



**UNIVERSITY OF COLOMBO, SRI LANKA**

**UNIVERSITY OF COLOMBO SCHOOL OF COMPUTING**

**DEGREE OF BACHELOR OF INFORMATION TECHNOLOGY (EXTERNAL)**

**Academic Year 2014/2015 – 3<sup>rd</sup> Year Examination – Semester 5**

***IT5404: Internet Application Development***  
***Structured Question Paper***

**08<sup>th</sup> March, 2015**  
**(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 **13 pages**.
- **Answer all questions.** All questions carry equal 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 (×).	Question numbers			
	1	2	3	4
To be completed by the examiners:				

- 1) (a) “It is important that we look at component-based application development because Web Services is dependent on its existence”. Concerning this why are developers using constituents for their development? Write down two reasons to justify this statement.

**(6 Marks)**

ANSWER IN THIS BOX

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- (b) Draw a block diagram of a 3-Tier Application and show how it could be elaborated as a 5-Tier application. Hint: Draw the diagrams side by side.

**(6 Marks)**

ANSWER IN THIS BOX

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(c) Briefly explain the Resources Tier in a 5- Tier Application.

**(6 marks)**

- (d) Diagrammatically illustrate the 3-Tiers, their interactions, technologies and protocols used within the platform of J2EE and Enterprise Java Beans (EJB).

**(7 marks)**

ANSWER IN THIS BOX

2

- (a) Write down the purpose of the following different element declaration symbols used to establish the content model of the element as shown below.

```
<! ELEMENT resume (intro, (education | experience)+,
hobbies? , references*)>
```

(7 Marks)

ANSWER IN THIS BOX**Element Declaration Symbols****Purpose**

(i) Parentheses ( ( ) )

(ii) Comma ( , )

(iii) Pipe ( | )

(iv) No Symbol

(v) Question Mark ( ? )

(vi) Plus Sign ( + )

(vii) Asterisk ( \* )

- (b) “The following is another way to express the exact link by spelling all of the pertinent XLink attribute values”. Explain this according to the given line numbers (i), (ii),(iii),(iv), (v) and (vi).

```
<students xmlns : xlink = http://www.w3.org/1999/xlink
```

- (i)      xlink : type = "simple"
- (ii)     xlink : href = "students.xml"
- (iii)    xlink : show = "replace"
- (iv)     xlink : actuate = "user"
- (v)      xlink : role = "students"
- (vi)     xlink : title = "Student List" >

Current Students

```
</students>
```

**(6 Marks)**

ANSWER IN THIS BOX

(i)

(ii)

(iii)

(iv)

(v)

(vi)

- (c) Write down a code to change the text appearance of “University of Colombo School of Computing” using appropriate values given below using the XSL-FO Language.

(font size=10pt, text align=end, background colour=blue, text colour=red, font family=serif)

**(6 Marks)**

ANSWER IN THIS BOX

- (d) Write the correct query using proper syntax to display the following referencing attributes in XQuery.

- (i) To find all the year attributes of vehicle elements
- (ii) Return all of the vehicle elements that have year attributes as well
- (iii) to find all of the vehicles with a colour of red or a price greater than 1300000,

**(6 Marks)**

ANSWER IN THIS BOX

(i)

(ii)

(iii)

3

- (a) List down six (6) operator types that are available in PHP with a brief description of each.  
(6 Marks)

ANSWER IN THIS BOX

Type	Description

- (b) What would be the output of the following PHP code?

```
<?php
$first_name = "Kamal";
$last_name = "Guruge";
$whole_name = $first_name . " " . $last_name;
echo "First name plus last name = <b>$ whole_name</b>";
```

(4 Marks)

ANSWER IN THIS BOX




- (c) The client side (of the consumer) of this application is represented by the nusoap-hello-client.php. Given below is a listing of this script. Explain the lines (i) to (vii), and write what it does.

```
<? php
```

```
(i) require_once ('nusoap.php');
(ii) $client = new soapclient
    ('http://localhost/soap/nusoap/nusoap-hello-
    server.php');
(iii) $params = array ('message' =>'world');
(iv) $response = $client-> call ('helloWorld',$params);
(v) if ($client ->fault )
    {
(vi) print "ERROR! " . $client ->faultstring. "\n";
    }else {
(vii) print $response;
    }
?>
```

**(5 Marks)**

ANSWER IN THIS BOX

(i)

(ii)

(iii)

(iv)

(v)

(vi)

(vii)

(d) What would be the output of the following PHP code?

```
<body>
<?php
    $x=1;
    while($x<=5) {
        echo "The number is: $x <br>";
        $x++;
    }
?>
</body>
```

**(5 Marks)**

ANSWER IN THIS BOX

(e) What would be the output of the following PHP code?

```
<body>
<?php
    $i=1;
    do{
        $i++;
        echo "The number is " . $i. "<br/>";
    }
    While ($i<=5);
?>
</body>
```

**(5 Marks)**

ANSWER IN THIS BOX

- (6 Marks)**

Details	CORBA	DCOM	EJB
Protocol(s)			
Programming Environments			
Operating Systems			

- (6 Marks)**

(c) Briefly explain the Building Blocks of SOAP.

**(6 Marks)**

ANSWER IN THIS BOX

- (d) When the SOAP receiver accepts the SOAP message, its overall function is to disassemble the message, evaluate it and then process it. Briefly explain the main activities for which a SOAP receiver is responsible.

**(7 Marks)**

ANSWER IN THIS BOX

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