

1. Attempt any FIVE of the following :**10**

- (a) State the features of Javascript.
- JavaScript can dynamically modify an HTML page
 - JavaScript can validate user input
 - JavaScript can be used to create cookies (yum!)
 - JavaScript is a full-featured programming language
 - JavaScript user interaction does not require any communication with the server
- (b) Differentiate between session cookies and persistent cookies.
- (c) Write a javascript program to check whether entered number is prime or not.
- (d) Explain following form events :
- (i) onmouseup
 - (ii) onblur
- (e) Write a javascript program to changing the contents of a window.
- (f) Explain frame works of javascript and its application.
- (g) Write a javascript syntax to accessing elements of another child window.

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Document</title>
</head>
<body>
  <p id="chan">here is the content before Window</p>
  <input type="button" value="click to change the content " onclick="change()">
```

```
<script>
  function change(){
    document.getElementById("chan").innerHTML= "the content is changed"
  }
</script>
</body>
</html>
```

2. Attempt any THREE of the following :**12**

- (a) Write a javascript program to validate user accounts for multiple set of user ID and password (using switch case statement).

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Document</title>
</head>
<body>
  <div id="first" align="center">
    <label for="first1">Enter the User Id</label>
    <input type="text" id="first1" />
  </div><br>
  <div id="Second" align="center">
    <label for="Second2">Enter the Password</label>
    <input type="text" id="Second2" /><br /><br />
    <Button id="bt1" onclick=check()>Login</Button>
  </div>
  <script>
    function check() {
      var a = document.getElementById("first1").value;
      var b = document.getElementById("Second2").value;
      var msg = "Login Sucessful";
      switch (a) {
        case "user": if (b == "121")
          break;
        case "user2": if (b == "122")
          break;
        case "user3": if (b == "123")
          break;
        case "user4": if (b == "124")
          break;
        case "user5": if (b == "125")
          break;
        default: msg = "Login unsucessful";
      }
      alert(msg);
    }
  </script>

</body>
</html>
```

(b) Differentiate between `concat()` and `join()` methods of array object.

Point	<code>concat()</code>	<code>join()</code>
Purpose	Returns a new array containing the elements from all arrays passed as arguments.	Returns a single string composed of array elements, separated by a specified separator or a default comma (,) if not provided.
Return Value	Does not modify the original arrays; it creates a new array.	Does not modify the original array; it creates a string.
Modifies Original Array	<code>arr.concat(arr2, arr3, ...)</code>	<code>arr.join(separator)</code>
Example	javascript const arr1 = [1, 2]; const arr2 = [3, 4]; const combined = arr1.concat(arr2); // combined is [1, 2, 3, 4]	javascript const fruits = ['apple', 'banana', 'cherry']; const result = fruits.join(', '); // result is "apple, banana, cherry"

(c) Write a javascript program to demonstrate java intrinsic function.

- An intrinsic function (or built-in function) is a function (subroutine) available for use in a given programming language whose implementation is handled specially by the compiler.
- You can use intrinsic functions to make reference to a data item whose value is derived automatically during execution.
 - 1) `abs()` - The ABS function returns the absolute value of the argument.
 - 2) `sin()` - The SIN function returns a numeric value that approximates the sine of the angle or arc specified by the argument in radians.
 - 3) `sqrt()` - The SQRT function returns a numeric value that approximates the square root of the argument specified.

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Math Functions in JavaScript</title>
</head>
```

```
<body>

<script>
  // Example using Math.abs
  var number = -10;
  var absoluteValue = Math.abs(number);
  console.log('Absolute value of ' + number + ' is ' + absoluteValue);

  // Example using Math.sqrt
  var squareRootValue = Math.sqrt(25);
  console.log('Square root of 25 is ' + squareRootValue);
</script>

</body>
</html>
```

- (d) Design a webpage that displays a form that contains an input for user name and password. User is prompted to enter the input user name and password and password become value of the cookies. Write the javascript function for storing the cookies.

```
<html>

<body onload="getCookie()">
  <form name>
    <label> Username: </label>
    <input type="text" id="username" /><br><br>
    <label> Password: </label>
    <input type="password" id="password" /><br><br>
    <input type="button" value="Register" onclick="setCookie()" />
    <p id="content"></p>
  </body>
<script>
  function setCookie() {
    document.cookie =
      "password=" + document.getElementById("password").value + ";";
    getCookie();
  }
  function getCookie() {
    var cookiearray = document.cookie;
    cookiearray = cookiearray.split("=");

    if (cookiearray[0] == "password")
      document.getElementById("content").innerHTML = "Last used
password: " + cookiearray[1];
    else
      document.getElementById("content").innerHTML = "Cookie not
      found"
    }
  </script>

</html>
```

3. Attempt any THREE of the following :**12**

- (a) Write a javascript program to create read, update and delete cookies.

```
<html>
  <head>
    <title>
      WAP to create, read, update and delete cookie.
    </title>
  </head>
  <body>
    <script>
      function createCookie(){
        var nameofcookie = document.myform.cookieName.value;
        var valueofcookie = document.myform.cookieValue.value;
        document.cookie=nameofcookie+"="+valueofcookie;
        alert("Cookie created Successfully....");
      }
      function readCookie(){
        alert("All Cookies : "+document.cookie);
      }
      function updateCookie(){
        var nameofcookie = document.myform.cookieName.value;
        var valueofcookie = document.myform.cookieValue.value;
        document.cookie=nameofcookie+"="+valueofcookie;
        alert("Cookie updated Successfully....");
      }
      function deleteCookie(){
        var nameofcookie = document.myform.cookieName.value;
        var valueofcookie = document.myform.cookieValue.value;

        document.cookie=nameofcookie+"="+valueofcookie+";"+"expires= Thu, 01-Jan-
        1999 00:00:01 GMT";
        alert("Cookie deleted successfully....");

      }
    </script>
    <form name="myform">
      Enter Cookie Name : <input type="text" name="cookieName"><br>
      Enter Cookie Value : <input type="text" name="cookieValue"><br>
      <input type="button" value="CreateCookie"
onclick="createCookie()">
      <input type="button" value="ReadCookie" onclick="readCookie()">
      <input type="button" value="UpdateCookie"
onclick="updateCookie()">
    </form>
  </body>
</html>
```

```
        <input type="button" value="DeleteCookie"
onclick="deleteCookie()">
    </form>
</body>
</html>
```

(b) Write a javascript program to link banner advertisements to different URLs.

```
<!DOCTYPE html>
<html lang="en">

<head>
    <meta charset="UTF-8">
    <meta name="viewport" content="width=device-width, initial-scale=1.0">
    <title>Document</title>
</head>

<body onload="rotate()">

    <a id="link">  </a>

    <script>
        var pics = [ ["img1.jpg", "www.google.com"] , ["img2.jpg", "www.google.com"]
, ["img3.jpg", "www.google.com"] ]
        var count = 0
        function rotate() {
            count++;
            if (count > pics.length - 1) {
                count = 0;
            }
            document.getElementById("img").src = pics[count][0];
            document.getElementById("link").href = pics[count][1];

            setTimeout("rotate()", 2000)

        }
    </script>

</body>

</html>
```


- (c) Write a javascript program to calculate add, sub, multiplication and division of two number (input from user). Form should contain two text boxes to input numbers of four buttons for addition, subtraction, multiplication and division

```
<!DOCTYPE html>
<html lang="en">

<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Document</title>
</head>

<body>
  <form>
    <label for="calc">Enter the one number </label>
    <input type="text" id="1">
    <br> <br>
    <label for="">Enter the two number </label>
    <input type="text" id="2">
    <br>
    <br>
    <button id="a" onclick="add()">Addition</button>
    <button id="s" onclick="sub()">Subtraction</button>
    <button id="d" onclick="div()">Division</button>
    <button id="m" onclick="mul()">Multiplication</button>
    <p id="result"></p>
  </form>
  <script>

    var res;
    function add() {
      var num1 = parseInt(document.getElementById("1").value)
      var num2 = parseInt(document.getElementById("2").value)
      res = num1 + num2
      document.getElementById("result").innerHTML = "Addition : " + res
    }
    function sub() {
      var num1 = parseInt(document.getElementById("1").value)
      var num2 = parseInt(document.getElementById("2").value)

      res = num1 - num2
      document.getElementById("result").innerHTML = "Subtraction : " + res
    }
  </script>
</body>
</html>
```

```
    }  
    function div() {  
        var num1 = parseInt(document.getElementById("1").value)  
        var num2 = parseInt(document.getElementById("2").value)  
        res = num1 / num2  
        document.getElementById("result").innerHTML = "Division : " + res  
    }  
    function mul() {  
        var num1 = parseInt(document.getElementById("1").value)  
        var num2 = parseInt(document.getElementById("2").value)  
        res = num1 * num2  
        document.getElementById("result").innerHTML = "Multiplication : " + res  
    }  
    </script>  
</body>  
  
</html>
```

(d) State what is regular expression. Explain its meaning with the help of a suitable example.

- Regular Expression is a special text string that defines the search pattern.
- It is a logical expression. For example – for counting specific characters in a string or to replace some substring by another substring we need to create a regular expression.
- We can create a regular expression pattern using forward slash /.
- For instance – re = /abc/ Regular expression is a powerful way for searching and replacing the characters in the string.

```
<!DOCTYPE html>  
<html>  
  
<head>  
    <script type="text/javascript">  
        function TestString(str) {  
            re = /[az]/;  
            if (re.test(str)) {  
                alert("The letter a or z or both are present in the  
string");  
            }  
            else {  
                alert("String does not contain a or z or both");  
            }  
        }  
    </script>  
</head>  
</html>
```

```
        }
    }
</script>
</head>

<body>
    <h2>Example of Regular Expression</h2>
    <script type="text/javascript">
        var input_str = prompt("Enter some string here", "");
        TestString(input_str);
    </script>
</body>

</html>
```

4. Attempt any THREE of the following :**12**(a) Differentiate between For-loop and For-in loop.

Terms	For-loop	For-in
Use Case	General-purpose loop for iterating over arrays or other iterable objects.	Used for iterating over the properties of an object (usually an object's keys).
Syntax	for (initialization; condition; iteration) { }	for (variable in object) { }
Typical Iteration	Numeric indices (0, 1, 2, ...) in an array or iterable object.	Object property names (keys) in an object.
Enumerating Elements	Iterates through elements in a collection.	Iterates through object properties.
Example	for (let i = 0; i < 5; i++) { }	for (let prop in object) { }

(b) Write a javascript function that accepts a string as a parameter and find the length of the string.

```
<!DOCTYPE html>
<html lang="en">

<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Document</title>
</head>

<body>
  <script>
    function find(str1) {
      var len = str1.length
      document.write("\n length of the string "+str+" is : "+len)
    }
    var str = prompt("\n enter the string to find the lenght ")
    find(str)
  </script>
</body>
</html>
```

- (c) Write a javascript program to validate email ID of the user using regular expression.

```
<!DOCTYPE html>
<html>

<head>
  <title>Form Validation</title>
</head>

<body>
  <form id="myForm">
    <label for="name">Name:</label>
    <input type="text" id="name" name="name" required><br>
    <label for="email">Email:</label>
    <input type="text" id="email" name="email" required><br>
    <button type="button" onclick="validateForm()">Submit</button>
  </form>
  <script>
    function validateForm() {
      const name = document.getElementById("name").value;
      const email = document.getElementById("email").value;
      // Name Validation
      if (name.trim() === "") {
        alert("Name is required.");
        return;
      }
      // Email Validation using regex
      const emailRegex = /^[A-Za-z0-9._%+-]+@[A-Za-z0-9]+\.[A-Za-z]{2,3}$/;
      if (!emailRegex.test(email)) {
        alert("Invalid email address.");
        return;
      }
      // If both name and email are valid, you can proceed with form submission
      //rion tuscano
      alert("Form submitted successfully!");
      document.getElementById("myForm").reset(); // Clear the form
    }
  </script>
</body>

</html>
```

- (d) Write a javascript program to design HTML page with books information in tabular format, use rollovers to display the discount information.

- (e) List ways of protecting your webpage and describe any one of them.
Ways of protecting Web Page:

- 1)Hiding your source code
- 2)Disabling the right MouseButton
- 3) Hiding JavaScript
- 4) Concealing E-mail address.

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 tag of the web page.

```
<!DOCTYPE html>
<html>

<head>
  <title>Locking the Right Mouse Button</title>
  <script language=JavaScript>
    function RightClickDisable() {
      alert('Not allowed to right click');
      return false;
    }
    function InternetExploreBrowser() {
      if (event.button == 2) {
        RightClickDisable();
        return false
      }
    }
    document.oncontextmenu = new Function("RightClickDisable();return
false")
  </script>
</head>

<body>
  <h1> This is a sample web page</h1>
  <h4> Test disability of right click button by clicking right
button</h4>
</body>

</html>
```

5. Attempt any TWO of the following :**12**

- (a) Write a javascript to checks whether a passed string is palindrome or not.

```
<!DOCTYPE html>
<html lang="en">

<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width,
initial-scale=1.0">
  <title>Document</title>
</head>

<body>
  <script>
    var str = prompt(" enter the string ")
    if(str===null||str==""){
      document.write(" invalid op")

    }
    else if (str===str.split("").reverse().join(""))
  {
    //split divide the array and rverse it and again joins it
    document.write(str + " String is palindrone")
  }
  else {
    document.write(str+" string is not plaindrone ")
  }
  </script>
</body>

</html>
```

- (b) Develop javascript to convert the given character to unicode and vice-versa.

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Document</title>
</head>
<body>
  <script>
    var str = prompt("\n enter the alphabet , A ")
    var i = str.charCodeAt()
    document.write("the unicode of the "+str+" is : "+i)

    var i= prompt("\n enter a unicode "+i)
    var str = String.fromCharCode(i)
    document.write("the unicode of the "+i+" is : "+str)

  </script>

</body>
</html>
```

- (c) Write a javascript program to create a silde show with the group of six images, also simulate the next and previous transition between slides in your javascript.

```
<html>

<body>
  <br>
  <input type="button" value="Previous" onclick="slideshow(-1)">
  <input type="button" value="Next" onclick="slideshow(1)">
  <script>
    var pics = ["img1.jpg", "img2.jpg", "img3.jpg",
"img4.jpg", "img5.jpg", "img6.jpg"];
    var count = 0;
    function slideshow(status) {
      count = count + status;
      if (count > pics.length - 1) {
        count = 0;
      }
      if (count < 0) {
        count = pics.length - 1;
      }
    }
  </script>
</body>
</html>
```



```
        }
        document.getElementById("img").src = pics[count];
    }
</script>
</body>

</html>
```

6. Attempt any TWO of the following :**12**

- (a) Write a javascript to open a new window and the new window is having two frames. One frame containing button as “click here !”, and after clicking this button an image should open in the second frame of that child window.

```
<!DOCTYPE html>
<html lang="en">

<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Document</title>
</head>

<body>
  <input onclick="newwin()" type="button" value="click me to open new window ">

  <script>
    function newwin() {
      if (1) {
        var myWindow = window.open("", "", "width=1440,height=800");
        var content = `
          <html>
          <head>
            <title>Image Frames</title>
          </head>
          <frameset cols="50%,50%">
            <frame src="frame1.html" name="frame1" >
            <frame src="frame2.html" name="frame2" >
          </frameset>
          </html>
        `;
        // the above code is essential to open new html page in newwindow
        // with frameset tag using name and target
        myWindow.document.write(content);

      }
    }
  </script>
</body>
</html>
```

```
</script>
```

```
</body>
```

```
</html>
```

```
frame1.html
```

```
<!DOCTYPE html>
```

```
<html lang="en">
```

```
<head>
```

```
  <meta charset="UTF-8">
```

```
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
```

```
  <title>Document</title>
```

```
</head>
```

```
<body>
```

```
  <a href="img1.jpg " style="max-width:50%; max-height:100%"  
target="frame2">Click me to view in child window </a>
```

```
</body>
```

```
</html>
```

```
Frame2.html
```

```
<!DOCTYPE html>
```

```
<html lang="en">
```

```
<head>
```

```
  <meta charset="UTF-8">
```

```
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
```

```
  <title>Document</title>
```

```
</head>
```

```
<body>
```

```
</body>
```

```
</html>
```

```
// can keep the body blank as image will be displayed
```

- (b) Write a javascript to create option list containing list of images and then display images in new window as per selection.

```
<!DOCTYPE html>
<html lang="en">
<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-scale=1.0">
  <title>Document</title>
</head>
<body>
  <select name="" id="images" onchange="new1()">
    <option value="">---select---</option>
    <option value="img1.jpg">image 1</option>
    <option value="img2.jpg">image 2</option>
    <option value="img3.jpg">image 3</option>
  </select>

  <script>
    function new1(){
      var selectedImage = document.getElementById("images").value;

      var newwin = window.open("", "new page", "width = 600,height =600%")
      newwin.document.body.innerHTML = '';

    }
  </script>
</body>
</html>
```

- (c) Write a javascript function to generate Fibonacci series till user defined limit.

```
<!DOCTYPE html>
<html lang="en">

<head>
  <meta charset="UTF-8">
  <meta name="viewport" content="width=device-width, initial-
    scale=1.0">
  <title>Document</title>
</head>

<body>
  <script>
    var n1 = 0, n2 = 1, next, i;
    function fibonacii(limit) {
      for (i = 1; i <= limit; i++) {
        document.write(n1 + "<br>")
        next = n1 + n2;
        n1 = n2
        n2 = next
      }
    }
    var limit = parseInt(prompt("enter a limit to fibonacii"))
    fibonacii(limit)

  </script>

</body>
</html>
```

