



University of Colombo, Sri Lanka

University of Colombo School of Computing

BACHELOR OF SCIENCE IN INFORMATION SYSTEMS

First Year Examination - Semester II - UCSC AY20 [held in March/ April 2024]

IS1109 — Programming for Web Application Development

(Two (2) Hours)

Answer ALL questions

Number of Pages = 12

Number of Questions = 4



To be completed by the candidate

Index Number:

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120

Important Instructions to candidates:

- I. Students should answer in the medium of English language only using the space provided in this question paper.
- II. Note that questions appear on both sides of the paper. If a page or a part of this question paper is not printed, please inform the supervisor immediately.
- III. Write your index number CLEARLY on each and every page of this Question paper.
- IV. This paper consists of 4 questions in 12 pages (including the Cover Page).
- V. Answer ALL questions.
- VI. Programmable Calculators and any electronic device capable of storing and retrieving text including electronic dictionaries, smart watches and mobile phones are not allowed.
- VII. Non-Programmable calculators are allowed
- VIII. Calculators and any electronic device capable of storing and retrieving text including electronic dictionaries, smart watches and mobile phones are not allowed.
- IX. 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.

To be completed by the examiners

1	
2	
3	
4	
Total	

Question 1

State whether the following HTML, CSS, and JavaScript code segments are syntactically **correct or wrong**. If they are wrong, then make necessary changes to correct them.

[10x2 1/2=25 Marks]

1. `<figure caption> <figure> Fig.1 - flower.</figcaption> </figure>`

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.....
.....
.....

2. ` <usemap name="Rose"> <shape="rectangular" coords="8,38,87,63" a href="comet01.html" alt=Bud> </usemap >`

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.....
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.....

3. `<frameset rows = "200","600" > <frameset columns ="120,600" > <name=main src="left.html"> </frameset> </frameset>`

.....
.....
.....
.....

4. `<head> <style type="text/css"> /*element selector*/ h1{color:#green;font-size:30;font-type:times} </head>`

.....
.....
.....

5. `<head> <script>document.createElement("para")</script> <style type="text/css"> para{display:block;} </style> </head> <body> <para> - - </para> </body>`

.....
.....
.....

6. <head> <style =text/css> [class*="str"] {color: red;}
/*element selector*/ h1{color:#green;font-size:30;font-
type:times} </style> </head> <body> <div
class="first_str"> - - </div>

7. nav{ ul{ margin: 0; padding: 0; list-style: none; }}

8. <form> <fieldset> <legend>Personalalia:</legend> Name: <input
form="text" />
 Email: <input form="text" />

</fieldset> <input type="number" name="points" min="0"
max="100" step="10"
value="30"> <input type="date" name="bday" max="1979-12-31">
</form>

9. .large-heading {font-family:Helvetica, Arial, sans-serif;
font-weight:bold;font-size:24px; text-transform:uppercase;}
.med-heading {.large-heading; font-size:18px; }

10.\$font-stack: Helvetica, sans-serif; \$primary-color: #333;
body {font: 100% \$font-stack; color: \$primary-color; }

Question 2

1. How does the browser display the outputs of following HTML and CSS code segments?

[2x5=10 Marks]

a. `<html> <head>
 <style type="text/css">
 .pa1{Border-style:double;
 }
 .pa2{Border-style:dashed;
 }
 </style> </head> <body>
 <p class="pa1">Colombo

 <div class="pa2">Colombo

 Colombo</div>

 Colombo
 </p>
</body> </html>`

b. `<html><head>
 <html> <head> <style>
 div p {
 border: medium solid;}
</style> </head> <body>
<div>
 <p>Colombo</p>
 <p>Kandy</p>
 <p>Galle</p>
</div>
<p>Nugegoda</p>
<p>Rathnapura</p>
</body> </html>`

c. `<html> <head> <style>
 div > p {
 border: medium solid;}
</style> </head> <body>
<div>
 <p>Colombo</p>
 <p>Kandy</p>
 <p>Galle</p>
<p>Nugegoda.</p>
<p>Rathnapura</p></div>
</body> </html>`

```
d. <html> <head> <style> .....
    [class^="abc"] { .....
    Border-style:double; .....
    } .....
</style> </head> <body> .....
<h1>Colombo</h1> .....
<div class="abcfirst">UOC</div> .....
<div class="abcsecond">UOC</div> .....
<div class="abc-start">UOC</div> .....
<div class="end-abc">UOC</div> .....
<p class="my">Paragraph Text</p> .....
</body> </html> .....
```

e.

[illegible]

2. How does the browser display the outputs of following PHP code segments?

[2x6=12 Marks]

a. <?php
define("x", "5");
\$x=\$x+10;
echo x;
?>

.....
.....
.....

b. <?php
function zz(& \$x)
{ \$x=\$x+5; }
\$x=10; zz(\$x);
echo \$x;
?>

.....
.....
.....

c. <?php
\$color=array("red","yellow","white");
\$x=in_array("black",\$color);
if(\$x==0) echo "good bye";
if(\$x==1) echo "Hello";
?>

.....
.....
.....

d. <?php
function DescSort(\$val1,\$val2)
{
 if (\$val1['marks'] == \$val2['marks']) return 0;
 return (\$val1['marks'] < \$val2['marks']) ? 1 : -1;
}
\$arr = array(
 array("Name"=>"YASIRU", "marks"=>22),
 array("Name"=>"NIMAL", "marks"=>87),
 array("Name"=>"PIYAL", "marks"=>87),
);
usort(\$arr,'DescSort');
print_r("Output is : ");
print_r(\$arr);
?>

.....
.....
.....

e. <?php

```
$arr =array(5 => 1, 12 => 2);  
$arr[] = 56;  
$arr["x"] = 42;  
echo var_dump($arr);  
?>
```

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f. <?php

```
$a = true;  
$b = false;  
$clear_cache = $a || $b;  
var_dump($clear_cache);  
?>
```

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3. Indicate whether the following configurations originate from the Apache or PHP configuration files in the provided spaces to the right.

No	Settings	Apache or PHP
(i)	ServerRoot	
(ii)	DocumentRoot	
(iii)	upload_max_filesize = 2M	
(iv)	LoadModule php5_module	
(v)	PHPIniDir	
(vi)	display_errors	

[1/2 x 6 = 3 Marks]

Question 3

You are tasked with managing a database for a book catalog system. The database includes tables for books, authors, categories, and their relationships. Authors can write multiple books, and books can belong to multiple categories. Based on the given tables, answer the following questions.

Books (books)

book_id	title
1	Harry Potter and the Sorcerer's Stone
2	The Da Vinci Code
3	To Kill a Mockingbird

Authors (authors)

author_id	author_name
1	J.K. Rowling
2	Dan Brown
3	Harper Lee

Categories (categories)

category_id	category_name
1	Fantasy
2	Mystery
3	Classic Fiction

Books - Authors (book_author)

book_id	author_id
1	1
2	2
3	3

Books - Categories (book_category)

book_id	category_id
1	1
2	2
3	3

1. Give the SQL query to create the books, authors, and book_category tables with the appropriate structure and foreign key constraints.

[6 Marks]

This image shows a full page of white paper designed for handwriting practice. It features 18 evenly spaced horizontal rows. Each row is defined by two parallel dotted lines, creating a series of uniform channels for letter height and placement. The lines extend across the entire width of the page, providing a guide for consistent letter formation. There are no margins, text, or other markings on the paper.

2. Suppose the title of the book "The Great Gatsby" needs to be changed to "Great Gatsby." Write an SQL query to update the title of this book.

[3 Marks]

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- [3 Marks]

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- [3 Marks]

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- [10 Marks]

[illegible]

Question 04

1. CodeIgniter is a PHP framework based on Model-View-Controller architecture. Briefly explain the MVC architecture.

[06 marks]

Model:

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View:

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Controller:

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.....

2. Briefly explain the importance of the following components in the CodeIgniter framework.

[08 marks]

- a. index.php

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- b. Routing module

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- c. Security module

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- d. Cache

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3. Assume that the following model defined inside your UserModel.php file and answer the following questions.

```
<?php
namespace App\Models;
use CodeIgniter\Model;
class UserModel extends Model
{
    protected $table = 'users';
    protected $primarykey = 'id';
    protected $allowedFields = ['name', 'email'];
}
```

- a. Complete the following `index()` function code in the `UserController` file to get all users from the `users` table and pass data to the `view_users.php` view file. Assume the above `UserModel.php` file is imported into `UserController.php`. Write the missing code within the given boxes.

[04 marks]

```
public function index() {
    $usermodel = 
    $data['users'] = $usermodel->findAll();
    return 
}
```

- b. Complete the following code to print the user details as a table in the `index.php` view file. Hint: Use a `foreach` loop to print each row of the table. Write the missing code within the given boxes.

[5 marks]

```
<table border="1">
    <tr>
        <th>ID</th>
        <th>Name</th>
        <th>Email</th>
    </tr>
    
    <tr>
        <td>  </td>
        <td>  </td>
        <td>  </td>
    </tr>
    
</table>
```

4. Add a route in the `routes.php` file to call the `UserController`'s `index()` function when the user enters the URL as `"localhost/"`.

[2 marks]

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