt;tank volume="150" /&gt;

**(5 marks)**

**ANSWER IN THIS BOX**

[illegible]





(b) What is XQuery used for? How is XQuery related to XPath?

(5 marks)

**ANSWER IN THIS BOX**

(c) Explain the correctness or otherwise of the following statement. Explain your answer.

*“A tree-based XML parser is preferable for large files than an event-based XML Parser”*

(5 marks)

**ANSWER IN THIS BOX**


(d) I). What are the main methods of a tree-based XML parser?

II). What are the main events of an event-based XML parser?

(5 marks)

**ANSWER IN THIS BOX**




[illegible]

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(c) List two other approaches/technologies which provide similar functionality to web services.

(5 marks)

**ANSWER IN THIS BOX**


(d) Explain the purposes of the following technologies with respect to Web Services.

UDDI

SOAP

WSDL

**(5 marks)**

**ANSWER IN THIS BOX**

(e) Explain the correctness or otherwise of the following statement.

*“The SOAP message is transferred in the HTTP Header section”*

**(5 marks)**

**ANSWER IN THIS BOX**

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