

## Preview Test: INFS3202 Semester One End-of-semester Examination 2022

### 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** You need to answer all of the questions in the Blackboard Test.

If you believe there is missing or incorrect information impacting your ability to answer any particular question, please state this when answering that question.

You must do all your working 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

PHP scripts are surrounded by delimiters, which one of the following is used by PHP?

- ☐ <php ... /php>
- ☐ <php> ... </php>
- ☐ <?php> ... <?php>
- ☐ <?php ... ?>

### QUESTION 3

0.5 points

Save Answer

In PHP, double quotes ( " " ) are used for strings?

- ☐ True
- ☐ False

### QUESTION 4

0.5 points

Save Answer

Which one of the following codes can set any data in session using CodeIgniter? Where **key** is the key of an array, and **value** is the value that needs to be set.

- ☐ \$SESSION['key'] = value;
- ☐ \$\_SESSION['key'] = value;
- ☐ \$SESSION[key] = value;
- ☐ \$\_SESSION[key] = value;

### QUESTION 5

0.5 points

Save Answer

Which one of the following lines of code 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 6

0.5 points

Save Answer

Given a block of PHP scripts below, what is its output? 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:** <?php

**line 2:** \$count = 1;

**line 3:** \$count .= \$count + \$count;;

**line 4:** echo \$count . \$count;

**line 5:** ?>

=====

- ☐ 1212
- ☐ 11
- ☐ 22
- ☐ Error

### QUESTION 7

0.5 points

Save Answer

Given a block of PHP scripts below, if it is accessed 20 times during a client's session, what is the output of the code? 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:** session\_start();

**line 2:** if( !isset(\$\_SESSION['count']) )

**line 3:** {

**line 4:**   \$\_SESSION['count'] = 0;

**line 5:**   \$\_SESSION['name'] = "0 time";

**line 6:** }

**line 7:** \$\_SESSION['count']++;

=====

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

### QUESTION 8

0.5 points

Save Answer

Given a piece of PHP code below, if it is accessed 25 times, 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 9

0.5 points

Save Answer

Which one of the following is the correct way to declare a PHP variable?

- ☐ \$nine = 9
- ☐ \$9 = 9;
- ☐ \$\_nine = 9;
- ☐ \$9\_nine = 9;

### QUESTION 10

0.5 points

Save Answer

What does AJAX stand for?

- ☐ Application of Java Script AND XML
- ☐ Asynchronous Java Script AND XML
- ☐ Application of Java Script AND HTML
- ☐ Asynchronous of Java Script AND HTML

### QUESTION 11

0.5 points

Save Answer

In CodeIgniter, which one of the following methods is used to remove some session data?

- ☐ session\_destroy()
- ☐ unset\_userdata()
- ☐ session\_remove()
- ☐ session\_delete()

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

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

- ☐ True
  - ☐ False
- 

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

How do you get information from a form that is submitted using the "post" method in CodeIgniter?

- ☐ `$this->input->post('some_data');`
  - ☐ `$post('some_data');`
  - ☐ `$this->input->post['some_data'];`
  - ☐ `$POST['some_data']`
- 

---

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

Which one of the following is 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 commands is used to copy a file within a host in Linux?

- ☐ `copy`
  - ☐ `cp`
  - ☐ `ccp`
  - ☐ `scp`
-

---

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

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

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

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

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

- ☐ \$\_GLOBALS
  - ☐ \$\_SESSION
  - ☐ \$\_POST
  - ☐ \$\_REQUEST
- 

---

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

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

- ☐ delete\_cookie('name')
  - ☐ set\_cookie('name', time());
  - ☐ remove\_cookie('name')
  - ☐ unset\_cookie('name')
- 

---

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

In the CodeIgniter, which one of the following lines of 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 20

0.5 points

Save Answer

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

- ☐ Confidentiality
  - ☐ Integrity
  - ☐ Authentication
  - ☐ Authorization
- 

---

### QUESTION 21

0.5 points

Save Answer

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

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

- ☐ True
  - ☐ False
- 

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### QUESTION 22

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 23

0.5 points

Save Answer

What are the two main structures that compose JSON?

- ☐ Arrays and Objects
  - ☐ Index and values
  - ☐ Class and Objects
  - ☐ None of above
-

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**QUESTION 24****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 25****0.5 points**[Save Answer](#)

What is a NoSQL database?

- ☐ 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 26****0.5 points**[Save Answer](#)

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

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

---

**QUESTION 27****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
-



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

Which one of the following statements is correct?

- ☐ RSA(Rivest-Shamir-Adleman) is an Asymmetric encryption technique that uses two same keys to perform the encryption and decryption.
  - ☐ RSA(Rivest-Shamir-Adleman) is an Asymmetric encryption technique that uses two public keys to perform the encryption and decryption.
  - ☐ RSA(Rivest-Shamir-Adleman) is an Asymmetric encryption technique that uses two private keys to perform the encryption and decryption.
  - ☐ None of the above.
- 

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

Which one of the following lines of code is the correct way to construct a function in PHP?

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

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

PHP allows you to send emails directly from a script.

- ☐ True
  - ☐ False
- 

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**QUESTION 31****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 32****0.5 points**

Save Answer

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

- ☐ False
- ☐ True

**QUESTION 33****0.5 points**

Save Answer

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

- ☐ POST
- ☐ GET

**QUESTION 34****0.5 points**

Save Answer

Which of the following functions can create an HTML form opening tag for file uploading in CodeIgniter?

- ☐ form\_open()
- ☐ open\_form()
- ☐ open\_form\_multipart()
- ☐ form\_open\_multipart()

**QUESTION 35****0.5 points**

Save Answer

Which of the following is used to convert a Javascript object to JSON string?

- ☐ JSON.stringify()
- ☐ JSON.parse()
- ☐ JSON.convertToString()
- ☐ JSON.converter()

**QUESTION 36****0.5 points**

Save Answer

In CodeIgniter, the default controller of an application can be set in the configuration file. Which of the following is the configuration file?

- ☐ config.php
- ☐ configuration.php
- ☐ autoload.php
- ☐ system.php

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

Which command is used to remove files in Linux?

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

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

In password protection, what is the name of a random string of data used to modify a password hash called?

- ☐ Hash Key
  - ☐ Salt
  - ☐ RandomString
  - ☐ Stringify
- 

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**QUESTION 39****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 40****0.5 points**[Save Answer](#)

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

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

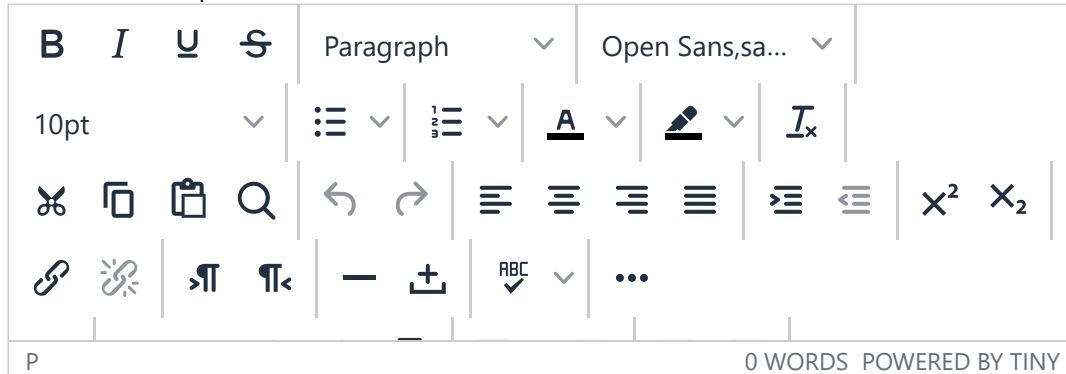
### QUESTION 41

2 points

Save Answer

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

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



### QUESTION 42

4 points

Save Answer

Provide the full name of the following terms with a brief description of their usage.

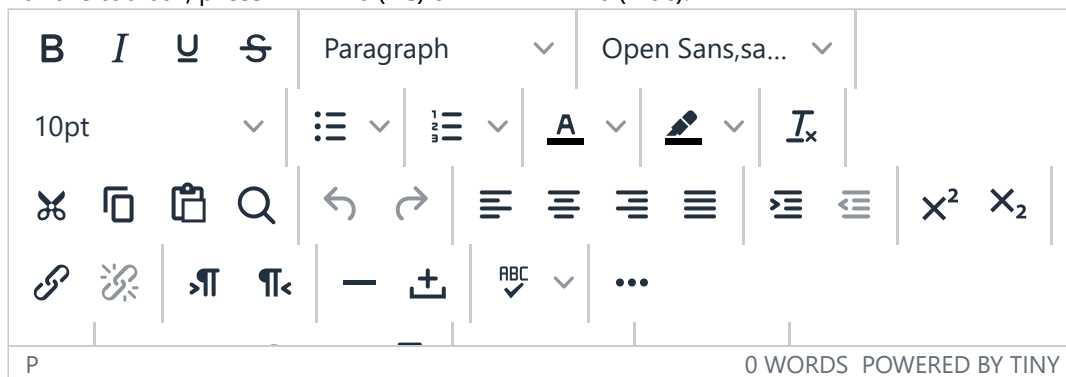
HTML

HTTP

XML

XSS

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



**QUESTION 43****2 points**[Save Answer](#)

Protocols are used for Internet communication. TCP and UDP are the two most important protocols designed for transport layer.  
Briefly explain the key difference(s) between TCP and UDP.

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**QUESTION 44****3 points**[Save Answer](#)

Protocols are used for Internet communication. TCP and UDP are the two most important protocols designed for transport layer.  
Give two examples to illustrate in which kind of applications UDP is preferred.

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

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**A** ▾



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**QUESTION 45****2 points**[Save Answer](#)

Provide the full names of the following protocols and indicate which layers they belong to

Protocol	Full name	The name of the layer
HTTP	<input type="text"/>	<input type="text"/>
IP	<input type="text"/>	<input type="text"/>
TCP	<input type="text"/>	<input type="text"/>
UDP	<input type="text"/>	<input type="text"/>

### QUESTION 46

**3 points**

Save Answer

Given a JSON object "cinema", answer the following question.

```
cinema={"address":"Indooroopilly",
"name":"Event",
"movies":{
"movie":[
{
"moviename":"<Fast & Furious 9>";
"director":"Justin Lin"
},
{
"moviename":"<nake Eyes: G.I. Joe Origins>",
"director":"Robert Schwentke"
},
{
"moviename":"<The Invisible Man>",
"director":"Leigh Whannell"
}
]
}
```

Write the corresponding XML file of "cinema"

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

[illegible]

### QUESTION 47

**3 points**

Save Answer

With Ajax, web information systems (web applications) can send and retrieve data from a server asynchronously without interfering with the display and behaviour of the existing page. Briefly describe the major advantages of using AJAX in Web design.

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

[illegible]

**QUESTION 48****2 points**[Save Answer](#)

Consider a query " \$query = 'SELECT \* FROM table WHERE name = \$name' and password = \$password; ". Use the query as an example to illustrate how SQL injection can be achieved.

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

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												$x^2$	$x_2$
				—		ABC	▼	...					
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**QUESTION 49****2 points**[Save Answer](#)

Given  $p = 3$  and  $q = 11$ , use the RSA encryption algorithm to generate a valid RSA encryption keys. Show your steps.

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

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												$x^2$	$x_2$
				—		ABC	▼	...					
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### QUESTION 50

**2 points**

Save Answer

From the encryption keys that you have generated in the question above, select one of the keys to decrypt ciphertext  $c$ , where  $c = 29$ . Show your steps.

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

[illegible]



## QUESTION 51

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 ( ) ; ?>
    <h2 class="text-center">Login</h2>
    <div class="form-group">
        <input type="text" class="form-control"
placeholder="Username" required="required" name="username">
    </div>
    <div class="form-group">
        <input type="password" class="form-control"
placeholder="Password" required="required" name="password">
    </div>
    <div class="form-group">
        <!-- submit button for the login form -->
        ( )
    </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
            $this->session->set_userdata($user_data); //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');
```



