

## Quiz 5 solution

Write your name on the exam. Write something for every question. Students who do not write something for everything lose out over students who write down wild guesses. You will get some points if you attempt a solution but nothing for a blank sheet of paper. Write something down, even wild guesses. Problems take long to read but can be answered concisely.

Problem	Maximum	Score
1	12	
2	8	
Total	20	

## Problem 1 – JavaScript event handlers

JavaScript event handlers are invoked by the browser in response to user actions that affect various elements of the web page.

a) (4 points) Briefly describe the two main methods one can use to associate a handler with a certain event for a given HTML element.

*One can use the HTML attribute that has the same name as the event, or in JavaScript assign to the property (that has the same name as the event) of the DOM object representing the element.*

b) (4 points) Give the names and very brief descriptions for four events that can have JavaScript handlers associated with them.

*“onmouseover” is triggered when mouse moves over the HTML element*

*“onmouseout” is triggered when the mouse moves away from over the HTML element*

*“onmousedown” is triggered when the mouse button is pressed while the mouse is over the HTML element*

*“onsubmit” is triggered when a form is submitted*

c) (4 points) Describe two possible uses of client-side event handlers (what functionality is achieved by using them).

*Client-side event handlers can be used to trigger the validation of user input. They can also be used to trigger actions such as animations, initiation of a postback, changes to the DOM, etc. in response to various user actions.*

## Problem 2 – JavaScript variables

(8 points) The script below is embedded in the body of a web page. What “output” will it produce?

```
<script type="text/javascript">
var x='ab';
var y=12;
function writeOut(x){document.write(x+'<br />');}
function f1(){
    var x='cd';    // This x is local to f1
    writeOut(x);  // This will output cd, not ab
    writeOut(y);  // The global y is used
}
function f2(){
    z=y+34;       // Creates a global variable called z
    y=56;         // The global y changes its value to 56
    writeOut(z);  // Output 46
    writeOut(y);  // Output 56
}
function f3(){
    if(x=='cd'){  // The global variable x is still 'ab'
        var z=78; // z is local to the function
    } else {
        z='90';   // Local variable z holds string '90'
    }
    writeOut(y+z); // String concatenation produces 5690
}
f1();
f2();
f3();
y=y+z;           // 56+46=102
writeOut(y);     // Output 102
writeOut(z);     // Output 46
</script>
```

cd  
12  
46  
56  
5690  
102  
46