**COMP 3540 Advanced Web Design and Programming**

Final Exam – Winter 2017

Student Name: Student Number:

**Note. Anything unnecessary in answers would cause negative marks.**

1. (9 marks) Fill in the blanks in each of the following.
2. A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is defined as the set of local variables in a function that are kept after the function has returned.
3. A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is a web application or web site that fits on a single web page with the goal of providing a user experience similar to that of a desktop application.
4. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ object is used to exchange data with a server behind the scenes. This means that it is possible to update parts of a web page, without reloading the whole page. (Note that you should answer with the correct name of the object, which is used in JavaScript code.)
5. The most common use of \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is to read data from a web server, and display the data in a web page.
6. The \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ attribute is a Boolean attribute. When present, it specifies that the user is allowed to enter more than one value in the <input> element.
7. A \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ is a sequence of characters that define a search pattern. Usually this pattern is used for string searching/matching.
8. With \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, web applications can store data locally within the user’s browser. The storage limit is far larger and information is never transferred to the server.
9. The type attribute value, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, is used to upload a file or files.
10. The superglobal array, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, is an associative array of items uploaded to the current script. This array is used for file uploading.
11. (2 marks) List the 3 events and the attribute that are used for drag-and-drop in HTML5. The attribute is used to say that an element can be dragged.
12. (3 marks) Write the JSON string that includes the following names and ages

* John Tiger, 28
* K MI3, 65

1. (3 marks) Complete the code that when the user clicks the button of id=‘add’, reads inputs and adds them into the object ‘user’ as a property and its value.

Property: <input id='property' type='text'>

Value: <input id='value' type='text'>

<button id='add' type='button'></button>

<script>

var user = {name: 'John', age='20'};

$(\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_).\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(function() {

});

</script>

1. (3 marks) What is the output?

var foo = 1; bar = 1;

function test() {

foo = 2;

var bar = 2;

(function(x) {

foo = x; bar += x;

document.writeln(foo + ', ' + bar);

})(3);

document.writeln(foo + ', ' + bar);

}

test();

document.writeln(foo + ', ' + bar);

1. (4 marks) Write the code that counts the number of properties in the object ‘obj’ and displays the number into the <div> of id='msg'.
2. (8 marks) Write the JavaScript code that

* sends the command of ‘PostQuestion’ and the question of ‘How big is the universe?’ to the server script ‘guru.php’,
* receives data from the above server-side script, and
* displays the data into the <div> of id='msg'.

You should use AJAX.

1. (4 marks) Complete the code that

* retrieves data from a DB table,
* stores the data into a linear array,
* converts the data into a JSON string, and
* sends the JSON string back to the client.

$result = mysqli\_query($comm, 'select \* from Users');

$users = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_; // empty array

$i = 0;

while($row = mysqli\_fetch\_assoc($result)) {

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_;

$i++;

}

$js = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_($users);

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_ $js;

1. (3 marks) The DB table, ‘Users’, has two columns – username and password. Complete the code that inserts new user information into the table. The code should insert an encrypted password.

$username = 'jtiger';

$password = 'topsecrete';

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_;

$sql = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_;

mysqli\_query($comm, $sql);

1. (4 marks) Write the PHP regular expression for passwords that have the following requirements.

* At least 6 characters
* At least 1 digit
* At least 1 upper case letter

1. (8 marks) Complete the code that
   * reads a value from LocalStorage,
   * convert the value to a linear array
   * reads a memo with the title from the two inputs whose ids are ‘title’ and ‘memo’,
   * saves them into an object,
   * saves the object into the linear array, and
   * saves the array in LocalStorage with the name ‘db-memo’.

You should store only string values in the LocalStorage.

var db = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_('db-memo');

db = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(db);

var new\_memo = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_; // empty object

var title = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_;

var memo = \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_;

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_;

db.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(new\_memo);

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_;

\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_.\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_(\_\_\_\_\_\_\_\_\_\_\_\_\_\_\_, \_\_\_\_\_\_\_\_\_\_\_\_\_\_\_);