

# Preview Test: INFS3202 Web Information Systems Semester One Final Examination 2021

## Test Information

**Description** Undertaking this online examination deems your commitment to UQ's academic integrity pledge as summarised in the following declaration:

*"I certify that I have completed this examination in an honest, fair and trustworthy manner, that my submitted answers are entirely my own work, and that I have neither given nor received any unauthorised assistance on this examination".*

**Instructions** There are total 45 marks and you need to answer all questions in the Blackboard Test.

**Timed Test** This test has a time limit of 2 hours and 10 minutes. This test will save and be submitted automatically when the time expires.

Warnings appear when **half the time, 5 minutes, 1 minute, and 30 seconds** remain.

*[The timer does not appear when previewing this test]*

**Multiple Attempts** Not allowed. This test can only be taken once.

**Force Completion** This test can be saved and resumed at any point until the time has expired. The timer will continue to run if you leave the test.

Your answers are saved automatically.

### QUESTION 1

0.5 points

Save Answer

What does PHP stand for since PHP3?

- ☐ Professional Hypertext Processor
- ☐ Personal Hypertext Processor
- ☐ Private Home Page
- ☐ PHP: Hypertext Preprocessor

### QUESTION 2

0.5 points

Save Answer

In PHP, single quotes ( ' ' ) are used for characters and double quotes ( " " ) are used for strings:

- ☐ True
- ☐ False

### QUESTION 3

0.5 points

Save Answer

Which one of the following codes can set cookie expiration time into one hour in CodeIgniter?

- ☐ setcookie("admin", "Tom", 3600);
- ☐ set\_cookie("admin", "Tom", time()+3600);
- ☐ setcookie("admin", "Tom", time()+3600);
- ☐ set\_cookie("admin", "Tom", 3600);

### QUESTION 4

0.5 points

Save Answer

Given a block of PHP scripts below, what is its output?

```
=====
line 1: <?php
line 2: $count = 1;
line 3: $count .= $count;
line 4: echo $count + $count;
line 5: ?>
=====
```

- ☐ 22
- ☐ 4
- ☐ 1111
- ☐ Error

### QUESTION 5

0.5 points

Save Answer

Given a block of PHP scripts below, if it is accessed 25 times during a client's session, how many times is line 6 executed for this client?  
Note that the numbers on the left have been added as a reference to line numbers and are not part of the code.

```
=====
line 1: if( !isset($_SESSION['count']) )
line 2: {
line 3:     $_SESSION['count'] = 0;
line 4:     $_SESSION['name'] = "0 time";
line 5: }
line 6: $_SESSION['count']++;
=====
```

- ☐ 0 time
- ☐ 1 time
- ☐ 24 times
- ☐ 25 times

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**QUESTION 6****0.5 points**[Save Answer](#)

PHP variable names are case sensitive.

- ☐ True
  - ☐ False
- 

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**QUESTION 7****0.5 points**[Save Answer](#)

AJAX is a server-side programming language.

- ☐ True
  - ☐ False
- 

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**QUESTION 8****0.5 points**[Save Answer](#)

In CodeIgniter, which one of the following methods is used to clear the current session (for example, during a logout)?

- ☐ session\_destroy()
  - ☐ session\_kill()
  - ☐ session\_remove()
  - ☐ session\_delete()
- 

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**QUESTION 9****0.5 points**[Save Answer](#)

A session variable can be of any data type or object.

- ☐ True
  - ☐ False
- 

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**QUESTION 10****0.5 points**[Save Answer](#)

What is the correct way to add a comment in PHP?

- ☐ <!--...-->
  - ☐ \\*...\\*
  - ☐ /\*...\*/
  - ☐ <comment>...</comment>
- 

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**QUESTION 11****0.5 points**[Save Answer](#)

Which one of the following is a Server-Side programming language?

- ☐ jQuery
  - ☐ AJAX
  - ☐ HTML
  - ☐ PHP
-

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**QUESTION 12****0.5 points**[Save Answer](#)

What is the correct syntax for referring to an external script called "xxx.js"?

- ☐ <script src="xxx.js">
  - ☐ <script href="xxx.js">
  - ☐ <link src="xxx.js">
  - ☐ <link href="xxx.js">
- 

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**QUESTION 13****0.5 points**[Save Answer](#)

What is the correct way to get information from a form that is submitted using the "post" method?

- ☐ \$this->input->post('some\_data');
  - ☐ \$post('some\_data');
  - ☐ \$this->input->post['some\_data'];
  - ☐ \$POST['some\_data']
- 

---

**QUESTION 14****0.5 points**[Save Answer](#)

Which one of the following is representing the business logic in CodeIgniter?

- ☐ Model
  - ☐ View
  - ☐ Controller
  - ☐ Helper
- 

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**QUESTION 15****0.5 points**[Save Answer](#)

Which one of the following directories contains configuration files in Linux?

- ☐ /dev/
  - ☐ /etc/
  - ☐ /bin/
  - ☐ /root/
-

---

**QUESTION 16****0.5 points**[Save Answer](#)

Which command is used to remove files in Linux?

- ☐ rm
  - ☐ remove
  - ☐ erase
  - ☐ delete
- 

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**QUESTION 17****0.5 points**[Save Answer](#)

Which one of the following components is the core of the Linux system?

- ☐ Shell
  - ☐ Kernel
  - ☐ Core
  - ☐ Command
- 

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**QUESTION 18****0.5 points**[Save Answer](#)

In PHP, the Superglobals are built-in variables that are always available in all scopes. Which one of the following **is not** one of the Superglobals variables?

- ☐ \$GLOBALS
  - ☐ \$\_SESSION
  - ☐ \$\_REQUEST
  - ☐ \$\_CONFIG
- 

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**QUESTION 19****0.5 points**[Save Answer](#)

In the CodeIgniter, which one of the following functions can get browser cookies?

- ☐ get\_cookie()
  - ☐ list\_cookie()
  - ☐ echo\_cookie()
  - ☐ set\_cookie()
-

### QUESTION 20

0.5 points

Save Answer

In the CodeIgniter, which of the following code can be used for loading a view?

- ☐ \$this->load->view('view\_name')
- ☐ \$load->this->view('view\_name')
- ☐ \$load->view->this('view\_name')
- ☐ \$this->view->load('view\_name')

### QUESTION 21

0.5 points

Save Answer

Which one of the following **is not** a requirement of web security?

- ☐ Confidentiality
- ☐ Complexity
- ☐ Authentication
- ☐ Non-Repudiation

### QUESTION 22

0.5 points

Save Answer

Is the block of codes below a "well formed" XML document?

```
=====
<?xml version="1.0"?>
<to>Tony</to>
<from>Jani</from>
<heading>Reminder</heading>
<body>Don't forget to submit your assignment on Friday!</body>
=====
```

- ☐ True
- ☐ False

### QUESTION 23

0.5 points

Save Answer

Which one of the following data types **is not** supported by JSON?

- ☐ date
- ☐ Object
- ☐ Array
- ☐ string

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**QUESTION 24****0.5 points**[Save Answer](#)

What are the two main structures that compose JSON?

- ☐ Arrays and Objects
  - ☐ Keys and Values
  - ☐ Class and Objects
  - ☐ None of above
- 

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**QUESTION 25****0.5 points**[Save Answer](#)

In JavaScript, which one of the following is the correct way to convert text into a JavaScript object?

- ☐ JSON.parse('{}');
  - ☐ JSON.parse(null);
  - ☐ JSON.parse();
  - ☐ JSON.parse('[]');
- 

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**QUESTION 26****0.5 points**[Save Answer](#)

Which one of the following statements about the NoSQL database is correct?

- ☐ NoSQL is a database that is an enhanced form of RDBMS.
  - ☐ NoSQL is a database that is built with enhancements to DBMS.
  - ☐ NoSQL is a database that is built on ways and means other than tables and columns.
  - ☐ All above
- 

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**QUESTION 27****0.5 points**[Save Answer](#)

Which one of the following commands can be used for inserting a record (document) into MongoDB?

- ☐ database.collection.insert (document)
  - ☐ database.table.insert (document)
  - ☐ db.collection.insert (document)
  - ☐ db.table.insert (document)
-

---

**QUESTION 28****0.5 points**[Save Answer](#)

Which one of the following keys can be used for decrypting a message?

- ☐ Both Private key and Public key
  - ☐ Private key
  - ☐ Public key
  - ☐ Personal key
- 

---

**QUESTION 29****0.5 points**[Save Answer](#)

Taking a secret message and reproducing the original plain text is known as?

- ☐ Caesar Cipher
  - ☐ Encryption
  - ☐ Cipher Text
  - ☐ Decryption
- 

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**QUESTION 30****0.5 points**[Save Answer](#)

In RSA,  $\Phi(n) = \underline{\hspace{2cm}}$  in terms of p and q.

- ☐  $(p)/(q)$
  - ☐  $(p)(q)$
  - ☐  $(p-1)(q-1)$
  - ☐  $(p+1)(q+1)$
- 

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**QUESTION 31****0.5 points**[Save Answer](#)

Which one of the following codes is the correct ways to construct a function in PHP?

- ☐ `function myFunction()`
  - ☐ `myFunction()`
  - ☐ `static void myFunction()`
  - ☐ `def myFunction()`
-



### QUESTION 32

0.5 points

Save Answer

Given a piece of PHP code below, if it is accessed 25 time, what is the final output of \$num?

=====

**line 1:** \$num = 1;

**line 2:** for (\$x = 0; \$x <= 3; \$x++) {

**line 3:**   \$num+=\$num;

**line 4:** }

**line 5:** echo \$num;

=====

- ☐ 1
- ☐ 4
- ☐ 8
- ☐ 16

### QUESTION 33

0.5 points

Save Answer

PHP allows you to send emails directly from within a script.

- ☐ True
- ☐ False

### QUESTION 34

0.5 points

Save Answer

Which one of the following statements is true?

- ☐ All the statements are true
- ☐ All XML elements must be in lower case
- ☐ All XML elements must be properly closed
- ☐ All XML documents must have a schema

### QUESTION 35

0.5 points

Save Answer

XML can replace HTML while using html tags (such as <h1></h1> <p></p>, etc ).

- ☐ False
- ☐ True

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**QUESTION 36****0.5 points**[Save Answer](#)

Which one of the following is correct about PHP?

- ☐ PHP can access cookies variables and set cookies.
  - ☐ Using PHP, you can restrict users to access some pages of your website.
  - ☐ It can encrypt data.
  - ☐ All of the above.
- 

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**QUESTION 37****0.5 points**[Save Answer](#)

Which one of the following commands can generate a new page in Ionic CLI?

- ☐ ionic generate page
  - ☐ ionic generate newpage
  - ☐ npx generate page
  - ☐ npx generate newpage
- 

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**QUESTION 38****0.5 points**[Save Answer](#)

When sending passwords or other sensitive information in a form, which one of the following methods should be recommended?

- ☐ POST
  - ☐ GET
- 

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**QUESTION 39****0.5 points**[Save Answer](#)

Which one of the following is a hybrid app development framework?

- ☐ Flask
  - ☐ Xcode
  - ☐ Ionic
  - ☐ Heroku
-

### QUESTION 40

**0.5 points**

Save Answer

Which of the following techniques **does not** belong to Web Mining?

- ☐ Web structural mining
- ☐ Web usage mining
- ☐ Web content mining
- ☐ Web user mining

### QUESTION 41

**1.5 points**

Save Answer

Three-tier architecture is widely used in web information system development. Please provide the name of each tier and its main functionality.

For the toolbar, press ALT+F10 (PC) or ALT+FN+F10 (Mac).

[illegible]

### QUESTION 42

**2 points**

Save Answer

Compared to the traditional one-tier architecture, what are the main advantages of the three-tier architecture? Please give explanations in two aspects.

For the toolbar, press ALT+F10 (PC) or ALT+FN+F10 (Mac).

A screenshot of the TinyMCE editor's top toolbar. The toolbar contains various icons for text editing and formatting, organized into several groups. From left to right, the groups include: basic text formatting (bold B, italic I, underline U, strikethrough ABC), paragraph manipulation (Paragraph dropdown, Paragraph icon, Paragraph style dropdown), font settings (font size 14px, font family Arial), alignment (left-align, center-align, right-align, justified-align), bullet points and lists (bulleted list, numbered list, decrease indent, increase indent), links (link, unlink, link icon, unlink icon), undo and redo (undo, redo), and other utilities (checklist, source code, fullscreen, help). Each group is separated by a vertical line.

### QUESTION 43

**1.5 points**

Save Answer

The TCP/IP Protocol architectural model has four layers, where Link Layer is the bottom one. Write down the names of the other three layers in top-down order.

### # The name of the layer

2:

3:

#### 4: Link Layer

### QUESTION 44

**2.5 points**

Save Answer

Given an XML document "cinema.xml", answer the following question.

=====

<cinema>

<address>Indooroopilly</address>

&lt;name&gt;Event&lt;/name&gt;

```
<movies>
```

<movie>

<moviename year="2021"> &lt;Fast & Furious 9 &gt;</moviename>

< director> Justin Lin</ director>

&lt;/movie&gt;

<movie>

<moviename year="2021"> &lt;Snake Eyes: G.I. Joe Origins&gt;</moviename>

<director> Robert Schwentke</director>

&lt;/movie&gt;

<movie>

&lt;moviename year = "2017"&gt; &amp;lt;The Invisible Man&amp;gt;&lt;/moviename&gt;

<director>Leigh Whannell</director>

&lt;/movie&gt;

&lt;/movies&gt;

&lt;/cinema&gt;

=====

Write the corresponding JSON object of "cinema.xml" in JavaScript.

For the toolbar, press ALT+F10 (PC) or ALT+FN+F10 (Mac).

The image shows the TinyMCE editor toolbar with the following elements:

- Text formatting:** Bold (B), Italic (I), Underline (U), Strikethrough (ABC), Paragraph (dropdown), Arial (dropdown), 14px (font size dropdown), Bulleted list (list icon), Numbered list (list icon), Text color (A with color dropdown), Background color (eraser icon with color dropdown), Text decoration (Tx).
- Link and media:** Link icon, Unlink icon, Insert link icon, Search icon.
- Alignment and indentation:** Undo (curved arrow left), Redo (curved arrow right), Left align (three horizontal lines), Center align (three horizontal lines), Right align (three horizontal lines), Justify (three horizontal lines), Decrease indent (less-than sign), Increase indent (greater-than sign), X<sup>2</sup> (superscript), X<sub>2</sub> (subscript).
- Other:** Link icon, Unlink icon, Insert link icon, Search icon, Horizontal line, Table border, ABC (dropdown), Checkmark, Paragraph symbol (¶), Double quote, Omega symbol, Smiley face, Bookmark.

### QUESTION 45

**3 points**

Save Answer

What are the four different types of NoSQL databases? For each type, provide a brief description with one representative database system (e.g. MongoDB).

For the toolbar, press ALT+F10 (PC) or ALT+FN+F10 (Mac).

[illegible]

### QUESTION 46

**1.5 points**

Save Answer

List three most common web application attacks with brief explanations.

For the toolbar, press ALT+F10 (PC) or ALT+FN+F10 (Mac).

[illegible]

### QUESTION 47

**3 points**

Save Answer

Encrypt the message  $m$  by using RSA Encryption Scheme ( $c = m^e \bmod n$ ). Generate 4 possible encryption keys with  $p = 5$  and  $q = 7$ . Show your steps .

For the toolbar, press ALT+F10 (PC) or ALT+FN+F10 (Mac).

[illegible]

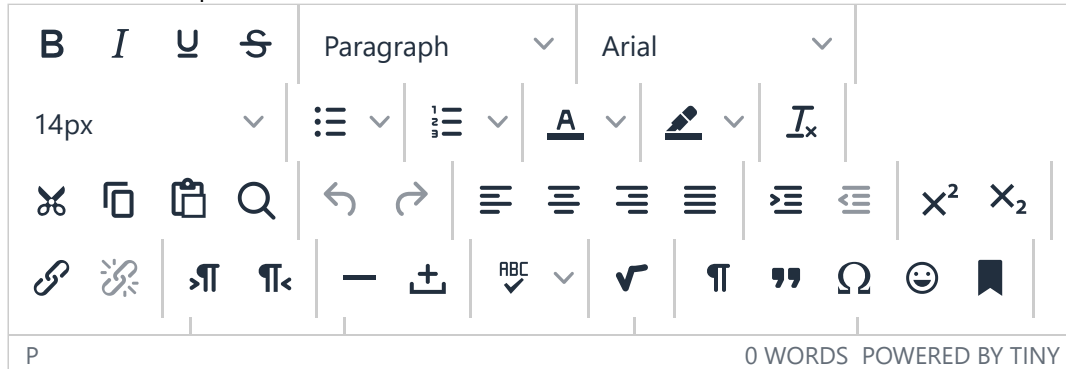
### QUESTION 48

2 points

Save Answer

Assume the message **m** contains a numerical value 2. Use the simplest key generated in the question above to encrypt the message **m** to ciphertext **c**. Show your steps.

For the toolbar, press ALT+F10 (PC) or ALT+FN+F10 (Mac).



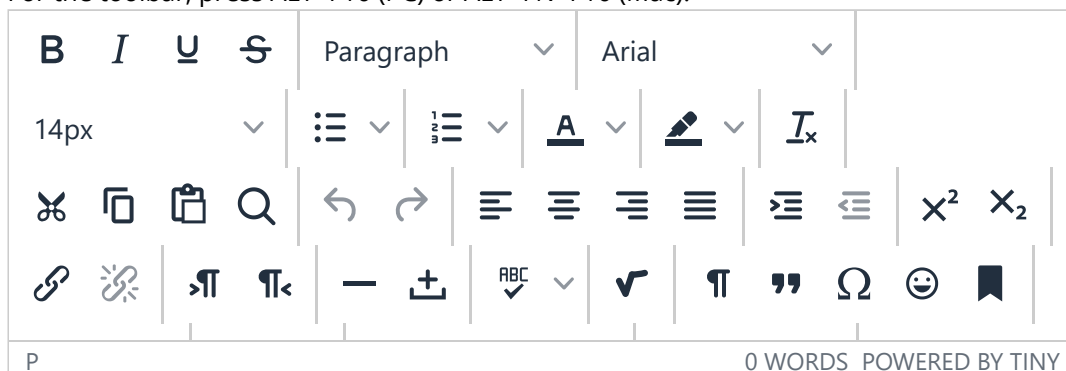
### QUESTION 49

3 points

Save Answer

Apart from native, what are the other two approaches for mobile applications development? List the advantages and disadvantages of all three different approaches.

For the toolbar, press ALT+F10 (PC) or ALT+FN+F10 (Mac).



## QUESTION 50

5 points

Save Answer

In PHP CodeIgniter, an application is divided into three interconnected parts: Model, View, and Controller. Filling in the blanks in the provided Model, View and Controller PHP files to implement a login form. For simplicity, only the major functions in each file are presented.

### Users table

**id** username password

1 infs3202 7202

2 infs7202 3202

### login.php (view)

```
=====
<!-- complete the login page below using form_open() function -->
<?php echo form_open(base_url().'
    </div>
<!-- form close -->

```

### Auth.php (controller)

```
=====
<?php defined('BASEPATH') OR exit('No direct script access allowed');
class auth extends CI_Controller {
    public function login()
    {
        $this->load->view('template/header');
 ; //load model
        $username = $this->input->post('username'); //retrieve
username from login form
        $password = $this->input->post('password'); //retrieve password
from login form
        if (  ) //check if the username and the
password are correct using model
        {
            $user_data = array('logged_in' => true); //initial session variable
 ; //create session
            redirect('main'); // direct user home page
        }else{
            $this->load->view('login'); //if username password incorrect,
direct user back to login page
        }
        $this->load->view('template/footer');
```





