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SUMMER – 2024 EXAMINATION
MODEL ANSWER

22519

Subject: Client Side Scripting Language **Subject Code:**

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.

Q. No	Sub Q.N.	Answer	Marking Scheme
1.	a) Ans.	**Attempt any FIVE of the following:** **Write features of JavaScript** 1. It is an object-based scripting language. 2. It gives the user more control over the browser. 3. It is light weighted. 4. Client – Side Technology 5. JavaScript is interpreter based scripting language. 6. JavaScript is case sensitive. 7. JavaScript is object based language as it provides predefined objects.	**10** **2M** ***Any 2 features 1M each***

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	b)	**List and describe any four methods of Math object**	**2M**

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.
8) As per the policy decision of Maharashtra State Government, teaching in English/Marathi and Bilingual (English + Marathi) medium is introduced at first year of AICTE diploma Programme from academic year 2021-2022. Hence if the students in first year (first and second semesters) write answers in Marathi or bilingual language (English +Marathi), the Examiner shall consider the same and assess the answer based on matching of concepts with model answer.

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	Ans.	Math. round(value)- It returns value rounded to its nearest integer. Math.ceil(value)- It returns value rounded up to its nearest integer. Math.floor(value)- It returns value rounded down to its nearest integer. Math.trunc(Value)- It returns value as integer part of value. Math.pow (number, power)- It returns value as power of specified number. Math.sqrt(value)- It returns square root of value. Math.abs(value)- It returns absolute –positive value for given value. Math.min ()- It returns lowest value in a list of values. Math.max ()- It returns highest value in a list of values.	***Any 4 methods 1/2M each***

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	c)
	
	Ans.
		Write a JavaScript program that will print even numbers from 1 to 20
		Note: Any other relevant logic shall be considered
		<html>
		<body>
		<script type="text/javascript"> vari;
		for(i=1; i<=20;i++)
		{
		if(i%2==0)
		{
		document.write(i+"
		");
		}
		}
		</script>
		</body>
		</html>
			2M
			Correct program 2M

	d) **Ans.**	**Write a JavaScript program to display the elements of array in ascending and descending order.** ***Note: Any other relevant logic shall be considered*** <script> function func() {	**2M** ***Correct program 2M***

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		let arr = [45,12,32,78] document.write("Original Array="+arr); document.write(" Sorted Array="+arr.sort()); document.write(" Reverse Array="+arr.reverse()); } func(); </script>	

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	e)
	
	Ans.
		Give syntax of and explain function in JavaScript with suitable example
		Function is a collection of one or more statements written to execute a specific task.
		
		Syntax to define a function: function
		function_name([Arguments]) {
		Statement block;
		[return statement;]
		}
		Example: function
		display ( )
		{
		alert (—WELCOME TO JAVASCRIPT‖);
		}
			2M
			
			Explanation 1M
			
			Syntax 1M

	f) **Ans.**	**Enlist and explain any two mouse events.** **onclickevent:** This event occurs when a mouse button is clicked on or over a form element. Example:<input type=‖text‖ onclick=‖ function ()‖> **ondblclickevent**: This event occurs when a mouse button is double clicked on or over a form element. Example:<input type=‖text‖ ondblclick=‖ function ()‖> **onmousedownevent**: This event executes when a mouse button is clicked while cursor is over an element. Example:<input type=‖text‖ onmousedown=‖ function ()‖>	**2M** ***Any two mouse events with explanation 1M each***

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		onmouseupevent: This event executes when a mouse button is released while the cursor is over an element. Example:<input type=‖text‖ onmouseup=‖ function ()‖> **onmouseoverevent**: This event executes when mouse cursor moves onto an element. Example:<input type=‖text‖ onmouseover=‖ function ()‖> **onmousemoveevent**: This event executes when mouse cursor is moved while over an element. Example:<input type=‖text‖ onmousemove=‖ function ()‖> **onmouseoutevent:** This event executes when mouse cursor is moved away from an element. Example:<input type=‖text‖ onmouseout=‖ function ()‖>	
	g) Ans.	**Explain the term JavaScript URL** A **URL** (Uniform Resource Locator) is the address of a unique resource on the internet. It is one of the key mechanisms used by browsers to retrieve published resources, such as HTML pages, CSS documents, images, and so on. **Examples of URLs:** https://developer.mozilla.org/en-US/docs/Learn/ https://developer.mozilla.org/en-US/search?q=URL	**2M** ***Correct explanation 2M***

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2.	**a) Ans.**	**Attempt any THREE of the following:** **State the use of Object, Method and Property in JavaScript** **Object:** In JavaScript, almost everything is an object. In JavaScript, an object is used to represent standalone entity, with properties and type. Each object has its unique identity based on fields, buttons, interface elements, etc. For example, two forms placed on web page can have different elements and interface with respect to their use. So, each form can have unique name or id that can be referenced by JavaScript.	**12** **4M** ***Correct use of all terms 4M***

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		Property: A property is a value that is associated with an object. The properties of an object are used to define the characteristics of the object. You access the properties of an object with a simple dotnotation. For example, A form object in a web page can have properties like width, height, etc. **Method:** A method is used to define a function associated with an object to perform a specific task. Methods are defined the way normal functions are defined, except that they have to be assigned as the property of an object. For example, A submit button placed on a form is an object. Clicking on submit button causes the button to process a method i.e. when a click event occurs an action is performed and method executes.	

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	b) **Ans.**	**Explain setter and getter properties in JavaScript with the help of suitable example** **Property getters and setters** 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. get –It is used to define a getter method to get the property value set – It is used to define a setter method to set / change the property value **let obj =** **{** **get propName() {** **// getter, the code executed on getting obj.propName** **},** **set propName(value) {** **// setter, the code executed on setting obj.propName = value** **}** **};** 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. **Example of getter** const student {	**4M** ***Explanation of setter with example 2M*** ***Explanation of getter with example 2M***

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```
    firstname:      _abc‘,
get getname()
    {
        return this.firstname;
    }
};
```

Example of setter

```
const student
{
    firstname: _abc‘,
set changename(nm)
    {
        this.firstname=nm;
    }
};
```

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	c)
	
	Ans.
		Write a JavaScript program to check whether a number is positive, negative or zero using switch case. ***Note: Any other relevant logic shall be considered.***
		<html>
		<body>
		<script type="text/javascript"> var num=prompt("Enter number");
		switch (Math.sign(num))
		{ case
		1:
		alert("The number is Positive"); break;
		case -1:
		alert("The number is Negative");
		break;
		default:
		alert("The number is Zero");
		}
		</script>
		</body>
		</html>
			4M
			
			Correct logic 2M
			
			Correct syntax 2M

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	d) **Ans.**	**State the use of following methods:** i) **charCodeAt( )** ii) **fromCharCode ( )** 1. **charCodeAt( )**: This method is used to return a unicode of specified character. **Syntax**: var code=letter.charCodeAt( ); **Example**: var ch=‘a‘; document.write(ch.charCodeAt( )); **Output**: 97 2. **fromCharCode( )**: This method is used to return a character for specified code. **Syntax**: var character=String.fromCharCode(code); **Example**: var character=String.fromCharCode(97); Document.write(ch); **Output**: a	**4M** ***Use of each method 2M***

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3.	**a)**
	Ans.
		Attempt any THREE of the following:
		Explain Associative arrays in detail.
		Associative arrays are basically objects in JavaScript where indexes are replaced by user-defined keys.
		Syntax: var arr = {key1:'value1', key2:'value2'}
		Here, arr, is an associative array with key1, key2 being its keys or string indexes and value1 & value 2 are its elements.
		Example: var arr = { "Company Name": _Flexiple‘, "ID": 123};
		
		The content or values of associative arrays is accessed by keys. An associative array is an array with string keys rather than numeric keys.
		For example: var
		arrAssociative = {
		"Company Name": 'Flexiple',
		"ID": 123
		};
			12
			4M
			
			Correct explanation 4M

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		var arrNormal = ["Flexiple", 123]; Here, the keys of the associative array are ―Company Name‖ & ―ID‖ whereas in the normal array. The keys or index is 0 & 1.	

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	b)
	
	Ans.
		Write a JavaScript function that checks whether a passed string is palindrome or not.
		Note: Any other relevant logic shall be considered function isPalindrome(str) {
		str = str.replace(/[^A-Za-z0-9]/g, '').toLowerCase();
		return str === str.split('').reverse().join('');
		}
		console.log(isPalindrome("A man, a plan, a canal, Panama"));
		// Output: true console.log(isPalindrome("racecar")); // Output: true console.log(isPalindrome("hello")); // Output: false
			4M
			
			Correct logic 2M
			
			Correct syntax 2M

	c) **Ans.**	**Explain how to add and sort elements in array with suitable example.** **Adding Elements to an Array:** In JavaScript, you can add elements to an array using various methods, such as push(), unshift(), or direct assignment to a specific index. **Using push():** The push() method adds one or more elements to the end of an array and returns the new length of the array. **Using unshift():** The unshift() method adds one or more elements to the beginning of an array and returns the new length of the array. **Using splice():** This method can be used to add new items to an array, and removes elements from an array. **Syntax:** arr.splice(start_index,removed_elements,list_of_elemnts_to_be_added);	**4M** ***Explanation of adding elements with suitable example*** ***Any one method 2M***

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Parameter:

•The first parameter defines the position where new elements should be added (spliced in).

•The second parameter defines how many elements should be removed.

•The list_of_elemnts_to_be_added parameter define the new elements to be added(optional).

Using length property:

The length property provides an easy way to append a new element to an array.

Example

```
<script>
var fruits = ["Banana", "Orange", "Apple",
"Mango"]; document.write(fruits+"<br>");
fruits[fruits.length] = "Kiwi";
document.write(fruits+"<br>"); fruits[fruits.length] =
"Chikoo"; document.write(fruits);
</script>
```

Sorting Elements in an Array:

JavaScript provides the sort() method to sort the elements of an array in place and returns the sorted array.

Example

```
let numbers = [5, 2, 8, 1, 4];
numbers.push(7);
console.log("Array before sorting:", numbers);
numbers.sort((a, b) => a - b);
console.log("Array after sorting:", numbers);
```

Explanation of sorting elements with suitable example 2M

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	d) Ans.	**Explain the term browser location and history in details.** **Window Location Object:** In JavaScript, the window.location object represents the current URL of the browser window. It provides properties and methods to manipulate the URL.	**4M**

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		window.location.href:
		Returns the complete URL of the current page.
		window.location.hostname:
		Returns the domain name of the web server.
		window.location.pathname:
		Returns the path and filename of the current page.
		window.location.protocol:
		Returns the protocol (HTTP, HTTPS, etc.) of the current page.
		window.location.assign(url):
		Loads the specified URL.
		window.location.reload(forceReload):
		Reloads the current page.
		// Example: Changing browser location
		window.location.href = "https://example.com/page2";
		Window History
		The window.history object can be written without the window prefix.
		To protect the privacy of the users, there are limitations to how JavaScript can access this object.
		Some methods:
		history.back() - same as clicking back in the browser
		history.forward() - same as clicking forward in the browser
		Window History Back
		The history.back() method loads the previous URL in the history list.
		This is the same as clicking the Back button in the browser.
		Example:
		<html>
		<head> <script>
		function goBack() {
		window.history.back()
		}
			Explanation of location 2M
			
			Explanation of history 2M

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		</script> </head> <body> <input type="button" value="Back" onclick="goBack()"> </body> </html>	

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4.		**Attempt any THREE of the following:**	**12**
	a)	**State what is frame? Explain how it can be created with suitable example.**	**4M**
	Ans.	***Note: Explanation of either <frameset> , <frame> or <iframe> shall be considered.***	
		A frame refers to an HTML element that allows the display of another HTML document within the current web page. Frames are implemented using the <frameset>, <frame> and <iframe> (Inline Frame) element in HTML.	***Definition 1M***
		Frames are used to divide browser window into multiple sections where each section is treated as window that can have independent contents. A frame can load separate HTML document in each frame in a window.	***Explanation with example 3M***
		<frameset> tag : A frameset is defined as a set of frames inserted in an HTML web page. These frames can be in the form of rows and columns in different size. Frameset tells the browser how to divide the screen into multiple areas. **<frameset> ... </frameset>**	
		Attributes:	

cols=”pixels/percentage”	Specify number and size of columns in a frameset. Default value is 100% (1 column).
rows=”pixels/percentage”	Specify number and size of rows in a frameset. Default value is 100% (1 row).

		<frame> tag : Frame tag is used to insert web page content in a frame. It is an empty tag.	

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Attributes:

src=”URL”	Specify address of a web page to be displayed in a frame.
name=” string”	Specify name of the frame which can be used as target to open a link.

Code:

```
<html>
<frameset cols="25%,75%" >
<frame src="page1.html" name="f1">
<frame src="page2.html" name="f2">
</frameset>
</html>
```

OR

Creating Frames with <iframe> in HTML:

To create a frame using the <iframe> element, you specify the URL of the document you want to embed as the value of the src attribute. Cross-Origin Restrictions: When embedding content from external sources, cross-origin restrictions may apply. This means that the embedded content must be served with appropriate CORS (CrossOrigin Resource Sharing) headers to allow it to be displayed within the frame.

Example:

```
<!DOCTYPE html>
<html lang="en">
<head>
<meta charset="UTF-8">
```

		<meta name="viewport" content="width=device-width, initialscale=1.0"> <title>Frame Example</title> <style> /* Style the iframe */ iframe {	

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		width: 100%; height: 300px; /* Set the height as desired */ border: 1px solid #ccc; /* Add a border for clarity */ } </style> </head> <body> <!-- Create a frame with an embedded document --> <iframesrc="https://www.example.com"></iframe> </body> </html>	

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	b) Ans.	**Explain the steps to create floating menu and chain select menu** A floating menu is a menu that remains visible as the user scrolls down a web page. It's often used for navigation or providing quick access to important content. Here's how you can create one: HTML Structure: Create the HTML structure for the menu. This typically involves using <nav> or elements for the menu container, and and elements for the menu items. CSS Styling: Use CSS to style the menu and make it float on the page. You can use position: fixed to fix the menu in place and top, bottom, left, or right properties to position it relative to the viewport. JavaScript (Optional): You can enhance the functionality of the floating menu with JavaScript. For example, you can add smooth scrolling to anchor links within the menu, or you can add animations to make the menu appear or disappear dynamically. **Example:** <!DOCTYPE html> <html lang="en"> <head> <meta charset="UTF-8"> <meta name="viewport" content="width=device-width, initialscale=1.0"> <title>Floating Menu Example</title> <style>	**4M** ***Correct steps of each 2M***

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```
        /* CSS styles for the floating menu */

.floating-menu {
            position: fixed;
            top: 0;
            left: 0;
            background-color: #333;
            padding: 10px;
width: 100%;
            z-index: 1000; /* Ensure it's above other content */
        }
.menu-item {
            display: inline-block;
margin-right: 10px; color: #fff;
            text-decoration: none;
        }
</style>
</head>
<body>
<nav class="floating-menu">
<ul>
<li class="menu-item"><a href="#section1">Section 1</a></li>
<li class="menu-item"><a href="#section2">Section 2</a></li> <!-
- Add more menu items as needed -->
</ul>
</nav>
<section id="section1">
<h2>Section 1</h2>
<p>This is the content of section 1.</p>
</section>
<section id="section2">
```

		Section 2 This is the content of section 2.	

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		</section> </body> </html> **Chained Select Menu:** A chained select menu, also known as a dependent or cascading menu, consists of multiple dropdown menus where the options dropdown menu depend on the selection made in another dro menu. **Example:** <!DOCTYPE html> <html lang="en"> <head> <meta charset="UTF-8"> <meta name="viewport" content="width=device-width, scale=1.0"> <title>Chained Select Menu Example</title> </head> <body> <label for="country">Country:</label> <select id="country"> <option value="">Select a country</option> <option value="usa">USA</option> <option value="uk">UK</option> </select> <label for="city">City:</label> <select id="city" disabled> <option value="">Select a city</option> </select> <script> initial-	

		// JavaScript code to handle the chained select menu
		constcountrySelect = document.getElementById('country');	

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```
constcitySelect = document.getElementById('city');

// Data source (for demonstration purposes) constcitiesByCountry
= {
        'usa': ['New York', 'Los Angeles', 'Chicago'],
        'uk': ['London', 'Manchester', 'Birmingham']
    };

countrySelect.addEventListener('change', function() {
constselectedCountry = this.value;
        if (selectedCountry) {
citySelect.innerHTML = '';
const cities = citiesByCountry[selectedCountry];
if (cities) {
citySelect.disabled = false;
citySelect.innerHTML += '<option value="">Select a
city</option>'; cities.forEach(city => { citySelect.innerHTML +=
`<option value="${city}">${city}</option>`;
                });
            } else {
citySelect.disabled = true;
            }
        } else {
citySelect.disabled = true;
citySelect.innerHTML = '<option value="">Select a city</option>';
        }
    });
</script>
</body>
</html>
```

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	c) Ans.	**Explain how to use banners for displaying advertisement.** Following are the steps to insert banner advertisement in webpage.	**4M**

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		1) Create banner advertisement using a graphics tool such as PhototShop, Paint, etc. 2) Create an <img> element in web page with height and width to display banner advertisement. 3) Build JavaScript that loads and display banner advertisements. <html> <head> <title>Banner Advertisements</title> </head> <body bgcolor="#EEEEEE"> <imgsrc="ad.jpg"/> </body> </html>	***Correct explanation 4M***

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	d)
	
	Ans.
		Write a JavaScript function to check whether a given address is a valid IP address or not.
		Note: Any other relevant logic shall be considered function isValidIPAddress(address) {
		const ipv4Regex = /^(\d{1,3})\.(\d{1,3})\.(\d{1,3})\.(\d{1,3})$/;
		const match = address.match(ipv4Regex); if (match) {
		for (let i = 1; i<= 4; i++) { const
		part = parseInt(match[i]);
		if (part < 0 || part > 255 || isNaN(part)) {
		return false; // Invalid part
		}
		}
		return true;
		} else {
		return false;
		}
		}
			4M
			
			Correct logic 2M
			
			Correct syntax 2M

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	e) Ans.	**Explain process to create status bar in JavaScript.** **Status Bar:** The status bar is located at the bottom of the browser window and is used to display a short message to visitors on a web page. Developers who are clever to utilize the status bar employ various techniques to incorporate the status bar in the design of their web page. Some developers display a message on the status bar when the web page first opens. Other developers might change the message to reflect whatever the visitor is doing on the web page. For example, if a user is filling registration form then status bar will display a text as _User is on form filling section'. **Building a Static Message:** A static message appears when the web page opens and remains on the status bar until the web page is closed. The content of the status bar is the value of the window object's status property. To display a message on the status bar, assign the message to the status property of the window object. **Example:-** window.status= 'You are on home page'; <html> <head> <script type="text/javascript"> window.status='Welcome to Home Page'; </script> </head> <body> Hello welcome to JavaScript </body> </html>	**4M** ***Correct explanation 4M***

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5.	**a)**	**Attempt any TWO of the following:** **Write HTML script that displays textboxes for accepting username and password. Write proper JavaScript such that when the user clicks on submit button**	**12** **6M**

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	Ans.	**i) All textboxes must get disabled and change the color to 'RED; and with respective labels**
		ii) Prompt the error message if the password is less than six characters
		Note: Any other relevant logic shall be considered
		<html>
		<head> <script>
		function disableTxt()
		{
		document.getElementById("un").disabled = true;
		document.getElementById('un').style.color = "red";
		
		document.getElementById('aaa').style.color = "red";
		document.getElementById("pass").disabled = true;
		document.getElementById('pass').style.color = "red";
		document.getElementById('bbb').style.color = "red";
		}
		function validateform(){ var username=document.myform.username.value;
		var password=document.myform.password.value;
		if (username==null || username==""){ alert("Name can't be blank"); return false;
		}else if(password.length<6){
		alert("Password must be at least 6 characters long.");
		return false;
		}
		}
		</script>
		</head>
		<body>
			Create textboxes 2M
			
			Disable textboxes with red color 2M
			
			Password validation 2M

		<form name="myform" method="post" action="" onsubmit="return validateform()" > <label id = "aaa">Username:</label>	

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		<input type="text" id="un" name="username"/> <label id = "bbb"> Password: </label> <input type="password" id="pass" name="password"/> <button onclick="disableTxt()">Disable Text field</button> </form> </body> </html>	

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	b)
	
	Ans.
		Write a webpage that displays a form that contains an input for students rollno and names user is prompted to enter the input student rollno and name and rollno becomes value of the cookie.
		Note: Any other relevant logic shall be considered
		<html>
		<head><script> function
		writeCookie()
		{
		var d=new Date();
		d.setTime(d.getTime()+(1000*60*60*24));
		with(document.myform)
		{
		document.cookie="Roll No=" + student.value + ";expires="
		+d.toGMTString();
		} }
		function readCookie()
		{
		if(document.cookie=="")
		document.write("cookies not found"); else
		document.write(document.cookie);
		}
		</script>
		</head>
			6M
			
			Create input text boxes for username and password 2M
			
			Set cookie 2M
			
			display 2M

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		<body> <form name="myform" action=""> Enter your name: <input type="text" name="student"> Enter your Roll No: <input type="roll no" name="student"> <input type="Reset" value="Set C" type="button" onclick="writeCookie()"> <input type="Reset" value="Get C" type="button" onclick="readCookie()"> </form></body> </html>	

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	c) **Ans.**	**Write a JavaScript to create rollover effect that involves text and images. When the user places his or her mouse pointer over a book title, the corresponding book images appears** ***Note:*** ***Any other relevant logic shall be considered*** <html> <head> <title> rollovers</title> </head> <body> <table border="1" width="100%"> <tbody> <tr valign="top"> <td width="50%"> <a><img height="500" src="motivation.png" width="900" name="clr"></td> <td> <u>Motivational book</u> <u>Educational book</u> </td>	**6M** ***Correct logic 3M*** ***Correct syntax 3M***

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		</tr> </tbody> </table> </body> </html>	

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6.	**a)**
	
	Ans.
		Attempt any TWO of the following:
		Explain following form control / elements with example Button, Text, TextArea, Select, Checkbox, Form.
		Note: Combined example including all controls / elements shall be considered.
		Button is created by using following code:
		<form method = —GET‖ action = —‖><input type = —button‖ name =
		—MyButton‖ value = —Click‖ onclick = —msg()‖><form>
		There are several types of button, which are specified by the type attribute:
		1. Button which corresponds to the graphic component.
		2. Submit, which is associated to the form and which starts the loading of the file assigned to the action attribute. 3. Image button in which an image loaded from a file.
		A Button object also represents an HTML <button> element which is specified as follows:
		<button name = —btn‖ value = —MyButton‖ onclick = —msg()‖>
		Example:
		<html>
		<body>
		 Show a Push Button
		 The button below activates a JavaScript when it is clicked.
		<form>
		<input type="button" value="Click me" onclick="msg()">
		</form>
		<script> function
		msg()
		{
		alert("Hello world!");
		}
		</script>
			12
			6M
			
			Explanation of each control with example 1M

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</body>
</html>

Text:
Input ―text‖ is an object to enter a single line of text whose content will be part of form data.
In html a text is created by following code:
<input type=‖text‖ name=‖textname‖ id=‖textid‖ value=‖ assign_value‖ />

Example:
<script type="text/javascript"> function changeText()
{
var userInput = document.getElementById('userInput').value;
document.getElementById('vp').innerHTML = userInput; }
</script>
<input type='text' id='userInput' value='Enter Text Here' />
Welcome JavaScript
<input type='button' onclick='changeText()' value='Change Text'/>
</script>

TextArea:
The Textarea object represents an HTML <textarea> element. The <textarea> tag indicates a form field where the user can enter a large amount of text.
You can access a <textarea> element by using getElementById()

Example:
<html>
<body>

		<textarea cols="30" rows="5" wrap="hard" readonly="yes" disabled="yes"> As you can see many times word wrapping is often the desired look for your textareas. Since it makes everything nice and easy to read and preserves line breaks.	

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		</textarea> </body> </html> **Checkbox:** <input> elements of type checkbox are rendered by default as boxes that are checked (ticked) when activated. A checkbox allows you to select single values for submission in a form (or not). Syntax for creating checkbox is: <input type="checkbox" id="myCheck" onclick="myFunction()"> A checkbox can have only two states: 1. Checked 2. Unchecked **Example:** <html> <body> <input type="checkbox" name="program" id="it" value="IT"> <label for="it">Information Tech</label> <input type="checkbox" name="program" id="co" value="CO" checked> <label for="co">Computer Engg</label> <input type="checkbox" name="program" id="ej" value="EJ"> <label for="ej">Electronics</label> <button onclick="validate();">Validate</button> <script> function validate()	

		{ var elements = document.getElementsByName("program"); var statusText = " ";	

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```
for (var index=0;index <elements.length;index++)
{
statusText = statusText +
elements[index].value+"="+elements[index].checked+"<br>";
}
document.getElementById("status").innerHTML = statusText; }
</script>
</body>
</html>
```

Select:

Form SELECT elements (<select>) within your form can be accessed and manipulated in JavaScript via the corresponding Select object.

To access a SELECT element in JavaScript, use the syntax:

document.myform.selectname //where myform and selectname are names of your form/element. document.myform.elements[i] //where i is the position of the select element within form document.getElementById("selectid") //where "selectid" is the ID of the SELECT element on the page. **Example:**

```
<html>
<body>
<select id="programs" size="5">
<option>Computer Engineering</option>
<option>Information Technology</option>
<option>Chemical Engineering</option>
<option>Electronics &TeleComm.</option>
</select>
<p>Click the button to disable the third option (index 2) in the dropdown list.</p>
<button onclick="myFunction()">Disable Option</button> <script>
```

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```
function myFunction()
{
var x = document.getElementById("programs").options[2].disabled
= true;
document.getElementById("programs").options[2].style.color =
"red";
}
</script>
</body>
</html>
```

Form:

A form is a section of an HTML document that contains elements such as radio buttons, text boxes and option lists. HTML form elements are also known as controls.

Elements are used as an efficient way for a user to enter information into a form. Typical form control objects also called ―widgets‖ includes the following:

- Text box for entering a line of text.
- Push button for selecting an action.
- Radio buttons for making one selection among a group of options.
- Check boxes for selecting or deselecting a single, independent option.

The <form> element can contain one or more of the following form elements:

· <input> · <textarea> · <button> · <select> · <option> · <fieldset> · <label>

· <legend> **Syntax:**

<form name = ―myform‖ id = ―myform‖ action = ―page.html‖ onSubmit = ―test()‖> -----objects---- </form>

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	b)	**Write a JavaScript for protecting web page by implementing the following steps:** **i) Hiding your source code**	**6M**

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	Ans.	**ii) Disabling the right MouseButton** iii) **Hiding JavaScript** **i) Hiding your source code:** • Every developer has to admit that, on occasion, they've peeked at the code of a web page or two by right-clicking and choosing View Source from the context menu. • In fact, this technique is a very common way for developers to learn new techniques for writing HTML and Javascript. However, some developers don't appreciate a colleague snooping around their code and then borrowing their work without permission. This is particularly true about javascript, which are typically more time-consuming to develop than using HTML to build a web page. • In reality, you cannot hide your HTML code and JavaScript from prying eyes, because a clever developer can easily write a program that pretends to be a browser and calls your web page from your web server, saving the web page to disk, where it can then be opened using an editor. Furthermore, 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 hide 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. **ii) Disabling the right Mouse Button:**	***Hiding source code 2M*** ***Disabling Mouse button 2M*** ***Hiding JavaScript 2M***

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		The following example shows how to disable the visitor's right mouse button while the browser displays your web page. All the	

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action occurs in the JavaScript that is defined in the <head> tag of the web page. **Example:**

```
<html>
<head> <script>
window.onload = function()
{
document.addEventListener("contextmenu", function(e)
{
e.preventDefault();
}, false);}
</script>
<body>
<h3>Right click on screen,Context Menu is disabled</h3>
</body>
</html>
```

The preventDefault() method cancels the event if it is cancelable, meaning that the default action that belongs to the event will not occur.

iii) 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

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		built into the web page. You do this by assigning the file name that contains the JavaScript to the src attribute of the <script> tag.	

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		Next, you need to define empty functions for each function that you define in the external JavaScript file.
		
		webpage.html
		<html>
		<head>
		<script src="mycode.js" languages="javascript" type = "text / javascript">
		</script>
		<body>
		  Right Click on screen, Context Menu is disabled
		</body> </html>
		mycode.js
		window.onload=function()
		{
		document.addEventListener("contextmenu", function(e)
		{
		e.preventDefault();
		}, false);
		}	

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	c) **Ans.**	**Develop a JavaScript to create rotating Banner Ads with URL links.** ***Note: Any other correct logic / program shall be considered*** <html> <head> <title>Link Banner Ads</title> <script language="Javascript" type="text/javascript"> Banners = new Array('1.jpg','2.jpg') BannerLink = new Array('google.com/', 'msbte.org.in/'); CurrentBanner = 0; NumOfBanners = Banners.length; function LinkBanner() { document.location.href ="http://www." +	**6M** ***Correct program 6M***

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		BannerLink[CurrentBanner];
		}
		function DisplayBanners() {
		if (document.images) {
		CurrentBanner++
		if (CurrentBanner == NumOfBanners) {
		CurrentBanner = 0
		}
		document.RotateBanner.src= Banners[CurrentBanner]
		setTimeout("DisplayBanners()",1000)
		} }
		</script>
		</head>
		<body onload="DisplayBanners()" >
		
		<imgsrc="1.jpg"
		width="400" height="75" name="RotateBanner" />
		
		</body></html>	

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