



**WINTER – 19 EXAMINATIONS**

**Subject Name: Client Side Scripting**

**Model Answer**

**Subject Code: 22519**

**Important Instructions to examiners:**

- 1) The answers should be examined by key words and not as word-to-word as given in the model answer scheme.
- 2) The model answer and the answer written by candidate may vary but the examiner may try to assess the understanding level of the candidate.
- 3) The language errors such as grammatical, spelling errors should not be given more Importance (Not applicable for subject English and Communication Skills).
- 4) While assessing figures, examiner may give credit for principal components indicated in the figure. The figures drawn by candidate and model answer may vary. The examiner may give credit for any equivalent figure drawn.
- 5) Credits may be given step wise for numerical problems. In some cases, the assumed constant values may vary and there may be some difference in the candidate's answers and model answer.
- 6) In case of some questions credit may be given by judgement on part of examiner of relevant answer based on candidate's understanding.
- 7) For programming language papers, credit may be given to any other program based on equivalent concept.

Q. No.	Sub Q. N.	Answer	Marking Scheme
1		<b>Attempt any FIVE of the following :</b>	<b>10 M</b>
	<b>a</b>	<b>List any four features of Java script.</b>	<b>2 M</b>
	<b>Ans</b>	<b>Features of Java script</b> <ol style="list-style-type: none"> <li>1. JavaScript is a object-based scripting language.</li> <li>2. Giving the user more control over the browser.</li> <li>3. It Handling dates and time.</li> <li>4. It Detecting the user's browser and OS,</li> <li>5. It is light weighted.</li> <li>6. Client – Side Technology</li> <li>7. JavaScript is a scripting language and it is not java.</li> <li>8. JavaScript is interpreter based scripting language.</li> <li>9. JavaScript is case sensitive.</li> <li>10. JavaScript is object based language as it provides predefined objects.</li> <li>11. Every statement in javascript must be terminated with semicolon (;).</li> <li>12. Most of the javascript control statements syntax is same as syntax of control statements in C language.</li> <li>13. An important part of JavaScript is the ability to create new functions within scripts. Declare a function in JavaScript using <b>function</b> keyword.</li> </ol>	<b>Any four features : ½ M each</b>
	<b>b</b>	<b>List the comparison operators in Java script.</b>	<b>2 M</b>



	<p><b>Ans</b> <b>Comparison operators in Java script</b></p> <table border="1" data-bbox="363 310 850 688"> <tr><td>==</td><td>Equal to</td></tr> <tr><td>!=</td><td>Not equal to</td></tr> <tr><td>&gt;</td><td>Greater than</td></tr> <tr><td>&lt;</td><td>Less than</td></tr> <tr><td>&gt;=</td><td>Greater than or equal to</td></tr> <tr><td>&lt;=</td><td>Less than or equal to</td></tr> <tr><td>===</td><td>Equal value and equal type</td></tr> <tr><td>!==</td><td>not equal value or not equal type</td></tr> </table>	==	Equal to	!=	Not equal to	>	Greater than	<	Less than	>=	Greater than or equal to	<=	Less than or equal to	===	Equal value and equal type	!==	not equal value or not equal type	<p><b>Any 4 operators :1/2 M each</b></p>
==	Equal to																	
!=	Not equal to																	
>	Greater than																	
<	Less than																	
>=	Greater than or equal to																	
<=	Less than or equal to																	
===	Equal value and equal type																	
!==	not equal value or not equal type																	
	<p><b>c</b> <b>Write a Java script to create person object with properties firstname, lastname, age, eyecolor, delete eyecolor property and display remaining properties of person object.</b></p>	<p><b>2 M</b></p>																
	<p><b>Ans</b></p> <pre data-bbox="363 802 1406 1696"> &lt;html&gt; &lt;body&gt; &lt;script&gt; var person = {   firstname:"John",   lastname:"Doe",   age:50,   eyecolor:"blue" }; delete person.eyecolor; //delete person eyecolor document.write("After delete "+ person.firstname +" "+ person.lastname +" "+ +person.age +" "+ person.eyecolor); &lt;/script&gt; &lt;/body&gt; &lt;/html&gt; </pre>	<p><b>Create person object : 1M</b></p> <p><b>Delete and display properties : 1M</b></p>																
	<p><b>d</b> <b>Write a Java script that initializes an array called flowers with the names of 3 flowers. The script then displays array elements.</b></p>	<p><b>2 M</b></p>																
	<p><b>Ans</b></p> <pre data-bbox="363 1768 1406 1900"> &lt;html&gt; &lt;head&gt; </pre>	<p><b>Initialization of array : 1M,</b></p>																



	<pre>&lt;title&gt;Display Array Elements&lt;/title&gt;  &lt;/head&gt;  &lt;body&gt;  &lt;script&gt;      var flowers = new Array();      flowers[0] = 'Rose ';      flowers[1] = 'Mogra';      flowers[2] = 'Hibiscus';      for (var i = 0; i &lt; flowers.length; i++)      {          document.write(flowers[i] + '&lt;br&gt;');      }  &lt;/script&gt;  &lt;/body&gt;  &lt;/html&gt;</pre>	<b>Display of array elements : 1M</b>
<b>e</b>	<b>Write Javascript to call function from HTML.</b>	<b>2 M</b>
<b>Ans</b>	<pre>&lt;html&gt;  &lt;head&gt;  &lt;title&gt;Calling function from HTML&lt;/title&gt;  &lt;script&gt;      function welcome()      {          alert("Welcome students");      }      function goodbye()      {          alert("Bye");</pre>	<b>Function declaration : 1M,</b>  <b>Function call from HTML: 1M</b>  <b>(Any other example allowed)</b>



	<pre>         }     &lt;/script&gt; &lt;/head&gt; &lt;body onload="welcome()" onunload="goodbye()"&gt; &lt;/body&gt; &lt;/html&gt;     </pre>	
<b>f</b>	<b>Write a Javascript to design a form to accept values for user ID &amp; password.</b>	<b>2 M</b>
<b>Ans</b>	<pre> &lt;html&gt; &lt;body&gt; &lt;form name="login"&gt;     Enter Username&lt;input type="text" name="userid"&gt;&lt;br&gt;     Enter Password&lt;input type="password" name="pswrd"&gt;     &lt;input type="button" onclick="display()" value="Display"&gt; &lt;/form&gt; &lt;script language="javascript"&gt; function display() {     document.write("User ID "+ login.userid.value + "Password :     "+login.pswrd.value); } &lt;/script&gt; &lt;/body&gt; &lt;/html&gt;     </pre>	<p><b>Correct syntax: 1M,</b></p> <p><b>Correct logic: 1M</b></p>
<b>g</b>	<b>State any two properties and methods of location object.</b>	<b>2 M</b>
<b>Ans</b>	<p><b>Properties of location object:</b></p> <ol style="list-style-type: none"> <li>1. hash</li> <li>2. host</li> <li>3. hostname</li> <li>4. href</li> <li>5. origin</li> </ol>	<p><b>Any 2 properties : ½ M each</b></p>



		6. pathname 7. port 8. protocol 9. search  <b>Methods of location object:</b>  1. assign( ) 2. reload( ) 3. replace( )	<b>Any 2 methods : ½ M each</b>
<b>2</b>		<b>Attempt any THREE of the following :</b>	<b>12 M</b>
	<b>a</b>	<b>Explain getter and setter properties in Java script with suitable example.</b>	<b>4 M</b>
	<b>Ans</b>	<b>Property getters and setters</b> 1. The accessor properties. They are essentially functions that work on getting and setting a value. 2. Accessor properties are represented by “getter” and “setter” methods. In an object literal they are denoted by get and set. <pre> let obj = {   get propName() {     // getter, the code executed on getting obj.propName   },    set propName(value) {     // setter, the code executed on setting obj.propName = value   } }; </pre> 3. An object property is a name, a value and a set of attributes. The value may be replaced by one or two methods, known as setter and a getter. 4. When program queries the value of an accessor property, Javascript invoke getter method(passing no arguments). The return value of this method become the value of the property access expression. 5. When program sets the value of an accessor property. Javascript invoke the setter method, passing the value of right-hand side of assignment. This method is responsible for setting the property value. <ul style="list-style-type: none"> <li>• If property has both getter and a setter method, it is read/write property.</li> <li>• If property has only a getter method , it is read-only property.</li> <li>• If property has only a setter method , it is a write-only property.</li> </ul> 6. getter works when obj.propName is read, the setter – when it is assigned.  <b>Example:</b> <html>	<b>Explanation : 2M</b>



	<pre> &lt;head&gt; &lt;title&gt;Functions&lt;/title&gt; &lt;body&gt; &lt;script language="Javascript"&gt; var myCar = {     /* Data properties */     defColor: "blue",     defMake: "Toyota",      /* Accessor properties (getters) */     get color() {         return this.defColor;     },     get make() {         return this.defMake;     },      /* Accessor properties (setters) */     set color(newColor) {         this.defColor = newColor;     },     set make(newMake) {         this.defMake = newMake;     } }; document.write("Car color:" + myCar.color + " Car Make: "+myCar.make) /* Calling the setter accessor properties */ myCar.color = "red"; myCar.make = "Audi"; /* Checking the new values with the getter accessor properties */ document.write("&lt;p&gt;Car color:" + myCar.color); // red document.write(" Car Make: "+myCar.make); //Audi &lt;/script&gt; &lt;/head&gt; &lt;/body&gt; &lt;/html&gt; </pre>	<p><b>Example :</b> <b>2M</b></p> <p><b>(Any other example can be considered)</b></p>
<b>b</b>	<b>Explain prompt() and confirm() method of Java script with syntax and example.</b>	<b>4 M</b>
<b>Ans</b>	<p><b>prompt()</b></p> <p>The prompt () method displays a dialog box that prompts the visitor for input. The prompt () method returns the input value if the user clicks "OK". If the user clicks "cancel" the method returns null.</p> <p><b>Syntax: window.prompt (text, defaultText)</b></p>	<p><b>For Each explanation/ syntax : 1M,</b></p> <p><b>Example : 1M</b></p>



	<p><b>Example:</b></p> <pre>&lt;html&gt;   &lt;script type="text/javascript"&gt;     function msg(){       var v= prompt("Who are you?");       alert("I am "+v);     }   &lt;/script&gt;   &lt;input type="button" value="click" onclick="msg()"/&gt; &lt;/html&gt;</pre> <p><b>confirm()</b> It displays the confirm dialog box. It has message with ok and cancel buttons. Returns Boolean indicating which button was pressed</p> <p><b>Syntax:</b> <b>window.confirm("sometext");</b></p> <p><b>Example :</b></p> <pre>&lt;html&gt; &lt;script type="text/javascript"&gt; function msg(){   var v= confirm("Are u sure?");   if(v==true){     alert("ok");   }   else{     alert("cancel");   } } &lt;/script&gt; &lt;input type="button" value="delete record" onclick="msg()"/&gt; &lt;/html&gt;</pre>	<p>(Any other example can be considered)</p>
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<b>c</b>	<p>Write a Java script program which computes, the average marks of the following students then, this average is used to determine the corresponding grade.</p> <table border="1" data-bbox="363 359 959 585"><thead><tr><th>Student Name</th><th>Marks</th></tr></thead><tbody><tr><td>Sumit</td><td>80</td></tr><tr><td>Kalpesh</td><td>77</td></tr><tr><td>Amit</td><td>88</td></tr><tr><td>Tejas</td><td>93</td></tr><tr><td>Abhishek</td><td>65</td></tr></tbody></table> <p>The grades are computed as follows :</p> <table border="1" data-bbox="363 659 959 888"><thead><tr><th>Range</th><th>Grade</th></tr></thead><tbody><tr><td>&lt;60</td><td>E</td></tr><tr><td>&lt;70</td><td>D</td></tr><tr><td>&lt;80</td><td>C</td></tr><tr><td>&lt;90</td><td>B</td></tr><tr><td>&lt;100</td><td>A</td></tr></tbody></table>	Student Name	Marks	Sumit	80	Kalpesh	77	Amit	88	Tejas	93	Abhishek	65	Range	Grade	<60	E	<70	D	<80	C	<90	B	<100	A	<b>4 M</b>
Student Name	Marks																									
Sumit	80																									
Kalpesh	77																									
Amit	88																									
Tejas	93																									
Abhishek	65																									
Range	Grade																									
<60	E																									
<70	D																									
<80	C																									
<90	B																									
<100	A																									
<b>Ans</b>	<pre>&lt;html&gt; &lt;head&gt; &lt;title&gt;Compute the average marks and grade&lt;/title&gt; &lt;/head&gt; &lt;body&gt;   &lt;script&gt; var students = [['Sumit', 80], ['Kalpesh', 77], ['Amit', 88], ['Tejas', 93], ['Abhishek', 65]];    var Avgmarks = 0;    for (var i=0; i &lt; students.length; i++) {     Avgmarks += students[i][1];   }    var avg = (Avgmarks/students.length);    document.write("Average grade: " + (Avgmarks)/students.length);    document.write("&lt;br&gt;");    if (avg &lt; 60){</pre>	<b>Correct logic : 2M,</b> <b>Correct Syntax: 2M</b> <b>(any other logic can be considered)</b>																								





	<pre>document.write("Grade : E"); } else if (avg &lt; 70) {     document.write("Grade : D"); } else if (avg &lt; 80) {     document.write("Grade : C"); } else if (avg &lt; 90) {     document.write("Grade : B"); } else if (avg &lt; 100) {     document.write("Grade : A"); } &lt;/script&gt; &lt;/body&gt; &lt;/html&gt;</pre> <p><b>Output (Optional)</b></p> <p>Average grade: 80.6 Grade : B</p>	
<b>d</b>	<b>Write the use of charAt() and indexOf() with syntax and example.</b>	<b>4 M</b>
<b>Ans</b>	<p><b>charAt()</b></p> <p>The charAt() method requires one argument i.e is the index of the character that you want to copy.</p> <p><b>Syntax:</b></p> <pre>var SingleCharacter = NameOfStringObject.charAt(index);</pre> <p><b>Example:</b></p> <pre>var FirstName = 'Bob';</pre>	<p><b>Each syntax : 1M,</b></p> <p><b>Example : 1M</b></p>



		<pre>var Character = FirstName.charAt(0); //o/p B</pre> <p><b>indexOf()</b></p> <p>The indexOf() method returns the index of the character passed to it as an argument.</p> <p>If the character is not in the string, this method returns -1.</p> <p><b>Syntax:</b></p> <pre>var indexValue = string.indexOf('character');</pre> <p><b>Example:</b></p> <pre>var FirstName = 'Bob'; var IndexValue = FirstName.indexOf('o'); //o/p index as 1</pre>									
<b>3</b>		<b>Attempt any THREE of the following :</b>	<b>12 M</b>								
	<b>a</b>	<b>Differentiate between concat() and join() methods of array object.</b>	<b>4 M</b>								
	<b>Ans</b>	<table border="1"> <thead> <tr> <th>concat()</th> <th>join()</th> </tr> </thead> <tbody> <tr> <td>Array elements can be combined by using concat() method of Array object.</td> <td>Array elements can be combined by using join() method of Array object.</td> </tr> <tr> <td>The concat() method separates each value with a comma.</td> <td>The join() method also uses a comma to separate values, but you can specify a character other than a comma to separate values.</td> </tr> <tr> <td>           Eg:  <pre>var str = cars.concat()</pre> <p>The value of str is 'BMW, Audi, Maruti'</p> </td> <td>           Eg:  <pre>var str = cars.join('')</pre> <p>The value of str in this case is 'BMW Audi Maruti'</p> </td> </tr> </tbody> </table>	concat()	join()	Array elements can be combined by using concat() method of Array object.	Array elements can be combined by using join() method of Array object.	The concat() method separates each value with a comma.	The join() method also uses a comma to separate values, but you can specify a character other than a comma to separate values.	Eg: <pre>var str = cars.concat()</pre> <p>The value of str is 'BMW, Audi, Maruti'</p>	Eg: <pre>var str = cars.join('')</pre> <p>The value of str in this case is 'BMW Audi Maruti'</p>	
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Eg: <pre>var str = cars.concat()</pre> <p>The value of str is 'BMW, Audi, Maruti'</p>	Eg: <pre>var str = cars.join('')</pre> <p>The value of str in this case is 'BMW Audi Maruti'</p>										
	<b>b</b>	<b>Write a JavaScript that will replace following specified value with another value in string.</b>	<b>4 M</b>								



	<b>String = "I will fail"</b> <b>Replace "fail" by "pass"</b>	
<b>Ans</b>	<pre>&lt;html&gt; &lt;head&gt; &lt;body&gt; &lt;script&gt; var myStr = 'I will fail'; var newStr = myStr.replace(fail, "pass"); document.write(newStr); &lt;/script&gt; &lt;/body&gt; &lt;/head&gt; &lt;/html&gt;</pre>	<b>Correct program with any proper logic: 4 M</b>
<b>c</b>	<b>Write a Java Script code to display 5 elements of array in sorted order.</b>	<b>4 M</b>
<b>Ans</b>	<pre>&lt;html&gt; &lt;head&gt; &lt;title&gt; Array&lt;/title&gt; &lt;/head&gt; &lt;body&gt; &lt;script&gt; var arr1 = [ "Red", "red", "Blue", "Green"] document.write("Before sorting arr1=" + arr1); document.write("&lt;br&gt;After sorting arr1=" + arr1.sort()); &lt;/script&gt; &lt;/body&gt; &lt;/html&gt;</pre>	<b>Correct program with any proper logic : 4 M</b>
<b>d</b>	<b>Explain open() method of window object with syntax and example.</b>	<b>4 M</b>



	<p><b>Ans</b> The open() method of window object is used to open a new window and loads the document specified by a given URL.</p> <p>MyWindow = window.open()</p> <p>The open() method returns a reference to the new window, which is assigned to the MyWindow variable. You then use this reference any time that you want to do something with the window while your JavaScript runs.</p> <p>A window has many properties, such as its width, height, content, and name—to mention a few. You set these attributes when you create the window by passing them as parameters to the open() method:</p> <ul style="list-style-type: none"> <li>• The first parameter is the full or relative URL of the web page that will appear in the new window.</li> <li>• The second parameter is the name that you assign to the window.</li> <li>• The third parameter is a string that contains the style of the window.</li> </ul> <p>We want to open a new window that has a height and a width of 250 pixels and displays an advertisement that is an image. All other styles are turned off.</p> <p><b>Syntax:</b></p> <p>MyWindow = window.open('webpage1.html', 'myAdWin', 'status=0, toolbar=0, location=0, menubar=0, directories=0, resizable=0, height=250, width=250')</p> <p><b>Example:</b></p> <pre>&lt;html &gt; &lt;head&gt; &lt;title&gt;Open New Window&lt;/title&gt; &lt;script &gt; function OpenNewWindow() { MyWindow = window.open('webpage1.html', 'myAdWin', 'status=0, toolbar=0, location=0, menubar=0, directories=0, resizable=0, height=250, width=250') } &lt;/script&gt; &lt;/head&gt; &lt;body&gt; &lt;FORM action=" " method="post"&gt; &lt;INPUT name="OpenWindow" value="Open Window" type="button" onclick="OpenNewWindow()"/&gt; &lt;/FORM&gt; &lt;/body&gt; &lt;/html&gt;</pre>	<p><b>Explanation:</b> 1 M</p> <p><b>syntax:</b> 1 M</p> <p><b>Example:</b> 2 M</p> <p>(Any other example can be considered)</p>
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4		<b>Attempt any THREE of the following :</b>	<b>12 M</b>
	<b>a</b>	<b>Describe regular expression. Explain search () method used in regular expression with suitable example.</b>	<b>4 M</b>
	<b>Ans</b>	<p><b>Regular Expression:</b> A regular expression is very similar to a mathematical expression, except a regular expression tells the browser how to manipulate text rather than numbers by using special symbols as operators.</p> <p><b>Search() method:</b> str.search() method takes a regular expression/pattern as argument and search for the specified regular expression in the string. This method returns the index where the match found.</p> <p><b>Example:</b></p> <pre>&lt;html&gt; &lt;body&gt; &lt;script&gt; function myFunction() {      // input string     var str = "Good Morning!";      // searching string with modifier i     var n = str.search(/Morning/i);      document.write(n + '&lt;br&gt;');      // searching string without modifier i     var n = str.search(/Morning/);      document.write(n); } myFunction(); &lt;/script&gt; &lt;/body&gt; &lt;/html&gt;</pre>	<p><b>Regular Expression: 1 M</b></p> <p><b>search() method: 1 M</b></p> <p><b>Example: 2M</b></p>
	<b>b</b>	<b>List ways of protecting your web page and describe any one of them.</b>	<b>4 M</b>
	<b>Ans</b>	<p><b>Ways of protecting Web Page:</b></p> <ol style="list-style-type: none"><li>1)Hiding your source code</li><li>2)Disabling the right MouseButton</li><li>3) Hiding JavaScript</li><li>4) Concealing E-mail address.</li></ol>	<p><b>List: 1 M</b></p> <p><b>Explanation any one: 3M</b></p>



### 1) Hiding your source code

The source code for your web page—including your JavaScript—is stored in the *cache*, the part of computer memory where the browser stores web pages that were requested by the visitor. A sophisticated visitor can access the cache and thereby gain access to the web page source code.

However, you can place obstacles in the way of a potential peeker. First, you can disable use of the right mouse button on your site so the visitor can't access the View Source menu option on the context menu. This hides both your HTML code and your JavaScript from the visitor.

Nevertheless, the visitor can still use the View menu's Source option to display your source code. In addition, you can store your JavaScript on your web server instead of building it into your web page. The browser calls the JavaScript from the web server when it is needed by your web page.

Using this method, the JavaScript isn't visible to the visitor, even if the visitor views the source code for the web page.

### 2) Disabling the right MouseButton

The following example shows you how to disable the visitor's right mouse button while the browser displays your web page. All the action occurs in the JavaScript that is defined in the <head> tag of the web page.

The JavaScript begins by defining the BreakInDetected() function. This function is called any time the visitor clicks the right mouse button while the web page is displayed. It displays a security violation message in a dialog box whenever a visitor clicks the right mouse button.

The BreakInDetected() function is called if the visitor clicks any button other than the left mouse button.

#### Example:

```
<html>
<head>
<title>Lockout Right Mouse Button</title>
<script language=JavaScript>

function BreakInDetected(){
alert('Security Violation')
return false
}
function NetscapeBrowser(e){
if (document.layers||
document.getElementById&&!document.all){
if (e.which==2||e.which==3){
```



	<pre>BreakInDetected() return false } } } function InternetExploreBrowser(){ if (event.button==2){ BreakInDetected() return false } } if (document.layers){ document.captureEvents(Event.MOUSEDOWN) document.onmousedown=NetscapeBrowser() } else if (document.all&amp;&amp;!document.getElementById){ document.onmousedown=InternetExploreBrowser() } document.oncontextmenu=new Function( "BreakInDetected();return false")  &lt;/script&gt; &lt;/head&gt; &lt;body&gt; &lt;table width="100%" border=0&gt; &lt;tbody&gt; &lt;tr vAlign=top&gt; &lt;td width=50&gt; &lt;a&gt; &lt;img height=92 src="rose.jpg" width=70 border=0 onmouseover="src='rose1.jpg'" onmouseout="src='rose.jpg'"&gt; &lt;/a&gt; &lt;/td&gt; &lt;td&gt; &lt;img height=1 src="" width=10&gt; &lt;/td&gt; &lt;td&gt; &lt;a&gt; &lt;ctypface:Bold&gt;&lt;u&gt; Rose Flower&lt;/U&gt;&lt;/b&gt; &lt;/a&gt; &lt;/font&gt;&lt;font face="arial, helvetica, sans-serif" size=-1&gt;&lt;BR&gt;Rose Flower</pre>	
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```
</td>
</tr>
</tbody>
</table>
</body>
</html>
```

### 3) Hiding JavaScript

You can hide your JavaScript from a visitor by storing it in an external file on your web server. The external file should have the .js file extension. The browser then calls the external file whenever the browser encounters a JavaScript element in the web page. If you look at the source code for the web page, you'll see reference to the external .js file, but you won't see the source code for the JavaScript.

The next example shows how to create and use an external JavaScript file. First you must tell the browser that the content of the JavaScript is located in an external file on the web server rather than built into the web page. You do this by assigning the file name that contains the JavaScripts to the src attribute of the <script> tag, as shown here:

```
<script src="MyJavaScripts.js"
language="Javascript" type="text/javascript">
```

Next, you need to define empty functions for each function that you define in the external JavaScript file.

```
<html >
<head>
<title>Using External JavaScript File</title>
<script src="myJavaScript.js" language="Javascript" type="text/javascript">
```

```
function OpenNewWindow(book) {
}
</script>
</head>
<body>
<tablewidth="100%" border=0>
<tbody>
<tr vAlign=top>
<td width=50>
<a>

</a>
```





	<pre> &lt;/td&gt; &lt;td&gt; &lt;img height=1 src="" width=10&gt; &lt;/td&gt; &lt;td&gt; &lt;a onmouseover="OpenNewWindow(1)" onmouseout="MyWindow.close()"&gt; &lt;b&gt;&lt;u&gt;Rose &lt;/u&gt;&lt;/b&gt; &lt;/a&gt; &lt;br&gt; &lt;a onmouseover="OpenNewWindow(2)" onmouseout="MyWindow.close()"&gt; &lt;b&gt;&lt;u&gt;Sunflower&lt;/u&gt;&lt;/b&gt; &lt;/a&gt; &lt;br&gt; &lt;a onmouseover="OpenNewWindow(3)" onmouseout="MyWindow.close()"&gt; &lt;b&gt;&lt;u&gt;Jasmine &lt;/u&gt;&lt;/b&gt; &lt;/a&gt; &lt;/td&gt; &lt;/tr&gt; &lt;/tbody&gt; &lt;/table&gt; &lt;/body&gt; &lt;/html&gt;  The final step is to create the external JavaScript file. You do this by placing all function definitions into a new file and then saving the file using the .js extension. MyJavaScript.js file:  function OpenNewWindow(book) { if (book== 1) { document.cover.src='rose.jpg' MyWindow = window.open("", 'myAdWin', 'titlebar=0 status=0, toolbar=0, location=0, menubar=0, directories=0, resizable=0, height=50, width=150,left=500,top=400') MyWindow.document.write( 'Rose flower') } if (book== 2) { document.cover.src='sunflower.jpeg' MyWindow = window.open("", 'myAdWin', 'titlebar=0 status=0, toolbar=0, location=0, menubar=0, directories=0, resizable=0, height=50, width=150,left=500,top=500') MyWindow.document.write( 'sunflower flower') } </pre>	
--	--	--



```
if (book== 3)
{
document.cover.src='jasmine.gif'
MyWindow = window.open(", 'myAdWin', 'titlebar=0
status=0, toolbar=0, location=0, menubar=0, directories=0, resizable=0,
height=50,
width=150,left=500,top=600')
MyWindow.document.write( 'Jasmine Flower')
}
}
```

After you create the external JavaScript file, define empty functions for each function that is contained in the external JavaScript file, and reference the external JavaScript file in the src attribute of the <script> tag, you're all set.

#### 4) Concealing E-mail address:

Many of us have endured spam at some point and have probably blamed every merchant we ever patronized for selling our e-mail address to spammers. While e-mail addresses are commodities, it's likely that we ourselves are the culprits who invited spammers to steal our e-mail addresses.

Here's what happens: Some spammers create programs called *bots* that surf the Net looking for e-mail addresses that are embedded into web pages, such as those placed there by developers to enable visitors to contact them. The bots then strip these e-mail addresses from the web page and store them for use in a spam attack. This technique places developers between a rock and a hard place. If they place their e-mail addresses on the web page, they might get slammed by spammers. If they don't display their e-mail addresses, visitors will not be able to get in touch with the developers.

The solution to this common problem is to conceal your e-mail address in the source code of your web page so that bots can't find it but so that it still appears on the web page. Typically, bots identify e-mail addresses in two ways: by the mailto: attribute that tells the browser the e-mail address to use when the visitor wants to respond to the web page, and by the @ sign that is required of all e-mail addresses. Your job is to confuse the bots by using a JavaScript to generate the e-mail address dynamically. However, you'll still need to conceal the e-mail address in your JavaScript, unless the JavaScript is contained in an external JavaScript file, because a bot can easily recognize the mailto: attribute and the @ sign in a JavaScript.

Bots can also easily recognize when an external file is referenced. To conceal an e-mail address, you need to create strings that contain part of the e-mail address and then build a JavaScript that assembles those strings into the e-mail address, which is then written to the web page.

The following example illustrates one of many ways to conceal an e-mail address.



	<p>It also shows you how to write the subject line of the e-mail. We begin by creating four strings:</p> <ul style="list-style-type: none"><li>• The first string contains the addressee and the domain along with symbols &amp;, *, and _ (underscore) to confuse the bot.</li><li>• The second and third strings contain portions of the mailto: attribute name. Remember that the bot is likely looking for mailto:.</li><li>• The fourth string contains the subject line. As you'll recall from your HTML training, you can generate the TO, CC, BCC, subject, and body of an e-mail from within a web page.</li></ul> <p>You then use these four strings to build the e-mail address. This process starts by using the replace() method of the string object to replace the &amp; with the @ sign and the * with a period (.). The underscores are replaced with nothing, which is the same as simply removing the underscores from the string.</p> <p>All the strings are then concatenated and assigned to the variable b, which is then assigned the location attribute of the window object. This calls the e-mail program on the visitor's computer and populates the TO and Subject lines with the strings generated by the JavaScript.</p> <pre>&lt;html&gt; &lt;head&gt; &lt;title&gt;Conceal Email Address&lt;/title&gt; &lt;script&gt; function CreateEmailAddress(){ var x = manish*c_o_m' var y = 'mai' var z = 'lto' var s = '?subject=Customer Inquiry' x = x.replace('&amp;','@') x = x.replace('*','.') x = x.replace('_', '') x = x.replace('_', '') var b = y + z + ':' + x + s window.location=b } --&gt; &lt;/script&gt; &lt;/head&gt; &lt;body&gt; &lt;input type="button" value="Help" onclick="CreateEmailAddress()"&gt; &lt;/body&gt; &lt;/html&gt;</pre>	
--	---	--



	<p><b>c</b> <b>Create a slideshow with the group of three images, also simulate next and previous transition between slides in your Java Script.</b></p>	<p><b>4 M</b></p>
<p><b>Ans</b></p>	<pre>&lt;html&gt; &lt;head&gt; &lt;script&gt; pics = new Array('1.jpg' , '2.jpg' , '3.jpg'); count = 0; function slideshow(status) { if (document.images) { count = count + status; if (count &gt; (pics.length - 1)) { count = 0; } if (count &lt; 0) { count = pics.length - 1; } documet.imag1.src = pics[count]; } } &lt;/script&gt; &lt;/head&gt; &lt;body&gt; &lt;img src="1.jpg" width="200" name="img1"&gt; &lt;br&gt; &lt;input type="button" value="Next" onclick="slideshow(1)"&gt; &lt;input type="button" value="Back" onclick="slideshow(-1)"&gt; &lt;/body&gt; &lt;/html&gt;</pre>	<p><b>Correct program: 4 M</b></p> <p><b>(Any other example can be considered)</b></p>
<p><b>d</b></p>	<p><b>Explain text rollover with suitable example.</b></p>	<p><b>4 M</b></p>
<p><b>Ans</b></p>	<p>You create a rollover for text by using the onmouseover attribute of the &lt;A&gt; tag, which is the <i>anchor</i> tag. You assign the action to the onmouseover attribute the same way as you do with an &lt;IMG&gt; tag.</p> <p>Let's start a rollover project that displays a flower titles. Additional information about a flower can be displayed when the user rolls the mouse cursor over the flower name. In this example, the image of the flower is displayed. However, you could replace the flower image with an advertisement or another message that you want to show about the flower.</p> <pre>&lt;html&gt; &lt;head&gt; &lt;title&gt;Rollover Text&lt;/title&gt;</pre>	<p><b>Explanation: 2 M</b></p> <p><b>Program: 2 M</b></p> <p><b>(Any other example can be considered)</b></p>



	<pre> &lt;/head&gt; &lt;body&gt; &lt;TABLE width="100%" border="0"&gt; &lt;TBODY&gt; &lt;TR vAlign="top"&gt; &lt;TD width="50"&gt; &lt;a&gt; &lt;IMG height="92" src="rose.jpg" width="70" border="0" name="cover"&gt; &lt;/a&gt; &lt;/TD&gt; &lt;TD&gt; &lt;IMG height="1" src="" width="10"&gt; &lt;/TD&gt; &lt;TD&gt; &lt;A onmouseover= "document.cover.src='sunflower.jpg'"&gt; &lt;B&gt;&lt;U&gt;Sunflower&lt;/U&gt;&lt;/B&gt; &lt;/A&gt; &lt;BR&gt; &lt;A onmouseover= "document.cover.src='jasmine.jpg'"&gt; &lt;B&gt;&lt;U&gt;Jasmine&lt;/U&gt;&lt;/B&gt; &lt;/A&gt; &lt;BR&gt; &lt;A onmouseover= "document.cover.src='rose.jpg'"&gt; &lt;B&gt;&lt;U&gt;Rose&lt;/U&gt;&lt;/B&gt; &lt;/A&gt; &lt;/TD&gt; &lt;/TR&gt; &lt;/TBODY&gt; &lt;/TABLE&gt; &lt;/body&gt; &lt;/html&gt; </pre>	
e	<p><b>Write a Java script to modify the status bar using on MouseOver and on MouseOut with links. When the user moves his mouse over the links, it will display “MSBTE” in the status bar. When the user moves his mouse away from the link the status bar will display nothing.</b></p>	4 M
Ans	<pre> &lt;html&gt; &lt;head&gt; &lt;title&gt;JavaScript Status Bar&lt;/title&gt;&lt;/head&gt; &lt;body&gt; &lt;a href=" https://msbte.org.in/" onMouseOver="window.status='MSBTE';return true" onMouseOut="window.status="";return true"&gt; </pre>	Correct program: 4 M



		MSBTE  </a> </body> </html>	
<b>5</b>		<b>Attempt any TWO of the following :</b>	<b>12 M</b>
	<b>a</b>	<b>Write a HTML script which displays 2 radio buttons to the users for fruits and vegetables and 1 option list. When user select fruits radio button option list should present only fruits names to the user &amp; when user select vegetable radio button option list should present only vegetable names to the user.</b>	<b>6 M</b>
	<b>Ans</b>	<pre> &lt;html&gt;   &lt;head&gt;     &lt;title&gt;HTML Form&lt;/title&gt;     &lt;script language="javascript" type="text/javascript"&gt;       function updateList(ElementValue)       {         with(document.forms.myform)         {           if(ElementValue == 1)           {             optionList[0].text="Mango";             optionList[0].value=1;             optionList[1].text="Banana";             optionList[1].value=2;             optionList[2].text="Apple";             optionList[2].value=3;           }           if(ElementValue == 2)           {             optionList[0].text="Potato";             optionList[0].value=1;             optionList[1].text="Cabbage";             optionList[1].value=2;             optionList[2].text="Onion";             optionList[2].value=3;           }         }       }     &lt;/script&gt;   &lt;/head&gt;   &lt;body&gt;     &lt;form name="myform" action="" method="post"&gt;     &lt;p&gt; </pre>	<b>Correct script code: 4M HTML code: 2M</b>



	<pre> &lt;select name="optionList" size="2"&gt;   &lt;option value=1&gt;Mango   &lt;option value=2&gt;Banana   &lt;option value=3&gt;Apple &lt;/select&gt; &lt;br&gt; &lt;input type="radio" name="grp1" value=1 checked="true" onclick="updateList(this.value)"&gt;Fruits   &lt;input type="radio" name="grp1" value=2 onclick="updateList(this.value)"&gt;Vegetables &lt;br&gt; &lt;input name="Reset" value="Reset" type="reset"&gt; &lt;/p&gt; &lt;/form&gt; &lt;/body&gt; &lt;/html&gt; </pre>	
	<p><b>b</b> Describe, how to read cookie value and write a cookie value. Explain with example.</p>	6 M
<p><b>Ans</b></p>	<p>Web Browsers and Servers use HTTP protocol to communicate and HTTP is a stateless protocol. But for a commercial website, it is required to maintain session information among different pages. For example, one user registration ends after completing many pages. But how to maintain users' session information across all the web pages.</p> <p>Cookies are a plain text data record of 5 variable-length fields –</p> <ul style="list-style-type: none"> <li>• <b>Expires</b> – The date the cookie will expire. If this is blank, the cookie will expire when the visitor quits the browser.</li> <li>• <b>Domain</b> – The domain name of your site.</li> <li>• <b>Path</b> – The path to the directory or web page that set the cookie. This may be blank if you want to retrieve the cookie from any directory or page.</li> <li>• <b>Secure</b> – If this field contains the word "secure", then the cookie may only be retrieved with a secure server. If this field is blank, no such restriction exists.</li> <li>• <b>Name=Value</b> – Cookies are set and retrieved in the form of key-value pairs</li> </ul> <p>Cookies were originally designed for CGI programming. The data contained in a cookie is automatically transmitted between the web browser and the web server, so CGI scripts on the server can read and write cookie values that are stored on the client.</p>	<p><b>Reading cookie with example: 3M</b> <b>Writing cookie with example: 3M</b> <b>**Note: Combined of both code is also acceptable</b></p>



JavaScript can also manipulate cookies using the **cookie** property of the **Document** object. JavaScript can read, create, modify, and delete the cookies that apply to the current web page.

### Storing Cookies

The simplest way to create a cookie is to assign a string value to the document.cookie object, which looks like this.

```
document.cookie = "key1 = value1;key2 = value2;expires = date";
```

Here the **expires** attribute is optional. If you provide this attribute with a valid date or time, then the cookie will expire on a given date or time and thereafter, the cookies' value will not be accessible.

```
<html>
  <head>
    <script type = "text/javascript">
      <!--
        function WriteCookie()
        {
          if( document.myform.customer.value == "" ) {
            alert("Enter some value!");
            return;
          }
          cookievalue = escape(document.myform.customer.value) + ";";
          document.cookie="name=" + cookievalue;
          document.write ("Setting Cookies : " + "name=" + cookievalue );
        }
      //-->
    </script>
  </head>
  <body>
    <form name = "myform" action = "">
      Enter name: <input type = "text" name = "customer"/>
      <input type = "button" value = "Set Cookie" onclick = "WriteCookie();"/>
    </form>
  </body>
</html>
```

### Reading Cookies

Reading a cookie is just as simple as writing one, because the value of the document.cookie object is the cookie. So you can use this string whenever you want to access the cookie. The document.cookie string will keep a list of name=value pairs separated by semicolons, where **name** is the name of a cookie and value is its string value.





You can use strings' **split()** function to break a string into key and values as follows:-

```
<html>
<head>
  <script type = "text/javascript">
    <!--
      function ReadCookie()
      {
        var allcookies = document.cookie;
        document.write ("All Cookies : " + allcookies )
        // Get all the cookies pairs in an array
        cookiearray = allcookies.split(';');

        // Now take key value pair out of this array
        for(var i=0; i<cookiearray.length; i++) {
          name = cookiearray[i].split('=')[0];
          value = cookiearray[i].split('=')[1];
          document.write ("Key is : " + name + " and Value is : " + value);
        }
      }
    <!-->
  </script>

</head>
<body>

  <form name = "myform" action = "">
    <p> click the following button and see the result:</p>
    <input type = "button" value = "Get Cookie" onclick =
    "ReadCookie()"/>
  </form>
```



		<pre> &lt;/body&gt; &lt;/html&gt; </pre>	
<b>c</b>	<p><b>Write a java script that displays textboxes for accepting name &amp; email ID &amp; a submit button. Write java script code such that when the user clicks on submit button</b></p> <p><b>(1) Name Validation</b> <b>(2) Email ID Validation.</b></p>		<b>6 M</b>
<b>Ans</b>	<pre> &lt;html&gt; &lt;head&gt; &lt;title&gt;Form Validation&lt;/title&gt; &lt;/head&gt; &lt;body&gt; &lt;form action = "/cgi-bin/test.cgi" name = "myForm" onsubmit = "return(validate());"&gt; &lt;table cellspacing = "2" cellpadding = "2" border = "1"&gt; &lt;tr&gt; &lt;td align = "right"&gt;Name&lt;/td&gt; &lt;td&gt;&lt;input type = "text" name = "Name" /&gt;&lt;/td&gt; &lt;/tr&gt; &lt;tr&gt; &lt;td align = "right"&gt;EMail&lt;/td&gt; &lt;td&gt;&lt;input type = "text" name = "EMail" /&gt;&lt;/td&gt; &lt;/tr&gt; &lt;tr&gt; &lt;td align = "right"&gt;&lt;/td&gt; &lt;td&gt;&lt;input type = "submit" value = "Submit" /&gt;&lt;/td&gt; &lt;/tr&gt; &lt;/table&gt; &lt;/form&gt; &lt;/body&gt; &lt;/html&gt; &lt;script type = "text/javascript"&gt; &lt;!-- // Form validation code will come here. function validate() { if( document.myForm.Name.value == "" ) { alert( "Please provide your name!" ); document.myForm.Name.focus() ; return false; } if( document.myForm.EMail.value == "" ) { </pre>	<p><b>Correct Html code: 2M</b></p> <p><b>Correct Script code: 4M</b></p> <p><b>(Any other example can be considered)</b></p>	



		<pre> alert( "Please provide your Email!" ); document.myForm.EMail.focus() ; return false; } var emailID = document.myForm.EMail.value; atpos = emailID.indexOf("@"); dotpos = emailID.lastIndexOf(".");  if (atpos &lt; 1    ( dotpos - atpos &lt; 2 )) {     alert("Please enter correct email ID")     document.myForm.EMail.focus() ;     return false; } return( true ); } //--&gt; &lt;/script&gt; </pre>	
<b>6</b>		<b>Attempt any TWO of the following :</b>	<b>12 M</b>
	<b>a</b>	<b>Describe how to evaluate checkbox selection. Explain with suitable example.</b>	<b>6 M</b>
	<b>Ans</b>	<p>Evaluating Checkbox Selection:</p> <ul style="list-style-type: none"> <li>• A checkbox is created by using the input element with the type="checkbox" attribute-value pair.</li> <li>• A checkbox in a form has only two states (checked or un-checked) and is independent of the state of other checkboxes in the form. Check boxes can be grouped together under a common name.</li> <li>• You can write javascript function that evaluates whether or not a checkbox was selected and then processes the result according to the needs of your application.</li> <li>• Following example make use of five checkboxes to provide five options to the user regarding fruit.</li> </ul> <pre> &lt;html&gt; &lt;head&gt; &lt;title&gt;HTML Form&lt;/title&gt; &lt;script language="javascript" type="text/javascript"&gt; function selection() {     var x ="You selected: ";     with(document.forms.myform)     {         if(a.checked == true)         {             x+= a.value+ " "; </pre>	<p><b>Correct Explanation : 3M</b></p> <p><b>&amp;</b></p> <p><b>Correct Example: 3M</b></p> <p><b>(Any other example can be considered)</b></p>



	<pre>    }     if(b.checked == true)     {         x+= b.value+ " ";     }     if(o.checked == true)     {         x+= o.value+ " ";     }     if(p.checked == true)     {         x+= p.value+ " ";     }     if(g.checked == true)     {         x+= g.value+ " ";     }     document.write(x); } } &lt;/script&gt; &lt;/head&gt; &lt;body&gt; &lt;form name="myform" action="" method="post"&gt;   Select Your Favourite Fruits: &lt;br&gt;   &lt;input type="checkbox" name="a" value="Apple"&gt;Apple   &lt;input type="checkbox" name="b" value="Banana"&gt;Banana   &lt;input type="checkbox" name="o" value="Orange"&gt;Orange   &lt;input type="checkbox" name="p" value="Pear"&gt;Pear   &lt;input type="checkbox" name="g" value="Grapes"&gt;Grapes   &lt;input type="reset" value="Show" onclick="selection()"&gt; &lt;/form&gt; &lt;/body&gt; &lt;/html&gt;  &lt;/form&gt; &lt;/body&gt; &lt;/html&gt;</pre>	
--	---	--



	<p><b>b</b> Write a script for creating following frame structure</p> <table border="1" data-bbox="360 289 797 541"> <tr> <td colspan="2" style="text-align: center;">FRAME 1</td> </tr> <tr> <td style="text-align: center;">FRAME 2</td> <td style="text-align: center;">FRAME 3</td> </tr> <tr> <td> <ul style="list-style-type: none"> <li>• FRUITS</li> <li>• FLOWERS</li> <li>• CITIES</li> </ul> </td> <td></td> </tr> </table> <p><b>FRUITS, FLOWERS AND CITIES</b> are links to the webpage fruits.html, flowers.html, cities.html respectively. When these links are clicked corresponding data appears in FRAME 3.</p>	FRAME 1		FRAME 2	FRAME 3	<ul style="list-style-type: none"> <li>• FRUITS</li> <li>• FLOWERS</li> <li>• CITIES</li> </ul>		6 M
FRAME 1								
FRAME 2	FRAME 3							
<ul style="list-style-type: none"> <li>• FRUITS</li> <li>• FLOWERS</li> <li>• CITIES</li> </ul>								
	<p><b>Ans</b></p> <pre> &lt;html&gt; &lt;head&gt;     &lt;title&gt;Frame Demo&lt;/title&gt; &lt;/head&gt; &lt;body&gt; &lt;table border="1"&gt; &lt;tr&gt; &lt;td align="center" colspan="2"&gt; FRAME 1 &lt;/td&gt; &lt;/tr&gt; &lt;tr&gt; &lt;td&gt; FRAME 2 &lt;ul&gt; &lt;li&gt; &lt;a href="fruits.html" target="mainframe"&gt;FRUITS&lt;/a&gt; &lt;/li&gt; &lt;li&gt; &lt;a href="flowers.html" target="mainframe"&gt;FLOWERS&lt;/a&gt; &lt;/li&gt; &lt;li&gt; &lt;a href="cities.html" target="mainframe"&gt;CITIES&lt;/a&gt; &lt;/li&gt; &lt;/ul&gt; &lt;/td&gt; &lt;td&gt; FRAME 3&lt;BR&gt; &lt;iframe name="mainframe"&gt;&lt;/iframe&gt; &lt;/td&gt; &lt;/tr&gt; &lt;/table&gt; &lt;/body&gt; &lt;/html&gt; </pre>	Frame part: 2M for each						



	<b>c</b> Write a javascript to create a pull-down menu with three options [Google, MSBTE, Yahoo] once the user will select one of the options then user will be redirected to that site.	<b>6 M</b>
<b>Ans</b>	<pre>&lt;html&gt;   &lt;head&gt;     &lt;title&gt;HTML Form&lt;/title&gt;     &lt;script language="javascript" type="text/javascript"&gt;       function getPage(choice)       {         page=choice.options[choice.selectedIndex].value;         if(page != "")         {           window.location=page;         }       }     &lt;/script&gt;   &lt;/head&gt;   &lt;body&gt;     &lt;form name="myform" action="" method="post"&gt;       Select Your Favourite Website:       &lt;select name="MenuChoice" onchange="getPage(this)"&gt;         &lt;option value="https://www.google.com"&gt;Google&lt;/option&gt;         &lt;option value="https://www.msbte.org.in"&gt;MSBTE&lt;/option&gt;         &lt;option value="https://www.yahoo.com"&gt;Yahoo&lt;/option&gt;       &lt;/form&gt;     &lt;/body&gt;   &lt;/html&gt;</pre>	<b>pull-down menu code: 2M each</b>