



Beijing-Dublin International College



SEMESTER 1 FINAL EXAMINATION - (2018/2019)

School of Computer Science

COMP3019J Web Application Development

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Time Allowed: 120 minutes

Instructions for Candidates:

Answer all questions concisely and to the point

BJUT Student ID:_____ **UCD Student ID:**_____

I have read and clearly understand the Examination Rules of both Beijing University of Technology and University College Dublin. I am aware of the Punishment for Violating the Rules of Beijing University of Technology and/or University College Dublin. I hereby promise to abide by the relevant rules and regulations by not giving or receiving any help during the exam. If caught violating the rules, I accept the punishment thereof.

Honesty Pledge:_____ **(Signature)**

Instructions for Invigilators

No rough-work paper is to be provided for candidates.

Short Questions

- a. Give a one-line description for what each of the following CSS combination selectors will select:

- `div span`
- `div > span`
- `a ~ span`
- `a + span`

(4)

- b. Give a CSS rule that will set the background color of the following div to red.

```
1 <div>This element's background is red</div>
```

(2)

- c. What does AJAX stand for? Give the jQuery ajax code for asynchronously loading a list of books from a PHP file called `getBooks.php` into an element with an ID called `BookList`

(4)

- d. In Javascript, what is the difference between `==` and `===` operators?

(2)

- e. Using jQuery, give a line of code to change **all** the links in a webpage to `http://www.ucd.ie/bdic/`

(4)

- f. Consider the PHP code given below. Write one line of PHP that will return an array which is the intersection of the three arrays.

```
1 <?php
2 $array_one = [ 'one', 'two', 'three' ];
3 $array_two = [ 'one', 'two', 'two', 'three' ];
4 $array_three = [ 'one', 'two' ];
5 ?>
```

(2)

- g. Consider the PHP code given below. Write one line of PHP that will merge the three arrays.

```
1 <?php
2 $array_one = [ 'one', 'two', 'three' ];
3 $array_two = [ 'one', 'two', 'two', 'three' ];
4 $array_three = [ 'one', 'two' ];
5 ?>
```

(2)

- h. Consider the following snippet of PHP:

```
$fruits = "apple,pear,grapefruit,cherry";
```

Give one line of PHP to return an array like below:

```
['apple', 'pear,grapefruit,cherry']
```

 (2)

- i. Consider the following snippet of PHP:

```
$json_string = '"name": "Jeff", "age": 20, "colors": ["red", "blue"]';
```

Give two lines of PHP to produce an output like below:

```
Hello Jeff, You are 20 years old
```

 (4)

- j. In HTML, what tag defines the header cell of a table? (2)

- k. Consider the following snippet of HTML:

```
<p id="paragraph"></p>
```

Give one line of Javascript to change the text content of the paragraph to `hello world`.

(2)

- l. In Javascript, what is the difference between using `test` and `exec` to look for patterns using regular expressions? (4)

- m. Consider the following code:

```
var arr = ['a','b','c','d'];
```

Give a line of code that will add the string `'end'` to the end of `arr` (1)

- n. Write code in PHP to check if a cookie is set for Tom. Your code should return `true` if the cookie is set, and `false` if there is no cookie set. (2)

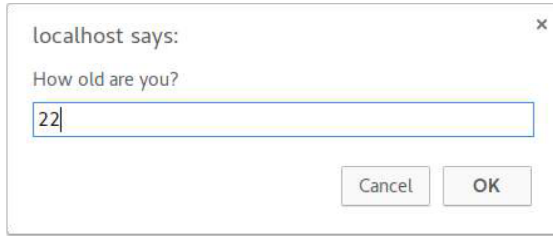
- o. Give two reasons why forms should be submitted using the POST method instead of the GET method? Give an example of a common web-requirement that can only be done using the POST method. (3)

- p. What will the following code print?

```
console.log( 1 + '2' + '2');
```

(2)

- q. Write Javascript code to show the following prompt(along with the default text) and writes the user's input to the console



(4)

(Sub-total for the section: 46)

Program Comprehension

For each of the following questions, you are required to either write some code, or read the given code and answer questions about it. Be very precise in both cases.

Program 1

- a. Consider the HTML code given below.

```
1 <ul>
2   <li>Mango</li>
3   <li>Book</li>
4 </ul>
```

Using the `each` function from jQuery, write code that when executed will produce the output:

```
0:  Mango
1:  Book
```

(5)

Program 2

- b. Given the HTML code below, give Javascript code that will remove items from the drop-down list, when the user clicks on the button

```
<!DOCTYPE html>
<html>
<head>
<style type="text/css">
body {margin: 30px;}
</style>
<meta charset=utf-8 />
<title>Remove items from a dropdown list</title>
</head><body><form>
<select id="colorSelect">
<option>Red</option>
<option>Green</option>
<option>White</option>
<option>Black</option>
</select>
<input type="button" onclick="removecolor()" value="Select and Remove">
</form></body></html>
```

(4)

Program 3

- c. Write a function in Javascript that takes a comma-separated string as a parameter, removes whitespace from both ends, replaces a comma followed by a space with a single dash and returns the string.

Sample Input: " 1, 2, 3, 4, 5 "

Sample Output: "1-2-3-4-5"

(4)

Program 4

- d. Consider the variable declared below in PHP:

```
$foo = "Hello World";
```

Give one line of PHP code that will change `foo` to be "Hello Whirled"

(3)

Program 5

- e. Consider the variable declared below in PHP:

```
$foo = array (1,2,3);
```

Give one line of PHP code that will add 4 to the *beginning* of the array, without changing the order of the existing elements.

(3)

Program 6

- f. Write a function in PHP that uses regular expressions to parse an HTML string. The function should take one parameter, which is an HTML anchor element and return an

array that contains the original string, the url and link text.

Sample Parameter:

```
1 $str = "<a href=\"http://example.org\">My Link</a>";
```

Sample Ouput:

```
1 Array
2 (
3     [0] => <a href="http://example.org">My Link</a>
4     [1] => http://example.org
5     [2] => My Link
6 )
```

(5)

(Sub-total for the section: 24)

Total marks for the paper: 70