Name: Solution Key **Date:** _____

CSCI 215: Website Programming – Spring 2014 – Exam 1

Multiple Choice Questions [4 Points Each]

(Q1) Which of the following is an impact of JavaScript being *weakly typed*?

a. The value of a variable can be changed.
b. Variables do not need to be declared with a data type.
c. Better performance.
d. Easier to debug.

(Q2) JavaScript and Java are related languages.

a. True
b. False

(Q3) JavaScript runs in the browser which means it's a _____ language.

a. Client-side
b. Server-side
c. Compiled
d. Procedural

(Q4) JavaScript is a case-insensitive language.

a. True
b. False

(Q5) Which of the following are *relational* operators?

a. &&
b. ||
c. !=
d. ==
e. Both A and B
f. Both C and D

(Q6) The _____ method can be used to output information to the browser's console window.

a. alert()
b. console.log()
c. error()
d. All of the above
e. None of the above

(Q7) Which keyword is used to declare a variable?

a. var
b. variable
c. int
d. define

(Q8) Which of the following is a *logical* operator?

a. &&
b. ||
c. !
d. All of the above
e. None of the above

(Q9) A variable would be global if it is _____.

a. Defined outside of any function using var keyword.
b. Defined within a function using the var keyword.
c. A function parameter.
d. All of the above.

(Q10) If a global variable and a local variable have the same name, _____.

a. The local variable will be assigned the value of the global variable.
b. The local variable will take precedence over the global variable.
c. The global variable will be assigned the value of the local variable.
d. None of the above.

(Q11) Which of the following is a common cause of errors?

a. Imbalance of quotation marks, parentheses, or brackets.
b. Using incorrect variable or function names.
c. Using reserved words for variable names.
d. All of the above.

(Q12) Which of the following are considered to be JavaScript data types?

a. Number
b. String
c. Boolean
d. All of the above
e. None of the above

Short Answer Questions

(Q13) [2-Points each] Describe the purpose of each layer listed below. Additionally, identify which language (i.e. HTML, CSS, or JavaScript) theses layers are typically implemented in.

- Presentation
  How the content is styled, i.e. colors, fonts, position (box model), etc. Cascading Style Sheet (CSS) is used in this layer.

- Structural
  The content (e.g., text, tables, paragraphs, forms, graphics, buttons) and how it is laid out. HTML is used in this layer.

- Behavioral
  How the webpage functions with (or without) user input or interaction. JavaScript is used in this layer.

(Q14)[1-Point each] Are the JavaScript variables listed below declared correctly? If not, please correct all the identified mistakes.

- `var 6_$=42;`
  Correction: var _$=42;
  Variable names cannot begin with a number.

- `var I = new Array()[1 2 3];`
  Correction: var I = [1, 2, 3];
  Incorrect initialization of array.

- `var $$s = true;`
  OK

- `var while = 1 ++ 2;`
  Correction: var test = 1 + 2;
  while is a keyword, and ++ cannot be used for addition.

- `var Func tion = 'the walking dead';`
  Correction: var Function = 'the walking dead';
  Variable names cannot contain a space.

(Q15) [10-Points] For the simple JavaScript program provided below, describe (in plain English) what each line of code is doing. To receive full credit please be as detailed as possible, and please use the correct terminology.

```
1. var lbs = 125;

2. var kg = convertlbsTokg( lbs );

3. console.log( lbs );

4. console.log( kg );

5. function convertlbsTokg( x ) {

     return x*0.453;

   }
```

1. ***A new variable named lbs is created and initialized to 125***
2. ***A new variable named kg is created and initialized to the value returned by the conertlbsTokg function call where lbs as an argument.***
3. ***The value stored in the variable named lbs is printed in the console.***
4. ***The value stored in the variable named kg is printed in the console.***
5. ***A new function named convertlbsTokg is defined. This function defines one parameter named x. The value in x is multiplied by 0.453 and then returned by this function.***

```
var x = 2;

var u = test()*x;

function test() {

      var y=2;
      return y*x;

}

console.log( x );
console.log( y );
console.log( u );
```

(Q16) [3-Points each] For the simple JavaScript program above, please answer the following questions:

- Will the program run without any errors? Please fully explain your answer.

  No, the variable y is a local variable that cannot be used outside of the test function.

- If there are errors, where will they occur? Please be precise.

  Error will occur at:

  console.log(y);

JavaScript Coding Questions

(Q17) [10-Points] Given the for-loop below, covert to a while-loop that produces the same output result. To receive full credit your code must be syntactically correct.

```
for ( var j=10; j>=1; j-- ) {
      console.log( j );
}
```

```
var j=10;
while ( j >= 1 ) {
      console.log( j );
      j--;
}
```

(Q18) [5-Points] Identify and correct the errors in the simple JavaScript program provided below. To receive full credit your code must be syntactically correct.

```
var a=1, b=2, c=2;
if ( a = b ) {
      console.log( 'a equals b');
} else if ( a = c ) {
      console.log( 'a equals c');
} else ( a != a ) {
      console.log('Not sure ...');
}
```

```
var a=1, b=2, c=2;
if ( a == b ) {
      console.log( 'a equals b');
} else if ( a == c ) {
      console.log( 'a equals c');
} else {
      console.log('Not sure ...');
}
```

(Q19) [5-Points] For the nested **if-else** JavaScript program provided below, convert to an **if-else if-else** that produces the same output result. To receive full credit your code must be syntactically correct.

```
var a=1, b=2, c=2;

if ( a == b ) {

      console.log( 'a equals b' );

} else {

      if ( b == c ) {

            console.log( 'b equals c' );

      } else {

            console.log( 'must be something else!' );

      }

}
```

var a=1, b=2, c=2;

if (a == b) {

***   console.log('a equals b');***

} else if (b == c) {

***   console.log('b equals c');***

} else {

***   console.log('must be something else!');***

}

(Q20) [5-Points] Given the array below, write a for-loop that will retrieve the value of each element and print to the console. To receive full credit your code must be syntactically correct.

```
var myArray = [ 't', 'e', 's', 't', 1, 2, 3 ];
```

```
for ( var i=0; i<myArray.length; i++ ) {
      console.log( myArray[i] );
}
```